SOLICITATION, OFFER AND AWARD

1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700): RATING DO-C9

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2. CONTRACT NUMBER	3. SOLICITATION NUMBER	4. TYPE OF SOLICITATION	5. DATE ISSUED	6. REQUISITION/PURCHASE NUMBER
NNK11EA08C	NNK10294259R	SEALED BID (IFB) X NEGOTIATED (RFP)		4200294259

7. ISSUED BY CODE KS C

NASA/John F. Kennedy Space Center
Office of Procurement
MAIL CODE OP-ES
KENNEDY SPACE CENTER FL 32899

8. ADDRESS OFFER TO (If other than Item 7)

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

SOLICITATION

9. Sealed offers in original and _____ copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if hand carried, in depository located in SEE PROVISION L.27 until _____ (Hour) local time _____ (Date)

CAUTION: LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-1. All offers are subject to all terms and conditions contained in this

10. FOR INFORMATION CALL:	A. NAME	B. TELEPHONE (NO COLLECT CALLS) AREA CODE	NUMBER	EXT.	C. E-MAIL ADDRESS
	Mary Kiss	321	867-3381		Mary.Kiss-2@nasa.gov

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OFFER *(Must be fully completed by offeror)*

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted 240 calendar days (60 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT *(See Section I, Clause No. 52.232.8)*	10 CALENDAR DAYS (%)	20 CALENDAR DAYS (%)	30 CALENDAR DAYS (%)	CALENDAR DAYS (%)

14. ACKNOWLEDGEMENT OF AMENDMENTS *(The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated):*	AMENDMENT NO.	DATE	AMENDMENT NO.	DATE
	001	12/18/09	003	02/12/10
	002	02/01/10	004	08/18/10

15A. NAME AND ADDRESS OF OFFEROR — CODE 827599759 FACILITY 57SH7

QINETIQ NORTH AMERICA
MISSION SOLUTIONS GROUP
2677 PROSPERITY AVE STE 400
FAIRFAX VA 22031-4929

16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER *(Type or print)*

Jill E. Schroeder
Director of Contracts
QNA/MSG

15B. TELEPHONE NUMBER AREA CODE	NUMBER	EXT.	15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE.	17. SIGNATURE	18. OFFER DATE
			☐	Jill E Schroeder	10/01/2010

AWARD *(To be completed by government)*

19. ACCEPTED AS TO ITEMS NUMBERED: See section B contract effective date is 03/01/2011

20. AMOUNT: See Section B

21. ACCOUNTING AND APPROPRIATION

22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: 10 U.S.C. 2304 (c) ( ) 41 U.S.C. 253 (c) ( )

23. SUBMIT INVOICES TO ADDRESS SHOWN IN *(4 copies unless otherwise specified)* ITEM G.9

24. ADMINISTERED BY *(If other than Item 7)* CODE KSC

25. PAYMENT WILL BE MADE BY See Schedule G CODE NSSC

26. NAME OF CONTRACTING OFFICER *(Type or print)*

Dudley R. Cannon, Jr

27. UNITED STATES OF AMERICA *(Signature of Contracting Officer)* Dudley R Cannon, Jr

28. AWARD DATE 12-17-10

IMPORTANT - Award will be made on this Form, or on Standard Form 26, or by other authorized official written

AUTHORIZED FOR LOCAL REPRODUCTION
Previous edition is unusable

CONTINUATION SHEET	REFERENCE NO. OF DOCUMENT BEING CONTINUED NNK11EA08C	PAGE 2 OF 2

NAME OF OFFEROR OR CONTRACTOR
MISSION SOLUTIONS GROUP

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	INCO TERMS 1: FOB INCO TERMS 2: DESTINATION FOB: Destination See page 13 - Section B * For the purposes of placing maximum Not to Exceed (NTE) amount on this contract, the maximum amount of IDIQ supplies and services ordered in total under this contract shall not exceed the maximum NTE amount of $1.8 Billion. This NTE amount includes both cost and fee. The maximum NTE amount is an estimate and does not reflect an obligation of the Government. (see clause I.145)				

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SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS

B.1 NFS 1852.216-85 ESTIMATED COST AND AWARD FEE. (SEP 1993)

The estimated cost of this contract is $TBD. The maximum available award fee is $TBD. Total estimated cost and maximum award fee are $TBD.

(End of clause)

B.2 SUPPLIES AND SERVICES TO BE PROVIDED

The Contractor shall provide all resources (except as may be expressly stated in the contract as furnished by the Government) necessary to deliver and/or perform the items listed in Table B.2-1, *Supplies and Services to be Provided*, in accordance with Attachment J-01,Performance Work Statement (PWS).

Table B.2-1 Supplies and Services to be Provided

Reference Replacement Table B.2-1 (Excel File) for replacement pages 13.1, 14, 15 of subject contract.

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Table B.2-1 Supplies and Services to be Provided

Original CLIN	CLIN	Description	Contract Year (KY) - Note 1 Estimated:	Cost	Award Fee	Total	Government Fiscal Year (GFY) - Note 2 Estimated	Cost	Award Fee	Total	Award Fee Period (AFP) - Note 3	Cost	Award Fee	Total	
Baseline	**001**	**PWS 1.0 Baseline**	**Baseline Requirement**	**$** [redacted]	[redacted]	**$ 89,611,038**	**GFY**	**$** [redacted]	[redacted]	**$ 89,611,038**	**AFP**	**$** [redacted]	[redacted]	**$ 51,923,458**	
1	001.1	Base Yr 1	KY1 03/01/11 - 02/29/12	$ [redacted]	[redacted]	**$ 11,775,164**	11/12 Base Yr 1	03/01/11 - 02/29/12 $ [redacted]	[redacted]	**$ 11,775,164**	AFP1	$ [redacted]	[redacted]	**$ 11,729,998**	
1	001.2	Base Yr 2	KY2 03/01/12 - 02/28/13	$ [redacted]	[redacted]	**$ 11,346,427**	12 Base Yr 2	03/01/12 - 09/30/12 $ [redacted]	[redacted]	**$ 6,768,365**	AFP2	$ [redacted]	[redacted]	**$ 6,731,278**	
1	001.3	Base Yr 3	KY3 03/01/13 - 02/28/14	$ [redacted]	[redacted]	**$ 11,422,738**	13 Base Yr 2 & 3	10/01/12 - 09/30/13 $ [redacted]	[redacted]	**$ 11,387,773**	AFP3	$ [redacted]	[redacted]	**$ 11,349,337**	
1	001.4	Base Yr 4	KY4 03/01/14 - 02/28/15	$ [redacted]	[redacted]	**$ 10,937,573**	14 Base Yr 3 & 4	10/01/13 - 09/30/14 $ [redacted]	[redacted]	**$ 11,170,779**	AFP4	$ [redacted]	[redacted]	**$ 11,170,779**	Note 4
1	001.5	Base Yr 5	KY5 03/01/15 - 02/29/16	$ [redacted]	[redacted]	**$ 11,075,155**	15 Base Yr 4 & 5	10/01/14 - 09/30/15 $ [redacted]	[redacted]	**$ 10,942,066**	AFP5	$ [redacted]	[redacted]	**$ 10,942,066**	Note 4
							16 Base Yr 5	10/01/15 - 02/29/16 $ [redacted]	[redacted]	**$ 4,512,910**	AFP6	$ -	$ -	**$ -**	
23	001.6	Option Yr 1	KY6 03/01/16 - 02/28/17	$ [redacted]	[redacted]	**$ 11,317,749**	16 Opt Yr 1	03/01/16 - 09/30/16 $ [redacted]	[redacted]	**$ 6,747,120**	AFP6	$ -	$ -	**$ -**	
31	001.7	Option Yr 2	KY7 03/01/17 - 02/28/18	$ [redacted]	[redacted]	**$ 10,794,190**	17 Opt Yr 1 & 2	10/01/16 - 09/30/17 $ [redacted]	[redacted]	**$ 11,005,627**	AFP7	$ -	$ -	**$ -**	
39	001.8	Option Yr 3	KY8 03/01/18 - 02/28/19	$ [redacted]	[redacted]	**$ 10,942,042**	18 Opt Yr 2 & 3	10/01/17 - 09/30/18 $ [redacted]	[redacted]	**$ 10,882,332**	AFP8	$ -	$ -	**$ -**	
	001.9						18/19 Opt Yr 3	10/01/18 - 02/28/19 $ [redacted]	[redacted]	**$ 4,418,902**	AFP9	$ -	$ -	**$ -**	
IDIQ	**002**	**PWS 2.0 IDIQ**	**IDIQ Requirement**	**$** [redacted]	[redacted]	**$ 746,459,774**	**GFY**	**$** [redacted]	[redacted]	**$ 746,459,774**	**AFP**	**$** [redacted]	[redacted]	**$ 303,896,869**	
2	002.1	Base Yr 1	KY1 03/01/11 - 02/29/12	$ [redacted]	[redacted]	**$ 59,119,265**	11/12 Base Yr 1	03/01/11 - 02/29/12 $ [redacted]	[redacted]	**$ 59,119,265**	AFP1	$ [redacted]	[redacted]	**$ 77,567,451**	
2	002.2	Base Yr 2	KY2 03/01/12 - 02/28/13	$ [redacted]	[redacted]	**$ 60,939,701**	12 Base Yr 2	03/01/12 - 09/30/12 [redacted]	[redacted]	**$ 36,329,437**	AFP2	$ [redacted]	[redacted]	**$ 63,739,055**	
2	002.3	Base Yr 3	KY3 03/01/13 - 02/28/14	$ [redacted]	[redacted]	**$ 67,433,425**	13 Base Yr 2 & 3	10/01/12 - 09/30/13 $ [redacted]	[redacted]	**$ 64,810,960**	AFP3	$ [redacted]	[redacted]	**$ 162,590,363**	
2	002.4	Base Yr 4	KY4 03/01/14 - 02/28/15	$ [redacted]	[redacted]	**$ 108,637,291**	14 Base Yr 3 & 4	10/01/13 - 09/30/14 $ [redacted]	[redacted]	**$ 91,997,268**	AFP4	$ -	$ -	**$ -**	
2	002.5	Base Yr 5	KY5 03/01/15 - 02/29/16	[redacted]	[redacted]	**$ 109,693,941**	15 Base Yr 4 & 5	10/01/14 - 09/30/15 $ [redacted]	[redacted]	**$ 109,267,216**	AFP5	$ -	$ -	**$ -**	
							16 Base Yr 5	10/01/15 - 02/29/16 $ [redacted]	[redacted]	**$ 44,299,477**	AFP6	$ -	$ -	**$ -**	
24	002.6	Option Yr 1	KY6 03/01/16 - 02/28/17	$ [redacted]	[redacted]	**$ 116,384,533**	16 Opt Yr 1	03/01/16 - 09/30/16 $ [redacted]	[redacted]	**$ 69,383,087**	AFP6	$ -	$ -	**$ -**	
32	002.7	Option Yr 2	KY7 03/01/17 - 02/28/18	$ [redacted]	[redacted]	**$ 116,286,763**	17 Opt Yr 1 & 2	10/01/16 - 09/30/17 $ [redacted]	[redacted]	**$ 116,326,247**	AFP7	$ -	$ -	**$ -**	
40	002.8	Option Yr 3	KY8 03/01/18 - 02/28/19	[redacted]	[redacted]	**$ 107,964,855**	18 Opt Yr 2 & 3	10/01/17 - 09/30/18 $ [redacted]	[redacted]	**$ 111,325,625**	AFP8	$ -	$ -	**$ -**	
	002.9						18/19 Opt Yr 3	10/01/18 - 02/28/19 $ [redacted]	[redacted]	**$ 43,601,192**	AFP9	$ -	$ -	**$ -**	
EML IT6	**003**	**PWS 1.4 Baseline (Option)**	**(IT6) EML - Electromag Interference Testing Lab Maint**	**$** [redacted]	[redacted]	**$ 1,851,025**	**GFY**	**$** [redacted]	[redacted]	**$ 1,851,025**	**AFP**	**$** [redacted]	[redacted]	**$ 629,540**	
3	003.1	Base Yr 1	KY1 03/01/11 - 02/29/12	$ [redacted]	[redacted]	**$ 211,640**	11/12 Base Yr 1	03/01/11 - 02/29/12 $ [redacted]	[redacted]	**$ 211,640**	AFP1	$ -	$ -	**$ -**	
4	003.2	Base Yr 2	KY2 03/01/12 - 02/28/13	$ [redacted]	[redacted]	**$ 215,875**	12 Base Yr 2	03/01/12 - 09/30/12 $ [redacted]	[redacted]	**$ 128,695**	AFP2	$ -	$ -	**$ -**	
5	003.3	Base Yr 3	KY3 03/01/13 - 02/28/14	$ [redacted]	[redacted]	**$ 249,324**	13 Base Yr 2 & 3	10/01/12 - 09/30/13 $ [redacted]	[redacted]	**$ 235,814**	AFP3	$ [redacted]	[redacted]	**$ 148,252**	Note 5
6	003.4	Base Yr 4	KY4 03/01/14 - 02/28/15	$ [redacted]	[redacted]	**$ 236,979**	14 Base Yr 3 & 4	10/01/13 - 09/30/14 $ [redacted]	[redacted]	**$ 241,967**	AFP4	$ [redacted]	[redacted]	**$ 241,967**	Note 4,5
7	003.5	Base Yr 5	KY5 03/01/15 - 02/29/16	$ [redacted]	[redacted]	**$ 234,805**	15 Base Yr 4 & 5	10/01/14 - 09/30/15 $ [redacted]	[redacted]	**$ 239,319**	AFP5	$ [redacted]	[redacted]	**$ 239,321**	Note 4,5
							16 Base Yr 5	10/01/15 - 02/29/16 $ [redacted]	[redacted]	**$ 91,189**	AFP6	$ -	$ -	**$ -**	
25	003.6	Option Yr 1	KY6 03/01/16 - 02/28/17	$ [redacted]	[redacted]	**$ 229,663**	16 Opt Yr 1	03/01/16 - 09/30/16 $ [redacted]	[redacted]	**$ 136,914**	AFP6	$ -	$ -	**$ -**	
33	003.7	Option Yr 2	KY7 03/01/17 - 02/28/18	$ [redacted]	[redacted]	**$ 234,291**	17 Opt Yr 1 & 2	10/01/16 - 09/30/17 $ [redacted]	[redacted]	**$ 232,422**	AFP7	$ -	$ -	**$ -**	
41	003.8	Option Yr 3	KY8 03/01/18 - 02/28/19	$ [redacted]	[redacted]	**$ 238,448**	18 Opt Yr 2 & 3	10/01/17 - 09/30/18 $ [redacted]	[redacted]	**$ 236,770**	AFP8	$ -	$ -	**$ -**	
	003.9						18/19 Opt Yr 3	10/01/18 - 02/28/19 $ [redacted]	[redacted]	**$ 96,295**	AFP9	$ -	$ -	**$ -**	
ICL CA1	**004**	**PWS 1.4 Baseline (Option)**	**(CA1) ICL - Inst Calibration Labs Maint**	**$** [redacted]	[redacted]	**$ 3,347,633**	**GFY**	**$** [redacted]	[redacted]	**$ 3,347,633**	**AFP**	**$** [redacted]	[redacted]	**$ 681,992**	
8	004.3	Base Yr 3	KY3 10/01/13 - 02/28/14	$ [redacted]	[redacted]	**$ 238,810**	13	10/01/12 - 09/30/13 $ -	$ -	**$ -**	AFP3	$ -	$ -	**$ -**	
9	004.4	Base Yr 4	KY4 03/01/14 - 02/28/15	$ [redacted]	[redacted]	**$ 618,983**	14 Base Yr 3 & 4 Opt	10/01/13 - 09/30/14 $ [redacted]	[redacted]	**$ 584,569**	AFP4	$ -	$ -	**$ -**	
10	004.5	Base Yr 5	KY5 03/01/15 - 02/29/16	$ [redacted]	[redacted]	**$ 647,592**	15 Base Yr 4 & 5 Opt	10/01/14 - 09/30/15 $ [redacted]	[redacted]	**$ 681,994**	AFP5	$ [redacted]	[redacted]	**$ 681,992**	Note 4,5
							16 Base Yr 5 Opt	10/01/15 - 02/29/16 $ [redacted]	[redacted]	**$ 238,822**	AFP6	$ -	$ -	**$ -**	
26	004.6	Option Yr 1	KY6 03/01/16 - 02/28/17	$ [redacted]	[redacted]	**$ 601,932**	16 Opt Yr 1	03/01/16 - 09/30/16 $ [redacted]	[redacted]	**$ 358,844**	AFP6	$ -	$ -	**$ -**	
34	004.7	Option Yr 2	KY7 03/01/17 - 02/28/18	$ [redacted]	[redacted]	**$ 614,602**	17 Opt Yr 1 & 2	10/01/16 - 09/30/17 $ [redacted]	[redacted]	**$ 609,486**	AFP7	$ -	$ -	**$ -**	
42	004.8	Option Yr 3	KY8 03/01/18 - 02/28/19	$ [redacted]	[redacted]	**$ 625,714**	18 Opt Yr 2 & 3	10/01/17 - 09/30/18 $ [redacted]	[redacted]	**$ 621,225**	AFP8	$ -	$ -	**$ -**	
	004.9						18/19 Opt Yr 3	10/01/18 - 02/28/19 $ [redacted]	[redacted]	**$ 252,693**	AFP9	$ -	$ -	**$ -**	

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Table B.2-1 Supplies and Services to be Provided

Original CLIN	CLIN	Description	Contract Year (KY) - Note 1 Estimated:			Cost	Award Fee	Total	Government Fiscal Year (GFY) - Note 2 Estimated			Cost	Award Fee	Total	Award Fee Period (AFP) - Note 3	Cost	Award Fee	Total	
NDE PS11	**005**	**PWS 1.4 Baseline (Option)**	**(PS11)**	**Physical Sciences - Inst. NDE Lab Maint**		**$** [redacted]		**$ 1,309,750**	**GFY**			**$** [redacted]		**$ 1,309,750**	**AFP**	**$** [redacted]		**$ 410,624**	
11	005.3	Base Yr 3	KY3	10/01/13 - 02/28/14		$ [redacted]		**$ 81,650**	13		10/01/12 - 09/30/13	$ -	$ -	**$ -**	AFP3	$ -	$ -	**$ -**	
12	005.4	Base Yr 4	KY4	03/01/14 - 02/28/15		$ [redacted]		**$ 285,455**	14	Base Yr 3 & 4 Opt	10/01/13 - 09/30/14	$ [redacted]		**$ 199,365**	AFP4	$ -	$ -	**$ -**	
13	005.5	Base Yr 5	KY5	03/01/15 - 02/29/16		$ [redacted]		**$ 323,836**	15	Base Yr 4 & 5 Opt	10/01/14 - 09/30/15	$ [redacted]		**$ 410,628**	AFP5	$ [redacted]	[redacted]6	**$ 410,624**	Note 4,5
									16	Base Yr 5 Opt	10/01/15 - 02/29/16	$ [redacted]		**$ 80,948**	AFP6	$ -	$ -	**$ -**	
27	005.6	Option Yr 1	KY6	03/01/16 - 02/28/17		$ [redacted]		**$ 203,119**	16	Opt Yr 1	03/01/16 - 09/30/16	$ [redacted]		**$ 121,091**	AFP6	$ -	$ -	**$ -**	
35	005.7	Option Yr 2	KY7	03/01/17 - 02/28/18		$ [redacted]		**$ 206,436**	17	Opt Yr 1 & 2	10/01/16 - 09/30/17	$ [redacted]		**$ 205,095**	AFP7	$ -	$ -	**$ -**	
43	005.8	Option Yr 3	KY8	03/01/18 - 02/28/19		$ [redacted]		**$ 209,254**	18	Opt Yr 2 & 3	10/01/17 - 09/30/18	$ [redacted]		**$ 208,117**	AFP8	$ -	$ -	**$ -**	
	005.9								18/19	Opt Yr 3	10/01/18 - 02/28/19	$ [redacted]		**$ 84,506**	AFP9	$ -	$ -	**$ -**	
Chem PS9	**006**	**PWS 1.4 Baseline (Option)**	**(PS9)**	**Physical Sciences - Inst. Chem Analysis Lab Maint**		**$** [redacted]		**$ 4,873,481**	**GFY**			**$** [redacted]		**$ 4,873,481**	**AFP**	**$** [redacted]		**$ 926,453**	
14	006.3	Base Yr 3	KY3	10/01/13 - 02/28/14		$ [redacted]		**$ 358,556**	13		10/01/12 - 09/30/13	$ -	$ -	**$ -**	AFP3	$ -	$ -	**$ -**	
15	006.4	Base Yr 4	KY4	03/01/14 - 02/28/15		$ [redacted]		**$ 888,257**	14	Base Yr 3 & 4 Opt	10/01/13 - 09/30/14	$ [redacted]		**$ 875,558**	AFP4	$ -	$ -	**$ -**	
16	006.5	Base Yr 5	KY5	03/01/15 - 02/29/16		$ [redacted]		**$ 910,604**	15	Base Yr 4 & 5 Opt	10/01/14 - 09/30/15	$ [redacted]		**$ 926,453**	AFP5	$ [redacted]		**$ 926,453**	Note 4,5
									16	Base Yr 5 Opt	10/01/15 - 02/29/16	$ [redacted]		**$ 355,406**	AFP6	$ -	$ -	**$ -**	
28	006.6	Option Yr 1	KY6	03/01/16 - 02/28/17		$ [redacted]		**$ 891,639**	16	Opt Yr 1	03/01/16 - 09/30/16	$ [redacted]		**$ 531,554**	AFP6	$ -	$ -	**$ -**	
36	006.7	Option Yr 2	KY7	03/01/17 - 02/28/18		$ [redacted]		**$ 905,913**	17	Opt Yr 1 & 2	10/01/16 - 09/30/17	$ [redacted]		**$ 900,149**	AFP7	$ -	$ -	**$ -**	
44	006.8	Option Yr 3	KY8	03/01/18 - 02/28/19		$ [redacted]		**$ 918,512**	18	Opt Yr 2 & 3	10/01/17 - 09/30/18	$ [redacted]		**$ 913,423**	AFP8	$ -	$ -	**$ -**	
	006.9								18/19	Opt Yr 3	10/01/18 - 02/28/19	$ [redacted]		**$ 370,938**	AFP9	$ -	$ -	**$ -**	
Component PS10	**007**	**PWS 1.4 Baseline (Option)**	**(PS10)**	**Physical Sciences - Inst. Component Cleaning Lab Maint**		**$** [redacted]		**$ 1,901,103**	**GFY**			**$** [redacted]		**$ 1,901,103**	**AFP**	**$** [redacted]		**$ 245,324**	
17	007.3	Base Yr 3	KY3	10/01/13 - 02/28/14		$ [redacted]		**$ 144,433**	13		10/01/12 - 09/30/13	$ -	$ -	**$ -**	AFP3	$ -	$ -	**$ -**	
18	007.4	Base Yr 4	KY4	03/01/14 - 02/28/15		$ [redacted]		**$ 306,569**	14	Base Yr 3 & 4 Opt	10/01/13 - 09/30/14	$ [redacted]		**$ 355,223**	AFP4	$ -	$ -	**$ -**	
19	007.5	Base Yr 5	KY5	03/01/15 - 02/29/16		$ [redacted]		**$ 296,476**	15	Base Yr 4 & 5 Opt	10/01/14 - 09/30/15	$ [redacted]		**$ 245,320**	AFP5	$ [redacted]		**$ 245,324**	Note 4,5
									16	Base Yr 5 Opt	10/01/15 - 02/29/16	$ [redacted]		**$ 146,935**	AFP6	$ -	$ -	**$ -**	
29	007.6	Option Yr 1	KY6	03/01/16 - 02/28/17		$ [redacted]		**$ 373,607**	16	Opt Yr 1	03/01/16 - 09/30/16	$ [redacted]		**$ 222,727**	AFP6	$ -	$ -	**$ -**	
37	007.7	Option Yr 2	KY7	03/01/17 - 02/28/18		$ [redacted]		**$ 385,018**	17	Opt Yr 1 & 2	10/01/16 - 09/30/17	$ [redacted]		**$ 380,410**	AFP7	$ -	$ -	**$ -**	
45	007.8	Option Yr 3	KY8	03/01/18 - 02/28/19		$ [redacted]		**$ 395,000**	18	Opt Yr 2 & 3	10/01/17 - 09/30/18	$ [redacted]		**$ 390,969**	AFP8	$ -	$ -	**$ -**	
	007.9								18/19	Opt Yr 3	10/01/18 - 02/28/19	$ [redacted]		**$ 159,519**	AFP9	$ -	$ -	**$ -**	
Shuttle NDE PS12	**008**	**PWS 1.4 Baseline (Option)**	**(PS12)**	**Physical Sciences - Shuttle NDE Lab Maint**		**$** [redacted]		**$ 2,382,688**	**GFY**			**$** [redacted]		**$ 2,382,688**	**AFP**	**$ -**		**$ -**	
20	008.3	Base Yr 3	KY3	10/01/13 - 02/28/14		$ [redacted]		**$ 175,447**	13		10/01/12 - 09/30/13	$ -	$ -	**$ -**	AFP3	$ -	$ -	**$ -**	
21	008.4	Base Yr 4	KY4	03/01/14 - 02/28/15		$ [redacted]		**$ 425,759**	14	Base Yr 3 & 4 Opt	10/01/13 - 09/30/14	$ [redacted]		**$ 429,264**	AFP4	$ -	$ -	**$ -**	
22	008.5	Base Yr 5	KY5	03/01/15 - 02/29/16		$ [redacted]		**$ 433,595**	15	Base Yr 4 & 5 Opt	10/01/14 - 09/30/15	$ [redacted]		**$ 430,431**	AFP5	$ -	$ -	**$ -**	
									16	Base Yr 5 Opt	10/01/15 - 02/29/16	$ [redacted]		**$ 175,106**	AFP6	$ -	$ -	**$ -**	
30	008.6	Option Yr 1	KY6	03/01/16 - 02/28/17		$ [redacted]		**$ 440,868**	16	Opt Yr 1	03/01/16 - 09/30/16	$ [redacted]		**$ 262,825**	AFP6	$ -	$ -	**$ -**	
38	008.7	Option Yr 2	KY7	03/01/17 - 02/28/18		$ [redacted]		**$ 449,597**	17	Opt Yr 1 & 2	10/01/16 - 09/30/17	$ [redacted]		**$ 446,072**	AFP7	$ -	$ -	**$ -**	
46	008.8	Option Yr 3	KY8	03/01/18 - 02/28/19		$ [redacted]		**$ 457,422**	18	Opt Yr 2 & 3	10/01/17 - 09/30/18	$ [redacted]		**$ 454,261**	AFP8	$ -	$ -	**$ -**	
	008.9								18/19	Opt Yr 3	10/01/18 - 02/28/19	$ [redacted]		**$ 184,729**	AFP9	$ -	$ -	**$ -**	
						[redacted]	[redacted]	**$ 851,736,492**				**$** [redacted]	[redacted]	**$ 851,736,492**		**$** [redacted]	[redacted]	**$ 358,714,260**	

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Table B.2-1 Supplies and Services to be Provided

Original CLIN	CLIN	Description	Estimated:	Contract Year (KY) - Note 1 Cost	Contract Year (KY) - Note 1 Award Fee	Contract Year (KY) - Note 1 Total	Government Fiscal Year (GFY) - Note 2 Estimated	Government Fiscal Year (GFY) - Note 2 Cost	Government Fiscal Year (GFY) - Note 2 Award Fee	Government Fiscal Year (GFY) - Note 2 Total	Award Fee Period (AFP) - Note 3 Cost	Award Fee Period (AFP) - Note 3 Award Fee	Award Fee Period (AFP) - Note 3 Total
				Cost	Award Fee	Total		Cost	Award Fee	Total	Cost	Award Fee	Total
Base Pd	001	PWS 1.0	Baseline Requirement	[redacted]	[redacted]	$ 56,557,057		[redacted]	[redacted]	$ 56,557,057	$[redacted]	[redacted]	$ 51,923,458
Base Pd	002	PWS 2.0	IDIQ Requirement	[redacted]	[redacted]	$ 405,823,623		[redacted]	[redacted]	$ 405,823,623	$[redacted]	[redacted]	$ 303,896,869
				[redacted]	[redacted]	$ 462,380,680		[redacted]	[redacted]	$ 462,380,680	[redacted]	[redacted]	$ 355,820,327
Bs Pd Opt's	003	PWS 1.4	EML - Electromag Interference	[redacted]	[redacted]	$ 1,148,623		[redacted]	[redacted]	$ 1,148,624	$[redacted]	[redacted]	$ 629,540
Bs Pd Opt's	004	PWS 1.4	ICL - Inst Calibration Labs Main	[redacted]	[redacted]	$ 1,505,385		[redacted]	$[redacted]	$ 1,505,385	$[redacted]	[redacted]	$ 681,992
Bs Pd Opt's	005	PWS 1.4	PS - Inst. NDE Lab Maint	$[redacted]	[redacted]	$ 690,941		$[redacted]	[redacted]	$ 690,941	$[redacted]	[redacted]	$ 410,624
Bs Pd Opt's	006	PWS 1.4	PS - Inst. Chem Analysis Lab M	$[redacted]	[redacted]	$ 2,157,417		$[redacted]	[redacted]	$ 2,157,417	$[redacted]	[redacted]	$ 926,453
Bs Pd Opt's	007	PWS 1.4	PS - Inst. Component Cleaning	[redacted]	[redacted]	$ 747,478		$[redacted]	[redacted]	$ 747,478	$[redacted]	[redacted]	$ 245,324
Bs Pd Opt's	008	PWS 1.4	PS - Shuttle NDE Lab Maint	[redacted]	[redacted]	$ 1,034,801		[redacted]	[redacted]	$ 1,034,801	$ -	$ -	$ -
				$[redacted]	[redacted]	$ 7,284,645		$[redacted]	[redacted]	$ 7,284,646	$[redacted]	[redacted]	$ 2,893,933
Opt Yrs	001	PWS 1.0	Baseline Requirement	[redacted]	[redacted]	$ 33,053,981		$[redacted]	[redacted]	$ 33,053,981	$ -	$ -	$ -
Opt Yrs	002	PWS 2.0	IDIQ Requirement	$[redacted]	[redacted]	$ 340,636,151		$[redacted]	[redacted]	$ 340,636,151	$ -	$ -	$ -
Opt Yrs	003	PWS 1.4	EML - Electromag Interference	[redacted]	[redacted]	$ 702,402		$[redacted]	[redacted]	$ 702,401	$ -	$ -	$ -
Opt Yrs	004	PWS 1.4	ICL - Inst Calibration Labs Main	$[redacted]	[redacted]	$ 1,842,248		$[redacted]	[redacted]	$ 1,842,248	$ -	$ -	$ -
Opt Yrs	005	PWS 1.4	PS - Inst. NDE Lab Maint	$[redacted]	[redacted]	$ 618,809		$[redacted]	[redacted]	$ 618,809	$ -	$ -	$ -
Opt Yrs	006	PWS 1.4	PS - Inst. Chem Analysis Lab M	$[redacted]	[redacted]	$ 2,716,064		$[redacted]	[redacted]	$ 2,716,064	$ -	$ -	$ -
Opt Yrs	007	PWS 1.4	PS - Inst. Component Cleaning I	$[redacted]	[redacted]	$ 1,153,625		$[redacted]	$[redacted]	$ 1,153,625	$ -	$ -	$ -
Opt Yrs	008	PWS 1.4	PS - Shuttle NDE Lab Maint	$[redacted]	[redacted]	$ 1,347,887		$[redacted]	$[redacted]	$ 1,347,887	$ -	$ -	$ -
				$[redacted]	[redacted]	$ 382,071,167		$[redacted]	[redacted]	$ 382,071,166	$ -	$ -	$ -
				[redacted]	[redacted]	$ 851,736,492		$[redacted]	[redacted]	$ 851,736,492	$[redacted]	[redacted]	$ 358,714,260

-

Note 1	KY	Structured by Contract Year (KY) as initially Proposed
Note 2	GFY	Prorated by Government Fiscal Year (GFY)
Note 3	AFP	Represents the value associated with the Award Fee Period (AFP) and includes any options exercised
Note 4	AFP	Award Fee will be adjusted to reflect earned award fee at the conclusion of the AFP
Note 5	M&A	Amount incorporates M&A and M&A Fee, which was reduced from CLIN 1

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Reference Replacement Table B.2-1 (Excel File) for replacement pages 13.1, 14, and 15

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Reference Replacement Table B.2-1 (Excel File) for replacement pages 13.1, 14, and 15

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Reference Replacement Table B.2-1 (Excel File) for replacement pages 13.1, 14, and 15

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Reference Replacement Table B.2-1 (Excel File) for replacement pages 13.1, 14, and 15

B.3 INDEFINITE-DELIVERY/INDEFINITE-QUANTITY (IDIQ) SERVICES (CLIN 002)

The Government may order Indefinite-Delivery/Indefinite-Quantity (IDIQ) services at any time after contract start, in accordance with the procedures set forth in Section H Clause, NFS 1852.216-80 Task Ordering Procedure and Section I, FAR Clauses 52.216-18 Ordering, 52.216-19 Order Limitations, and 52.216-22 Indefinite Quantity of this contract. The tasks may be performed in a teaming arrangement with the Government or other contractors. The Government will define the overall requirements of each order, including intermediate and final deliverable end items, and decide the respective responsibilities of each organization participating in the effort. Tasks may be completion-type or term-type, as determined by the Contracting Officer, and in accordance with the nature of the work required. The Contractor shall only accept task orders issued by the Contracting Officer.

The Contractor shall utilize the fully burdened rates shown in Attachment J-04, Task Order Pricing Rate Schedule, for pricing task orders. For each IDIQ task order issued, the award fee pool will be increased by 6.0% of the estimated fee bearing cost for that order. Additionally, for budgetary purpose, task order pricing shall address allocated Management and Administrative (M&A) cost. M&A cost are for requirements of PWS 1.1, 1.2 and 1.3 and cover whole contract management requirements only. In order that task order customers understand the full task order performance cost, the M&A hourly rate, also included in Attachment J-04, shall be applied to each proposed task order price. Allocated M&A cost are not included for IDIQ task order contract value or award fee calculations, since M&A is fully accounted for in the baseline content (PWS 1.0).

A summary of task orders issued is listed in Attachment J-02 (Task Order Summary).

(End of clause)

B.4 CONTRACT FUNDING

For purposes of payment of cost in accordance with Section I Clause, FAR 52.232-22 *Limitation of Funds*, the amounts allotted by the Government to this contract and the period through which these amounts are estimated to be adequate are specified in Table B.4-1, *Contract Funding*.

For CLIN 002, Clause I.90 FAR 52.232-22 Limitation of Funds applies at the task order level. For CLIN 001, Clause I.90 FAR 52.232-22 Limitation of Funds is applied at the CLIN level as shown in the schedule under Clause B.2, Table B.2-1.

Table B.4-1 Contract Funding

Reference Replacement Table B.4-1 on pages 21.1 of subject contract.

(End of clause)

Reference is made to caluse I.89, FAR 52.232-18 Availability of Funds (Apr 1984)

Clause 52.232-19 Availabiltiy of Funds for the Next Fiscal Year (Apr 1984) is hereby incorporated in this contract.

AVAILABILITY OF FUNDS FOR THE NEXT FISCAL YEAR (APR 1984)

Funds are not presently available for performance under this contract beyond 01 March 11. The Government's obligation for performance of this contract beyond that date is contingent upon the availability of appropriated funds from which payment for contract purposes can be made. No legal liability on the part of the Government for any payment may arise for performance under this contract beyond 01 March 11, until funds are made available to the Contracting Officer for performance and until the Contractor receives notice of availability, to be confirmed in writing by the Contracting Officer.

(End of clause)

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Table B.4-1 Contract Value and Funding

CLIN	Description	Value Change	(Estimated) Changed From	(Estimated) Changed To	Obligated	Incremental Funding Changed From	Incremental Funding Changed To	Funding Balance	Valid thru Date
001	Baseline	$ (19,708,449.25)	$ 76,265,506.25	**$ 56,557,057.00**	$ -	$ 37,123,416.27	**$ 37,123,416.27**	$ (19,433,640.73)	09/22/14
002	IDIQ	$ (1,329,669.00)	$ 542,467,492.00	**$ 541,137,823.00**	$ 2,595,100.49	$ 473,210,167.56	**$ 475,805,268.05**	$ (65,332,554.95)	Note 1
003	IT6 EML	$ 239,319.00	$ 390,601.00	**$ 629,920.00**	$ -	$ 386,686.00	**$ 386,686.00**	$ (243,234.00)	Note 4
004	CA1 ICL	$ 681,994.00	$ -	**$ 681,994.00**	$ -	$ -	**$ -**	$ (681,994.00)	
005	PS11 NDE	$ 410,628.00	$ -	**$ 410,628.00**	$ -	$ -	**$ -**	$ (410,628.00)	
006	PS9 Chem	$ 926,453.00	$ -	**$ 926,453.00**	$ -	$ -	**$ -**	$ (926,453.00)	
007	PS10 Component	$ 245,320.00	$ -	**$ 245,320.00**	$ -	$ -	**$ -**	$ (245,320.00)	
		$ (18,534,404.25)	**$ 619,123,599.25**	**$ 600,589,195.00**	**$ 2,595,100.49**	**$ 510,720,269.83**	**$ 513,315,370.32**	**$ (87,273,824.68)**	**Note 2**

Note 1: Reliance is placed on the limitation of funds clause at the task order (T.O.) level (Clause I.90 FAR 52.232-22 Limitation of Funds) to ensure contractor notification of 75% funds expended to date to determine the need for additional funding to avoid an anti-deficient situation and avoiding the need for a T.O. funded thru date.

Note 2: Adequate through date does not factor in termination liability.

Note 3: Table will be corrected for any M&A Value double counted in CLIN 1 and CLIN 2

Note 4: Funded through date for GFY13 support is 9/30/13. Funded through date for GFY14 support is 09/19/14

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B.5 AWARD FEE

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The amount of award fee earned shall be determined in accordance with Attachment J-03 (Award Fee Evaluation Plan) and Section G Clause, NFS 1852.216-76 Award Fee for Service Contracts.

Table B.5-1, Award Fee, specifies the award fee available and the award fee earned.

Table B.5-1 Award Fee

[redacted]

B.6 SPECIAL COST REQUIREMENTS

The Contractor will be reimbursed for all allowable, allocable and reasonable expenditures incurred in the performance of work under Section B Clause, Supplies and Services to be Provided, of this contract subject to the following limitations:

(a) Provisional Indirect Billing Rates:

(1) Provisional billing rates for indirect cost pools will be set at the discretion of the Contracting Officer based upon proposals from the Contractor and following review by

Government auditors as identified in Table B.6-1, *Provisional Indirect Billing Rates*. These provisional billing rates may be revised either retroactively or prospectively by the Contracting Officer. Ninety (90) days prior to each Government fiscal year, the Contractor shall submit a proposal for the coming year's provisional billing rates. If during the course of any particular year a significant disparity arises between the approved provisional billing rates and the actual rates, the Contractor may submit a proposal requesting consideration for revision of the provisional rates. After expiration of each fiscal year, the Contractor shall adjust its billings to the actual rates not exceeding ceiling rates included in paragraph (b) below.

(2) Not withstanding paragraph (a)(1) above and the terms of Section I Clause, *FAR 52.216-7, Allowable Cost and Payment*, the provisional indirect rates will be examined at the conclusion of each contract year and, if necessary and warranted in the judgment of the Contracting Officer, may be adjusted upward or downward for future years. In no event shall the Contractor be allowed to recover indirect costs in excess of the indirect ceiling rates specified in Table B.6-2, *Indirect Ceiling Rates*.

Table B.6-1 Provisional Indirect Billing Rates

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

(c) Fringe Benefits

The Contractor shall inform the Contracting Officer of all proposed changes in fringe benefits which may result in an increased cost to the contract as soon as practicable, but in any event, prior to such changes being implemented. Fringe benefits costs shall comply with FAR 31.205-6(m). Fringe benefits include, but are not limited to, such items as health insurance, life insurance, pension plans, retiree health care, savings plans, bonus plans, education assistance and leave policies. Failure to comply with the terms of this clause may result in the disallowance of costs. Costs associated with sick leave hours shall be allowable costs for reimbursement under this contract only when used by the employee, and shall be allowable only to the extent used by the employee to receive pay for hours off work for approved medical purposes during a duty tour. All other lump sum or other payments for sick leave shall be considered expressly unallowable costs under this contract.

(d) RESERVED

(e) Contract Expiration and Severance Pay

Severance pay shall be allowable as provided by FAR 31.205-6(g). However, termination of employment related to contract expiration shall not be considered to be an involuntary termination

as defined by FAR 31.205-6(g). Accordingly, any payment in addition to regular salaries and wages that is made as a result of or in connection with the expiration of any basic, option, or extended period of contract performance shall be an unallowable cost. Any termination effective within 60 days of contract expiration shall be presumed to be a result of or in connection with contract expiration.

(f) Relocation Costs

Reimbursement for relocation costs shall be in accordance with the provisions of FAR 31.205-35, *Relocation Costs*. No relocation costs shall be reimbursable under this contract for employees whose residence at the time of hiring or assignment to this contract was within a fifty (50) mile radius of Kennedy Space Center, Florida.

(g) Costs Not Subject to Fee

The Contractor shall not apply fee to the non-labor cost of the following items: equipment, special tooling, special test equipment, materials and supplies (including materials and supplies procured through subcontracts), interdivisional transfers (material only), relocation costs, leases, software licenses, maintenance agreements, travel and training.

(End of clause)

B.7 STANDARDIZED VALUES

(a) The total estimated cost, including options, of this contract includes a total standardized value for the baseline content of $TBD. The estimated standardized values are broken out as follows:

Supplies, Material, Equipment and Maintenance Agreements

		BASIC PERIOD					OPTION PERIODS		
PWS/WBS	Description	KY1 01Mar2011-29Feb2012	KY2 01Mar2012-28Feb2013	KY3 01Mar2013-28Feb2014	KY4 01Mar2014-28Feb2015	KY5 01Mar2015-29Feb2016	KY6 01Mar2016-28Feb2017	KY7 01Mar2017-28Feb2018	KY8 01Mar2018-28Feb2019
Base Laboratories									
1.4.9	OEM Maintenance Agreements - Base Labs	$1,348,268	$1,348,268	$1,348,268	$1,348,268	$1,348,268	$1,348,268	$1,348,268	$1,348,268
1.4.13	Spares/Supplies/Consumables - Base Labs	$1,113,256	$1,113,256	$1,113,256	$1,113,256	$1,113,256	$1,113,256	$1,113,256	$1,113,256
Option Laboratories									
1.4.9	OEM Maintenance Agreements - Option: Calibration (CA1) Lab			$54,167	$130,000	$130,000	$130,000	$130,000	$130,000
1.4.9	OEM Maintenance Agreements - Option: Chem (PS9) Lab			$101,887	$244,528	$244,528	$244,528	$244,528	$244,528
1.4.9	OEM Maintenance Agreements - Option: NDE Shuttle (PS12) Lab			$41,148	$98,754	$98,754	$98,754	$98,754	$98,754
1.4.13	Spares/Supplies/Consumables - Option: ElectroMag Interference Test (IT6) Lab	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
1.4.13	Spares/Supplies/Consumables - Option: Calibration (CA1) Lab			$29,167	$70,000	$70,000	$70,000	$70,000	$70,000
1.4.13	Spares/Supplies/Consumables - Option: Chem (PS9) Lab			$84,676	$203,222	$203,222	$203,222	$203,222	$203,222
1.4.13	Spares/Supplies/Consumables - Option: Comp Cleaning (PS10) Lab			$4,945	$11,868	$11,868	$11,868	$11,868	$11,868
1.4.13	Spares/Supplies/Consumables - Option: NDE Institutional (PS11) Lab			$33,542	$80,500	$80,500	$80,500	$80,500	$80,500
1.4.13	Spares/Supplies/Consumables - Option: NDE Shuttle (PS12) lab			$39,458	$94,700	$94,700	$94,700	$94,700	$94,700

Travel & Training

General Travel & Training includes $3K (escalated 3% per year compounded for KY 2 through KY 8) per year (KY), per Work Year Equivalent (WYE).

(b) These standardized values are the Government's estimate for each contract year. If the actual cost of any category exceeds a 10% variance from the standardized value in a given contract year, then an adjustment to the estimated cost of the contract may be negotiated. These costs are not subject to fee per Section B Clause, Special Cost Requirements paragraph (g). Any adjustment to these costs shall not include an adjustment to award fee.

(End of clause)

SECTION C - DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK

C.1 SCOPE OF WORK

The Contractor shall provide the item or service specified in Section B in accordance with Attachment J-01 (Performance Work Statement).

(End of clause)

C.2 DATA REQUIREMENTS LIST (DRL)/DATA REQUIREMENTS (DR)

(a) The Contractor shall furnish all data identified and described in the PWS Appendix A (Data Requirements List) and all costs associated therewith are included in the estimated cost of the contract.

(b) The Government reserves the right to delay the date of delivery of any or all DRs specified in the DRL and such right may be exercised at no increase in the estimated cost. The Government also reserves the right to terminate the requirement for any or all DRs specified in the DRL. In the event the Government exercises this latter right, the estimated cost shall be decreased in accordance with FAR 52.243-2 “Changes – Cost Reimbursement (Alternate II).”

(c) To the extent that data required to be delivered under a DR is also required to be delivered under another clause of the contract, the requirements established by both the DR and such other contract clause shall apply. In the event of a conflict between the data requirements of the DR and another contract clause, the contract clause shall take precedence.

(d) Nothing contained in this clause relieves the Contractor from delivering data that is not identified in a DR, but required under another clause or section of the contract.

(End of clause)

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SECTION D - PACKAGING AND MARKING

D.1 NFS 1852.211-70 PACKAGING, HANDLING, AND TRANSPORTATION.(SEP 2005)

(a) The Contractor shall comply with NASA Procedural Requirements (NPR) 6000.1, ``Requirements for Packaging, Handling, and Transportation for Aeronautical and Space Systems, Equipment, and Associated Components'', as may be supplemented by the statement of work or specifications of this contract, for all items designated as Class I, II, or III.

(b) The Contractor's packaging, handling, and transportation procedures may be used, in whole or in part, subject to the written approval of the Contracting Officer, provided (1) the Contractor's procedures are not in conflict with any requirements of this contract, and (2) the requirements of this contract shall take precedence in the event of any conflict with the Contractor's procedures.

(c) The Contractor must place the requirements of this clause in all subcontracts for items that will become components of deliverable Class I, II, or III items.

(End of clause)

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SECTION E - INSPECTION AND ACCEPTANCE

E.1 CLAUSES INCORPORATED BY REFERENCE -- SECTION E

Clause(s) at the beginning of this Section are incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in Clause 52.252-2, Clauses Incorporated by Reference, of this contract.

E.2 FAR 52.246-3 INSPECTION OF SUPPLIES - COST-REIMBURSEMENT. (MAY 2001)

E.3 FAR 52.246-5 INSPECTION OF SERVICES - COST-REIMBURSEMENT. (APR 1984)

E.4 FAR 52.246-15 CERTIFICATE OF CONFORMANCE. (APR 1984)

E.5 NFS 1852.246-73 HUMAN SPACE FLIGHT ITEM. (MAR 1997)

E.6 FAR 52.246-11 HIGHER-LEVEL CONTRACT QUALITY REQUIREMENT. (FEB 1999)

The Contractor shall comply with the higher-level quality standard selected below.

See Attachment J-01 (Performance Work Statement), Section 1.2.9

(End of clause)

E.7 NFS 1852.246-71 GOVERNMENT CONTRACT QUALITY ASSURANCE FUNCTIONS.(OCT 1988)

In accordance with the inspection clause of this contract, the Government intends to perform the following functions at the locations indicated:

Inspection and acceptance of all work shall be performed at John F. Kennedy Space Center (KSC), Cape Canaveral Air Force Station (CCAFS), Patrick Air Force Base (PAFB), and other places of performance required under this contract.

(End of clause)

E.8 NFS 1852.246-72 MATERIAL INSPECTION AND RECEIVING REPORT. (AUG 2003)

(a) At the time of each delivery to the Government under this contract, the Contractor shall furnish a Material Inspection and Receiving Report (DD Form 250 series) prepared in three copies, an original and two copies.

(b) The Contractor shall prepare the DD Form 250 in accordance with NASA FAR Supplement 1846.6. The Contractor shall enclose the copies of the DD Form 250 in the package or seal them

in a waterproof envelope, which shall be securely attached to the exterior of the package in the most protected location.

(c) When more than one package is involved in a shipment, the Contractor shall list on the DD Form 250, as additional information, the quantity of packages and the package numbers. The Contractor shall forward the DD Form 250 with the lowest numbered package of the shipment and print the words "CONTAINS DD FORM 250" on the package.

(End of clause)

E.9 SUBMISSION OF MATERIAL INSPECTION AND RECEIVING REPORTS

Material Inspection and Receiving Reports (DD Form 250) are only required for equipment and hardware deliveries and system turnovers to the Government. DD Form 250s will normally be signed by the Government within 30 days of Contractor submission.

(End of clause)

SECTION F - DELIVERIES OR PERFORMANCE

F.1 CLAUSES INCORPORATED BY REFERENCE -- SECTION F

Clause(s) at the beginning of this Section are incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in Clause 52.252-2, Clauses Incorporated by Reference, of this contract.

F.2 RESERVED

F.3 FAR 52.242-15 STOP-WORK ORDER. (AUG 1989) - ALTERNATE I (APR 1984)

F.4 FAR 52.247-34 F.O.B. DESTINATION. (NOV 1991)

F.5 PERIOD OF PERFORMANCE

The period of performance of this contract is 01 March 2011 through 29 February 2016 for the base period.

The periods of performance for the option years are as follows:

Contract Year 6: 01 March 2016 to 28 February 2017
Contract Year 7: 01 March 2017 to 28 February 2018
Contract Year 8: 01 March 2018 to 28 February 2019

(End of clause)

F.6 PLACE OF PERFORMANCE - SERVICES

The services to be performed under this contact shall be performed at the following location(s): NASA, John F. Kennedy Space Center (KSC), FL; Cape Canaveral Air Force Station (CCAFS), FL; Patrick Air Force Base (PAFB), FL; Contractor's off-site facilities; and other locations as specified by task order.

(End of clause)

F.7 OPTION TO EXTEND

In accordance with Section I Clause, FAR 52.217-9 *Option to Extend the Term of the Contract*, the Contracting Officer may exercise the option(s) identified in Section F Clause, *Period of Performance* by issuance of a unilateral contract modification.

In accordance with NFS 1817.207-70 (b)(1), the Government will perform an analysis to determine whether exercise of the option is in the Government's best interest. The analysis

required to support the option exercise determination includes consideration of other factors in addition to price.

In addition to the factors contained in FAR 17.207(e), the determination to exercise the option will consider, but is not limited to, the Contractor's performance in satisfying contract requirements; for example, receiving positive performance ratings, effective cost management and the Contractor's level of success in implementing and maintaining small business programs, which were evaluated as part of the source selection process and incorporated into the awarded contract.

(End of clause)

F.8 FLIGHT ITEM

Block 16 of each DD Form 250 prepared for flight hardware or related equipment to be shipped under this contract must be annotated as follows in 1/4-inch letters or larger by hand printing or rubber stamp:

"THIS IS A FLIGHT ITEM" OR "THIS IS MISSION ESSENTIAL GROUND SUPPORT EQUIPMENT," as applicable.

(End of clause)

SECTION G - CONTRACT ADMINISTRATION DATA

G.1 CLAUSES INCORPORATED BY REFERENCE -- SECTION G

Clause(s) at the beginning of this Section are incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in Clause 52.252-2, Clauses Incorporated by Reference, of this contract.

G.2 NFS 1852.223-71 FREQUENCY AUTHORIZATION. DEC 1988)

G.3 NFS 1852.227-11 PATENT RIGHTS - RETENTION BY THE CONTRACTOR (SHORT FORM).

G.4 NFS 1852.227-70 NEW TECHNOLOGY. (MAY 2002)

G.5 NFS 1852.227-86 COMMERCIAL COMPUTER SOFTWARE - LICENSING. (DEC 1987)

G.6 NFS 1852.242-71 TRAVEL OUTSIDE OF THE UNITED STATES. (DEC 1988)

G.7 NFS 1852.242-73 NASA CONTRACTOR FINANCIAL MANAGEMENT REPORTING.(NOV 2004)

G.8 NFS 1852.216-76 AWARD FEE FOR SERVICE CONTRACTS. (JUN 2000)

(a) The Contractor can earn award fee from a minimum of zero dollars to the maximum stated in NASA FAR Supplement Clause 1852.216-85, Estimated Cost and Award Fee in this contract.

(b) The Government shall evaluate the Contractor's performance every 12 months to determine the amount of award fee earned by the Contractor during the period. The Contractor may submit a self-evaluation of performance for each evaluation period under consideration. These self-evaluations will be considered by the Government in its evaluation. The Government's Fee Determination Official (FDO) will determine the award fee amounts based on the Contractor's performance in accordance with Attachment J-03, Award Fee Evaluation Plan. The plan may be revised unilaterally by the Government prior to the beginning of any rating period to redirect emphasis.

(c) The Government will advise the Contractor in writing of the evaluation results. The NSSC Accounts Payable Office will make payment based on issuance of a unilateral modification by the Contracting Officer.

(d) After eighty-five (85) percent of the potential award fee has been paid, the Contracting Officer may direct the withholding of further payment of award fee until a reserve is set aside in an amount that the Contracting Officer considers necessary to protect the Government's interest. This reserve shall not exceed fifteen (15) percent of the total potential award fee.

(e) The amount of award fee which can be awarded in each evaluation period is limited to the

amounts set forth at the section B Clause "Award Fee." Award fee which is not earned in an evaluation period cannot be reallocated to future evaluation periods.

(f)(1)Provisional award fee payments will be made under this contract pending the determination of the amount of fee earned for an evaluation period. If applicable, provisional award fee payments will be made to the Contractor on a monthly basis. The total amount of award fee available in an evaluation period that will be provisionally paid is the lesser of seventy-five (75) percent or the prior period's evaluation score.

(2) Provisional award fee payments will be superseded by the final award fee evaluation for that period. If provisional payments exceed the final evaluation score, the Contractor will either credit the next payment voucher for the amount of such overpayment or refund the difference to the Government, as directed by the Contracting Officer.

(3) If the Contracting Officer determines that the Contractor will not achieve a level of performance commensurate with the provisional rate, payment of provisional award fee will be discontinued or reduced in such amounts as the Contracting Officer deems appropriate. The Contracting Officer will notify the Contractor in writing if it is determined that such discontinuance or reduction is appropriate.

(4) Provisional award fee payments will be made prior to the first award fee determination by the Government.

(g) Award fee determinations are unilateral decisions made solely at the discretion of the Government.

(End of clause)

G.9 NFS 1852.216-87 SUBMISSION OF VOUCHERS FOR PAYMENT (Revised April 2014)

(a) Except for classified vouchers, the Contractor shall submit interim and final cost vouchers electronically using the DOD Wide Area Work Flow (WAWF) system. Invoices will be reviewed by DCAA based upon a risk-based sampling review process.

(1) To access the DOD WAWF system, the contractor shall be required to have a designated electronic business point of contact in the System for Award Management at https://www.acquisition.gov and be registered to use the DOD WAWF at https://wawf.eb.mil following the step-by-step procedures for self-registration available at this web site.

(2) NASA invoice payment information can be obtained at the NASA Shared Services Center (NSSC) Vendor Payment information web site at: https://www.nssc.nasa.gov/vendorpayment.

(3) The vendor shall use the “Cost Voucher” document type in WAWF when creating a voucher submission. The Activity address codes to be populated in WAWF for submission of invoices under this contract are:

a.	Paying Office Activity Address Code	803112 (NSSC)
b.	Admin Office Activity Address Code	804262 (KSC)
c.	“Issue By” Activity Address Code	804262 (KSC)
d.	DCAA DOD Activity Address Code	(depends on Contractor)

(4) The Contractor shall ensure that the payment request includes appropriate contract line item descriptions of the work performed and all relevant back-up documentation to support each payment request.

(5) The Contractor shall enter the e-mail address identified below in the "Send Additional Email Notifications" field of WAWF once a document is submitted in the system.

Contracting Officer: *Enter the email addresses of the current contracting officer's*

(b) Vouchers for payment of fee resulting from contract performance or provisional fee (if authorized under this contract) shall be prepared using an SF 1034 and submitted to the following address for payment:

Mailing address: NSSC - FMD Accounts Payable
Bldg. 1111, C Road
Stennis Space Center, MS 3952

E-mail address: NSSC-AccountsPayable@nasa.gov

Fax Number: 1-866-209-5415

(c) For both cost voucher and fee submissions a concurrent copy of the voucher information to include backup information shall be provided electronically to the NASA Contracting Officer. The Contracting Officer may designate other recipients as required.

(d) The NSSC is the designated billing office for cost and fee vouchers for purpose of the Prompt Payment clause of this contract.

(e) In the event that amounts are withheld from payment in accordance with provisions of this contract, a separate voucher for the amount withheld will be required before payment for that amount may be made.

(End of clause)

G.9a Payment and Submission of Invoices for Each CLIN and Each Task Order (information in addition to Clause G.9)

(a) Vouchers (invoices) shall be prepared in accordance with 31 USC § 3903(a), regarding the the Prompt Payment Act (5 CFR Part 1315) and submitted once a month. Accuracy of all invoices is extremely important. Noted invoice discrepancy(s) by the Government during any monthly processing periods, will be subject to rejection.

(b) Invoices shall be submitted not more than once a month. Each monthly invoice shall identify the invoiced amount for each CLIN as a separate line item and shall identify the award fee period being invoiced for each CLIN. One invoice number shall be submitted for each monthly invoice.

At a minimum, the following information shall be included with all invoices to support the invoiced cost by CLIN, and to support each separate task order as bulleted below (i.e., invoice support shall summarize each task order by cost element, with a grand total invoiced for the task order):

- Labor,
- Fringes,
- Consultant labor,
- Subcontract cost (by teammate),
- Equipment,
- Leases,
- Training,
- travel,
- materials/supplies,
- GSA vehichles,
- miscellaneous ODC,
- overhead, and
- G&A, and
- Total invoiced (per task order and per CLIN)

(c) Payment will be made to the contractor based on the receipt of a proper invoice.

(d) To effect Electronic Funds Transfer (EFT) payments, the contractor shall include the following information on each invoice to KSC and any future invoices if the requested information is changed:

- Contractor Name, address
- Nine digit Routing Transit Number of the contractor's financial agent;
- Contractor's account number and type of account (checking, savings, or lockbox);
- Name, title, telephone number and signature (manual or electronic, as appropriate) of official authorized to provide this information.

In accordance with FAR 32.9, failure to include this information may result in rejection of the invoice as improper.

(e) For invoices for which the contractor will offer a discount for prompt payment, the contractor shall clearly mark the outside of the envelope "DISCOUNT FOR PROMPT PAYMENT." The final invoice shall be marked "FINAL." All invoices shall include the contractor's Taxpayer Identification Number (TIN) and all other required payment information.

(End of Clause)

G.10 NFS 1852.227-72 DESIGNATION OF NEW TECHNOLOGY REPRESENTATIVE AND PATENT REPRESENTATIVE. (JUL 1997)

(a) For purposes of administration of the clause of this contract entitled "New Technology" or "Patent Rights - Retention by the Contractor (Short Form)," whichever is included, the following named representatives are hereby designated by the Contracting Officer to administer such clause:

New Technology Representative
Mail Code: NE-I4
NASA John F. Kennedy Space Center
Kennedy Space Center, FL 32899

Patent Representative
Mail Code: CC
NASA John F. Kennedy Space Center
Kennedy Space Center, FL 32899

(b) Reports of reportable items, and disclosure of subject inventions, interim reports, final reports, utilization reports, and other reports required by the clause, as well as any correspondence with respect to such matters, should be directed to the New Technology Representative unless transmitted in response to correspondence or request from the Patent Representative. Inquires or requests regarding disposition of rights, election of rights, or related matters should be directed to the Patent Representative. This clause shall be included in any subcontract hereunder requiring a "New Technology" clause or "Patent Rights - Retention by the Contractor (Short Form)" clause, unless otherwise authorized or directed by the Contracting Officer. The respective responsibilities and authorities of the above-named representatives are set forth in 1827.305-370 of the NASA FAR Supplement.

(End of clause)

G.11 NFS 1852.242-70 TECHNICAL DIRECTION. (SEP 1993)

(a) Performance of the work under this contract is subject to the written technical direction of the Contracting Officer’s Representative (COR), who shall be specifically appointed by the Contracting Officer in writing in accordance with NASA FAR Supplement 1842.270. "Technical direction" means a directive to the Contractor that approves approaches, solutions, designs, or refinements; fills in details or otherwise completes the general description of work or documentation items; shifts emphasis among work areas or tasks; or furnishes similar instruction to the Contractor. Technical direction includes requiring studies and pursuit of certain lines of inquiry regarding matters within the general tasks and requirements in Section C of this contract.

(b) The COR does not have the authority to, and shall not, issue any instruction purporting to be technical direction that -

(1) Constitutes an assignment of additional work outside the statement of work;

(2) Constitutes a change as defined in the changes clause;

(3) Constitutes a basis for any increase or decrease in the total estimated contract cost, the fixed fee (if any), or the time required for contract performance;

(4) Changes any of the expressed terms, conditions, or specifications of the contract; or

(5) Interferes with the Contractor's rights to perform the terms and conditions of the contract.

(c) All technical direction shall be issued in writing by the COR.

(d) The Contractor shall proceed promptly with the performance of technical direction duly issued by the COR in the manner prescribed by this clause and within the COR's authority. If, in the Contractor's opinion, any instruction or direction by the COR falls within any of the categories defined in paragraph (b) of this clause, the Contractor shall not proceed but shall notify the Contracting Officer in writing within 5 working days after receiving it and shall request the Contracting Officer to take action as described in this clause. Upon receiving this notification, the Contracting Officer shall either issue an appropriate contract modification within a reasonable time or advise the Contractor in writing within 30 days that the instruction or direction is -

(1) Rescinded in its entirety; or

(2) Within the requirements of the contract and does not constitute a change under the changes clause of the contract, and that the Contractor should proceed promptly with its performance.

(e) A failure of the Contractor and Contracting Officer to agree that the instruction or direction is both within the requirements of the contract and does not constitute a change under the changes clause, or a failure to agree upon the contract action to be taken with respect to the instruction or direction, shall be subject to the Disputes Clause of this contract.

(f) Any action(s) taken by the Contractor in response to any direction given by any person other than the Contracting Officer or the COR shall be at the Contractor's risk.

(End of clause)

G.12 NFS 1852.245-70 CONTRACTOR REQUESTS FOR GOVERNMENT-PROVIDED PROPERTY. (DEVIATION) (SEP 2007) -- ALTERNATE I (DEVIATION) (SEP 2007)

(a) The Contractor shall provide all property required for the performance of this contract. The Contractor shall not acquire or construct items of property to which the Government will have title under the provisions of this contract without the Contracting Officer's written authorization. Property which will be acquired as a deliverable end item as material or as a component for incorporation into a deliverable end item is exempt from this requirement.

(b)(1) In the event the Contractor is unable to provide the property necessary for performance, and the Contractor requests provision of property by the Government, the Contractor's request shall--

(i) Justify the need for the property;

(ii) Provide the reasons why contractor-owned property cannot be used;

(iii) Describe the property in sufficient detail to enable the Government to screen its inventories for available property or to otherwise acquire property, including applicable manufacturer, model, part, catalog, National Stock Number or other pertinent identifiers;

(iv) Combine requests for quantities of items with identical descriptions and estimated values when the estimated values do not exceed $100,000 per unit; and

(v) Include only a single unit when the acquisition or construction value equals or exceeds $100,000.

(2) Contracting Officer authorization is required for items the Contractor intends to manufacture as well as those it intends to purchase.

(3) The Contractor shall submit requests to the Contracting Officer no less than 30 days in advance of the date the Contractor would, should it receive authorization, acquire or begin fabrication of the item.

(c) The Contractor shall maintain copies of Contracting Officer authorizations, appropriately cross-referenced to the individual property record, within its property management system.

(d) Property furnished from Government excess sources is provided as-is, where-is. The Government makes no warranty regarding its applicability for performance of the contract or its ability to operate. Failure of property obtained from Government excess sources under this clause is insufficient reason for submission of requests for equitable adjustments discussed in the clause at 52.245-1, Government Property.

(e) In the event the Contracting Officer issues written authorization to provide property, the Contractor shall screen Government sources to determine the availability of property from Government inventory or excess property.

(1) The Contractor shall review NASA inventories and other authorized Federal excess sources for availability of items that meet the performance requirements of the requested property.

(i) If the Contractor determines that a suitable item is available from NASA supply inventory, it shall request the item using applicable Center procedures.

(ii) If the Contractor determines that an item within NASA or Federal excess is suitable, it shall contact the Center Industrial Property Officer to arrange for transfer of the item from the identified source to the Contractor.

(2) If the Contractor determines that the required property is not available from inventory or excess sources, the Contractor shall note the acquisition file with a list of sources reviewed and the findings regarding the lack of availability. If the required property is available, but unsuitable for use, the Contractor shall document the rationale for rejection of available property. The Contractor shall retain appropriate cross-referenced documentary evidence of the outcome of those screening efforts as part of its property records system.

(End of clause)

G.13 NFS 1852.245-71 INSTALLATION-ACCOUNTABLE GOVERNMENT PROPERTY (DEVIATION) (SEP 2007)

(a) The Government property described in paragraph (c) of this clause may be made available to the Contractor on a no-charge basis for use in performance of this contract. This property shall be utilized only within the physical confines of the NASA installation that provided the property unless authorized by the Contracting Officer under (b)(1)(iv). Under this clause, the Government retains accountability for, and title to, the property, and the Contractor shall comply with the following:

(1) NASA Procedural Requirements (NPR) 4100.1, NASA Materials Inventory Management Manual
(2) NASA Procedural Requirements (NPR) 4200.1, NASA Equipment Management Procedural Requirements
(3) NASA Procedural Requirement (NPR) 4300.1, NASA Personal Property Disposal Procedural Requirements
(4) NASA Procedural Requirements (NPR) 4200.2, Equipment Management Manual for Property Custodians
(5) NASA Procedural Requirements (NPR) 4310.1, Identification and Disposition of NASA Artifacts
(6) KSC NASA Procedural Requirements (KNPR) 4000.1, Supply and Equipment Management Manual
(7) KSC NASA Procedural Requirements (KNPR) 8830.1, Facilities and Real Property Management Procedural Requirements

Property not recorded in NASA property systems must be managed in accordance with the requirements of FAR 52.245-1.

The Contractor shall establish and adhere to a system of written procedures to assure continued, effective management control and compliance with these user responsibilities. Such procedures must include holding employees liable, when appropriate, for loss, damage, or destruction of Government property.

(b)(1) The official accountable recordkeeping, financial control, and reporting of the property subject to this clause shall be retained by the Government and accomplished within NASA management information systems prescribed by the installation Supply and Equipment Management Officer (SEMO) and Financial Management Officer. If this contract provides for the Contractor to acquire property, title to which will vest in the Government, the following additional procedures apply:

(i) The Contractor's purchase order shall require the vendor to deliver the property to the installation central receiving area.

(ii) The Contractor shall furnish a copy of each purchase order, prior to delivery by the vendor, to the installation central receiving area.

(iii) The Contractor shall establish a record of the property as required by FAR 52.245-1, Government Property, and furnish to the Industrial Property Officer a DD Form 1149, Requisition and Invoice/Shipping Document, (or installation equivalent) to transfer accountability to the Government within 5 working days after receipt of the property by the Contractor. The Contractor is accountable for all contractor-acquired property until the property is transferred to the Government's accountability.

(iv) Contractor use of Government property at an off-site location and off-site subcontractor use require advance approval of the Contracting Officer and notification of the Industrial Property Officer. The property shall be considered Government furnished and the Contractor shall assume accountability and financial reporting responsibility. The Contractor shall establish records and property control procedures and maintain the property in accordance with the requirements of FAR 52.245-1, Government Property, until its return to the installation. NASA Procedural Requirements related to property loans shall not apply to offsite use of property by contractors.

(2) After transfer of accountability to the Government, the Contractor shall continue to maintain such internal records as are necessary to execute the user responsibilities identified in paragraph (a) of this clause and document the acquisition, billing, and disposition of the property. These records and supporting documentation shall be made available, upon request, to the SEMO and any other authorized representatives of the Contracting Officer.

(c) The following property and services are provided: See Attachments J-05 (Government Furnished Facilities), J-06 (Government Furnished Pressure Vessels/Systems), J-07 (Government Furnished Services), and J-08 (Installation Accountable Government Property).

(1) If the Contractor acquires property, title to which vests in the Government pursuant to other provisions of this contract, this property also shall become accountable to the Government upon its entry into Government records.

(2) The Contractor shall not bring to the installation for use under this contract any property owned or leased by the Contractor, or other property that the Contractor is accountable for under any other Government contract, without the Contracting Officer's prior written approval.

(End of clause)

G.14 NFS 1852.245-73 FINANCIAL REPORTING OF NASA PROPERTY IN THE CUSTODY OF CONTRACTORS. (SEP 2007)

(a) The Contractor shall submit annually a NASA Form (NF) 1018, NASA Property in the Custody

of Contractors, in accordance with the provisions of 1845.505-14, the instructions on the form, subpart 1845.71, and any supplemental instructions for the current reporting period issued by NASA.

(b)(1) Subcontractor use of NF 1018 is not required by this clause; however, the Contractor shall include data on property in the possession of subcontractors in the annual NF 1018.

(2) The Contractor shall mail the original signed NF 1018 directly to the cognizant NASA Center Deputy Chief Financial Officer, Finance, unless the Contractor uses the NF 1018 Electronic Submission System (NESS) for report preparation and submission.

(3) One copy shall be submitted (through the Department of Defense (DOD) Property Administrator if contract administration has been delegated to DOD) to the following address:

NASA-KSC Industrial Property Officer
Mail Code: OP-OS-IP
Kennedy Space Center, FL 32899,

unless the Contractor uses the NF 1018 Electronic Submission System (NESS) for report preparation and submission.

(c)(1) The annual reporting period shall be from October 1 of each year through September 30 of the following year. The report shall be submitted in time to be received by October 15. The information contained in these reports is entered into the NASA accounting system to reflect current asset values for agency financial statement purposes. Therefore, it is essential that required reports be received no later than October 15. Some activity may be estimated for the month of September, if necessary, to ensure the NF 1018 is received when due. However, contractors' procedures must document the process for developing these estimates based on planned activity such as planned purchases or NASA Form 533 (NF 533 Contractor Financial Management Report) cost estimates. It should be supported and documented by historical experience or other corroborating evidence, and be retained in accordance with FAR Subpart 4.7, Contractor Records Retention. Contractors shall validate the reasonableness of the estimates and associated methodology by comparing them to the actual activity once that data is available, and adjust them accordingly. In addition, differences between the estimated cost and actual cost must be adjusted during the next reporting period. Contractors shall have formal policies and procedures, which address the validation of NF 1018 data, including data from subcontractors, and the identification and timely reporting of errors. The objective of this validation is to ensure that information reported is accurate and in compliance with the NASA FAR Supplement. If errors are discovered on NF 1018 after submission, the Contractor shall contact the cognizant NASA Center Industrial Property Officer (IPO) within 30 days after discovery of the error to discuss corrective action.

(2) The Contracting Officer may, in NASA's interest, withhold payment until a reserve not exceeding $25,000 or 5 percent of the amount of the contract, whichever is less, has been set aside, if the Contractor fails to submit annual NF 1018 reports in accordance with 1845.505-14 and any supplemental instructions for the current reporting period issued by NASA. Such reserve shall be withheld until the Contracting Officer has determined that NASA has received the required reports. The withholding of any amount or the subsequent payment thereof shall not be construed as a waiver of any Government right.

(d) A final report shall be submitted within 30 days after disposition of all property subject to

reporting when the contract performance period is complete in accordance with (b)(1) through (3) of this clause.

(End of clause)

G.15 NFS 1852.245-74 IDENTIFICATION AND MARKING OF GOVERNMENT EQUIPMENT. (DEVIATION) (SEP 2007)

(a) The Contractor shall identify all equipment to be delivered to the Government using NASA Technical Handbook (NASA-HDBK) 6003, "Application of Data Matrix Identification Symbols to Aerospace Parts Using Direct Part Marking Methods/Techniques", and NASA Standard (NASA-STD) 6002, "Applying Data Matrix Identification Symbols on Aerospace Parts." This includes deliverable equipment listed in the schedule and other equipment when NASA directs physical transfer to NASA or a third party. The Contractor shall identify property in both machine and human readable form unless the use of a machine readable-only format is approved by the NASA Industrial Property Officer.

(b) Property shall be marked in a location that will be human readable, without disassembly or movement of the property, when the items are placed in service unless such placement would have a deleterious effect on safety or on the item's operation.

(c) Concurrent with equipment delivery or transfer, the Contractor shall provide the following data in an electronic spreadsheet format:

(1) Item Description.

(2) Unique Identification Number (License Tag).

(3) Unit Price.

(4) An explanation of the data used to make the unique identification number.

(d) For items physically transferred under paragraph (a) the following additional data is required:

(1) Date originally placed in service.

(2) Item condition.

(3) Date last serviced.

(e) The data required in paragraphs (c) and (d) shall be delivered to the NASA center receiving activity listed here:

NASA John F. Kennedy Space Center
Transportation Officer, NASA
c/o ISC Receiving Warehouse
Building M6-744
Kennedy Space Center, FL 32899

(f) The Contractor shall include the substance of this clause, including this paragraph (f), in all subcontracts that require delivery of equipment.

(End of clause)

G.16 NFS 1852.245-75 PROPERTY MANAGEMENT CHANGES. (DEVIATION) (SEP 2007)

(a) The Contractor shall submit any changes to standards and practices used for management and control of Government property under this contract to the assigned property administrator and Industrial Property Officer (IPO), prior to making the change whenever the change -

(1) Employs a standard that allows increase in thresholds or changes the timing for reporting loss, damage, or destruction of property;

(2) Alters physical inventory timing or procedures;

(3) Alters recordkeeping practices;

(4) Alters practices for recording the transport or delivery of Government property; or

(5) Alters practices for disposition of Government property.

(b) The Contractor shall contact the IPO at:

NASA-KSC Industrial Property Officer
Mail Code: OP-OS-IP
Kennedy Space Center, FL 32899.

(End of clause)

G.17 NFS 1852.245-78 PHYSICAL INVENTORY OF CAPITAL PERSONAL PROPERTY. (DEVIATION) (SEP 2007)

(a) In addition to physical inventory requirements under the clause at FAR 52.245-1, Government Property, the Contractor shall conduct annual physical inventories for individual property items with an acquisition cost exceeding $100,000.

(1) The Contractor shall inventory -

(i) Items of property furnished by the Government;

(ii) Items acquired by the Contractor and titled to the Government under the clause at FAR 52.245-1;

(iii) Items constructed by the Contractor and not included in the deliverable, but titled to the Government under the clause at FAR 52.245-1; and

(iv) Complete but undelivered deliverables.

(2) The Contractor shall use the physical inventory results to validate the property record data, specifically location, condition and use status, and to prepare summary reports of

inventory as described in paragraph (c) of this clause.

(b) Unless specifically authorized in writing by the NASA Industrial Property Officer (IPO), the inventory shall be performed and posted by individuals other than those assigned custody of the items, responsibility for maintenance, or responsibility for posting to the property record. The Contractor may request a waiver from this separation of duties requirement from the NASA IPO, when all of the conditions in either (1) or (2) below are met.

(1) The Contractor utilizes an electronic system for property identification, such as a laser bar-code reader or radio frequency identification reader, and

(i) The programs or software preclude manual data entry of inventory identification data by the individual performing the inventory; and

(ii) The inventory and property management systems contain sufficient management controls to prevent tampering and assure proper posting of collected inventory data.

(2) The Contractor has limited quantities of property, limited personnel, or limited property systems; and,

(i) The Contractor provides written confirmation that the Government property exists in the recorded condition and location; and

(ii) The items continue to be used exclusively for performance of the contract or as otherwise authorized by the Contracting Officer.

(3) The Contractor shall submit the request to the cognizant property administrator and obtain approval from the IPO prior to implementation of the practice.

(c) The Contractor shall report the results of the physical inventory to the property administrator and the NASA Industrial Property Officer within 10 calendar days of completion of the physical inventory. The report shall -

(1) Provide a summary showing number and value of items inventoried; and

(2) Include additional supporting reports of -

(i) Loss, damage or destruction, in accordance with the clause at 52.245-1, Government Property;

(ii) Idle property available for reuse or disposition; and

(iii) A summary of adjustments made to location, condition, status, or user as a result of the physical inventory reconciliation.

(d) The Contractor shall retain all physical inventory records, including records of all transactions associated with inventory reconciliation. All records shall be subject to Government review and/or audit.

(End of clause)

G.18 NFS 1852.245-82 OCCUPANCY MANAGEMENT REQUIREMENTS. (DEVIATION) (SEP 2007)

(a) In addition to the requirements of the clause at FAR 52.245-1, Government Property, the Contractor shall comply with the following in performance of work in and around Government real property:

(1) NPD 8800.14, Policy for Real Property Management.

(2) NPR 8831.2, Facility Maintenance Management

(3) NPR 8800.15, Real Estate Management Program Implementation Manual

(b) The Contractor shall obtain the written approval of the Contracting Officer before installing or removing Contractor-owned property onto or into any Government real property or when movement of Contractor-owned property may damage or destroy Government-owned property. The Contractor shall restore damaged property to its original condition at the Contractor's expense.

(c) The Contractor shall not acquire, construct or install any fixed improvement or structural alterations in Government buildings or other real property without the advance, written approval of the Contracting Officer. Fixed improvement or structural alterations, as used herein, means any alteration or improvement in the nature of the building or other real property that, after completion, cannot be removed without substantial loss of value or damage to the premises. Title to such property shall vest in the Government.

(d) The Contractor shall report any real property or any portion thereof when it is no longer required for performance under the contract, as directed by the Contracting Officer.

(End of clause)

G.19 KSC 52.223-121 REPORTING OF INCIDENTS INVOLVING WORKPLACE VIOLENCE (JUL 2008)

The Contractor shall conduct training on and develop procedures for recognizing, managing and responding to incidents and threats of workplace violence as defined in NASA Policy Directive (NPD) 1600.3. Contractors shall also promptly report all incidents involving workplace violence to the Protective Services Office. If the NASA Workplace Violence Prevention and Response (WVPR) Team Chair and Co Chair determine it is appropriate for the committee to meet, the Contractor shall participate in the meeting. The Contractor is also responsible for reporting disposition of the incident reported to the NASA WVPR Team.

This requirement shall flow down to the subcontractors, however the subcontractors shall report up through the prime contractor.

(End of clause)

G.20 DESIGNATION OF CONTRACTING OFFICER'S TECHNICAL MANAGEMENT REPRESENTATIVES (TMRs)

The COR may elect to have one or more Technical Management Representatives (TMRs) for the purposes of contract surveillance and monitoring of specified work areas. The TMRs will be appointed in writing by the Contracting Officer. The TMR's authority will be limited to that specified in the Contracting Officer's Letter of Appointment. Contractor change notification requirements are identical to those reflected in Section G, NFS 1852.242-70 *Technical Direction*.

(End of clause)

G.21 ON-SITE CONTRACTOR REPRESENTATIVE

The Contractor shall appoint a representative at the work site with full authority to receive and execute, on behalf of the Contractor, such contract modifications, notices, policy directives, etc., as may be issued pursuant to the terms of this contract.

(End of clause)

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SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.1 CLAUSES INCORPORATED BY REFERENCE -- SECTION H

Clause(s) at the beginning of this Section are incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in Clause 52.252-2, Clauses Incorporated by Reference, of this contract.

H.2 NFS 1852.208-81 RESTRICTIONS ON PRINTING AND DUPLICATING. (NOV 2004)

H.3 NFS 1852.223-70 SAFETY AND HEALTH. (APR 2002)

H.4 NFS 1852.223-75 MAJOR BREACH OF SAFETY OR SECURITY. (FEB 2002)

H.5 NFS 1852.223-76 FEDERAL AUTOMOTIVE STATISTICAL TOOL REPORTING. (JUL 2003)

H.6 NFS 1852.225-70 EXPORT LICENSES. (FEB 2000)

(b) The Contractor shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of this contract, including instances where the work is to be performed on-site at NASA, John F. Kennedy Space Center, where the foreign person will have access to export-controlled technical data or software.

H.7 RESERVED

H.8 NFS 1852.235-73 FINAL SCIENTIFIC AND TECHNICAL REPORTS. (DEC 2006)

H.9 NFS 1852.244-70 GEOGRAPHIC PARTICIPATION IN THE AEROSPACE PROGRAM. (APR 1985)

H.10 NFS 1852.246-70 MISSION CRITICAL SPACE SYSTEM PERSONNEL RELIABILITY PROGRAM. (MAR 1997)

H.11 NFS 1852.247-71 PROTECTION OF THE FLORIDA MANATEE. (MAR 1989)

H.12 NFS 1852.209-71 LIMITATION OF FUTURE CONTRACTING. (DEC 1988)

(a) The Contracting Officer has determined that this acquisition may give rise to a potential organizational conflict of interest. Accordingly, the attention of prospective offerors is invited to FAR Subpart 9.5 - Organizational Conflicts of Interest.

(b) The nature of this conflict is: The ESC will be closely aligned with the Government to provide management support and independent assessment of work done by vehicle/spacecraft OEMs, component vendors, and KSC launch and ground operations support contractors, as well as

providing requirements that affect them. Further, potential OCI may exist with regard to other ongoing and future NASA contracts running concurrently with this contract, including, but not limited to, SMASS at KSC, and other engineering, and development and production contracts at KSC and other NASA installations. The ESC contractor will be required to submit and maintain an acceptable OCI mitigation plan.

(c) The restrictions upon future contracting are as follows:

(1) If the Contractor, under the terms of this contract, or through the performance of tasks pursuant to this contract, is required to develop specifications or statements of work that are to be incorporated into a solicitation, the Contractor shall be ineligible to perform the work described in that solicitation as a prime or first-tier subcontractor under an ensuing NASA contract. This restriction shall remain in effect for a reasonable time, as agreed to by the Contracting Officer and the Contractor, sufficient to avoid unfair competitive advantage or potential bias (this time shall in no case be less than the duration of the initial production contract).

(2) To the extent that the work under this contract requires access to proprietary, business confidential, or financial data of other companies, and as long as these data remain proprietary or confidential, the Contractor shall protect these data from unauthorized use and disclosure and agrees not to use them to compete with those other companies.

(End of clause)

H.13 ORGANIZATIONAL CONFLICT OF INTEREST AVOIDANCE PLAN

(a) In performance of this contract, the Contractor may be required to perform work that contains some level of potential or perceived organizational conflict of interest related to access to non-public information, biased ground rules or impaired objectivity. The occurrence of situations of this kind could possibly cause the Contractor's judgment to be influenced toward certain products or services in performing under this contract. In addition, the Contractor may be required to perform tasks which affect the nature of work to be performed by the Contractor under other Government contracts. In order to eliminate or adequately mitigate any conflict of interest which may arise from either of these situations, the prime Contractor shall:

(1) Provide the Contracting Officer immediate notice in any case where the Contractor learns that it or its subcontractors will either be:

i. Performing inspection, evaluation, or similar work concerning products and services which Contractor provides to NASA under other NASA contracts, or
ii. Developing requirements for the products or services which the Contractor may provide under another contract;

(2) Within 7 calendar days after providing such notice to the Government, submit to the Contracting Officer for approval a proposed plan of action for eliminating or adequately mitigating the conflict identified (and subsequently submit any modifications to such plan as may be requested by the Contracting Officer); and

(3) Implement the plan of action as approved by the Contracting Officer. The Contractor shall

not undertake the performance of work for which notice has been given until the prime Contractor's plan has been approved, unless the Contracting Officer authorized, in writing, the prime Contractor to proceed with the work pending approval. Where the term "Contractor" is used in this clause, it shall be deemed to mean the prime Contractor, and any subcontractor, except in the instance where the term "prime Contractor" is specifically used.

(b) To the extent that the work under this contract requires access to proprietary, business confidential, or financial data or other companies, and as long as these data remain proprietary or confidential, the Contractor shall protect these data from unauthorized use and disclosure and agrees not to use them to compete with other companies.

(c) Notwithstanding any other provision of this clause, if the Contractor develops complete specifications or statements of work under this contract for nondevelopmental items, and such specifications or statements of work are incorporated into a subsequent NASA solicitation, the Contractor shall be ineligible to furnish the items described in such solicitation. This restriction shall remain in effect for a reasonable time, as agreed to by the Contracting Officer and the prime Contractor (or determined by the Contracting Officer in the event the parties are unable to agree), sufficient to avoid unfair competitive advantage or potential bias. The Contractor shall not be eligible in any case to compete for the initial contract, including any options, for nondevelopmental items for which Contractor has prepared complete specifications or statements of work. NASA shall not unilaterally require the prime Contractor to prepare such specifications or statements or work under this contract.

(d) The Contractor shall include the substantive provisions of this clause in any subcontracts, appropriately modified to reflect a prime-subcontract relationship.

(End of clause)

H.14 NFS 1852.216-80 TASK ORDERING PROCEDURE. (OCT 1996) (Applicable to IDIQ services)

(a) Only the Contracting Officer may issue task orders to the Contractor, providing specific authorization or direction to perform work within the scope of the contract and as specified in the schedule. The Contractor may incur costs under this contract in performance of task orders and task order modifications issued in accordance with this clause. No other costs are authorized unless otherwise specified in the contract or expressly authorized by the Contracting Officer.

(b) Prior to issuing a task order, the Contracting Officer shall provide the Contractor with the following data:

(1) A functional description of the work identifying the objectives or results desired from the contemplated task order, including data deliverables and formats.

(2) Proposed performance standards to be used as criteria for determining whether the work requirements have been met.

(3) A request for a task plan from the Contractor to include the technical approach, period of performance, appropriate cost information, and any other information required to determine the reasonableness of the Contractor's proposal.

(c) Within **fifteen (15) working** days after receipt of the Contracting Officer's request, the Contractor shall submit a task plan conforming to the request.

(d) After review and any necessary discussions, the Contracting Officer may issue a task order to the Contractor containing, as a minimum, the following:

(1) Date of the order.

(2) Contract number and order number.

(3) Functional description of the work identifying the objectives or results desired from the task order, including data deliverables, formats, and special instructions or other information necessary for performance of the task.

(4) Performance standards, and where appropriate, quality assurance standards.

(5) Maximum dollar amount authorized (cost and fee or price). This includes allocation of award fee among award fee periods, if applicable.

(6) Any other resources (travel, materials, equipment, facilities, etc.) authorized.

(7) Delivery/performance schedule including start and end dates.

(8) If contract funding is by individual task order, accounting and appropriation data.

(e) The Contractor shall provide acknowledgment of receipt to the Contracting Officer within two (2) working days after receipt of the task order.

(f) If time constraints do not permit issuance of a fully defined task order in accordance with the procedures described in paragraphs (a) through (d), a task order which includes a ceiling price may be issued.

(g) The Contracting Officer may amend tasks in the same manner in which they were issued.

(h) In the event of a conflict between the requirements of the task order and the Contractor's approved task plan, the task order shall prevail.

(End of clause)

H.15 NFS 1852.228-76 CROSS-WAIVER OF LIABILITY FOR INTERNATIONAL SPACE STATION ACTIVITIES (DEVIATION)

(a) The Intergovernmental Agreement Among the Government of Canada, Governments of Member States of the European Space Agency, the Government of Japan, the Government of the Russian Federation, and the Government of the United States of America concerning Cooperation on the Civil International Space Station (IGA) for the International Space Station (ISS) contains a cross-waiver of liability provision to encourage participation in the exploration, exploitation, and use of outer space through the ISS. The Parties intend that this cross-waiver of liability be broadly construed to achieve this objective.

(b) As used in this clause, the term:

(1) “Agreement” refers to any NASA Space Act agreement that contains the cross-waiver of liability provision authorized by 14 CFR Part 1266.102.

(2) "Damage" means:

(i) Bodily injury to, or other impairment of health of, or death of, any person;

(ii) Damage to, loss of, or loss of use of any property;

(iii) Loss of revenue or profits; or

(iv) Other direct, indirect, or consequential damage.

(3) "Launch Vehicle" means an object, or any part thereof, intended for launch, launched from Earth, or returning to Earth which carries payloads or persons, or both.

(4) "Partner State" includes each Contracting Party for which the IGA has entered into force, pursuant to Article 25 of the IGA or pursuant to any successor agreement. A Partner State includes its Cooperating Agency. It also includes any entity specified in the Memorandum of Understanding (MOU) between NASA and the Government of Japan’s Cooperating Agency in the implementation of that MOU.

(5) “Party” means a party to a NASA Space Act agreement involving activities in connection with the ISS and a party that is neither the prime contractor under this contract nor a subcontractor at any tier.

(6) "Payload" means all property to be flown or used on or in a Launch Vehicle or the ISS.

(7) "Protected Space Operations" means all Launch or Transfer Vehicle activities, ISS activities, and Payload activities on Earth, in outer space, or in transit between Earth and outer space in implementation of the IGA, MOUs concluded pursuant to the IGA, implementing agreements, and contracts to perform work in support of NASA’s obligations under these Agreements. It includes, but is not limited to:

(i) Research, design, development, test, manufacture, assembly, integration, operation, or use of Launch or Transfer Vehicles, the ISS, Payloads, or instruments, as well as related support equipment and facilities and services; and

(ii) All activities related to ground support, test, training, simulation, or guidance and control equipment and related facilities or services. “Protected Space Operations” also includes all activities related to evolution of the ISS, as provided for in Article 14 of the IGA. “Protected Space Operations” excludes activities on Earth which are conducted on return from the ISS to develop further a Payload’s product or process for use other than for ISS-related activities in implementation of the IGA.

(8) "Related Entity" means:

(i) A contractor or subcontractor of a Party or a Partner State at any tier;

(ii) A user or customer of a Party or a Partner State at any tier; or

(iii) A contractor or subcontractor of a user or customer of a Party or a Partner State at any tier. The terms “contractor” and “subcontractor” include suppliers of any kind.

(9) “Transfer Vehicle” means any vehicle that operates in space and transfers Payloads or persons or both between two different space objects, between two different locations on the same space object, or between a space object and the surface of a celestial body. A “Transfer Vehicle” also includes a vehicle that departs from and returns to the same location on a space object.
(c)(1) The Contractor agrees to a cross-waiver of liability pursuant to which it waives all claims against any of the entities or persons listed in paragraphs (c)(1)(i) through (c)(1)(iv) of this clause based on Damage arising out of Protected Space Operations. This cross-waiver shall apply only if the person, entity, or property causing the Damage is involved in Protected Space Operations and the person, entity, or property damaged is damaged by virtue of its involvement in Protected Space Operations. The cross-waiver shall apply to any claims for Damage, whatever the legal basis for such claims, against:

(i) A Party as defined in (B)(5) above;

(ii) A Partner State other than the United States of America;

(iii) A Related Entity of any entity identified in paragraph (c)(1)(i) or (c)(1)(ii) of this clause; or

(iv) The employees of any of the entities identified in paragraphs (c)(1)(i) through (c)(1)(iii) of this clause.

(2) In addition, the contractor shall, by contract or otherwise, extend the cross-waiver of liability set forth in paragraph (c)(1) of this clause to its subcontractors at any tier by requiring them, by contract or otherwise, to:

(i) Waive all claims against the entities or persons identified in paragraphs (c)(1)(i) through (c)(1)(iv) of this clause; and

(ii) Require that their subcontractors waive all claims against the entities or persons identified in paragraphs (c)(1)(i) through (c)(1)(iv) of this clause.

(3) For avoidance of doubt, this cross-waiver of liability includes a cross-waiver of claims arising from the *Convention on International Liability for Damage Caused by Space Objects*, which entered into force on September 1, 1972, where the person, entity, or property causing the Damage is involved in Protected Space Operations and the person, entity, or property damaged is damaged by virtue of its involvement in Protected Space Operations.

(4) Notwithstanding the other provisions of this clause, this cross-waiver of liability shall not be applicable to:

(i) Claims between the Government and its own contractors or between its own contractors and subcontractors;

(ii) Claims made by a natural person, his/her estate, survivors or subrogees (except when a

subrogee is a Party to an Agreement or is otherwise bound by the terms of this cross-waiver) for bodily injury to, or other impairment of health of, or death of, such person;

(iii) Claims for Damage caused by willful misconduct;

(iv) Intellectual property claims;

(v) Claims for Damage resulting from a failure of the contractor to extend the cross-waiver of liability to its subcontractors and related entities, pursuant to paragraph (c)(2) of this clause; or

(vi) Claims by the Government arising out of or relating to the contractor's failure to perform its obligations under this contract.

(5) Nothing in this clause shall be construed to create the basis for a claim or suit where none would otherwise exist.

(6) This cross-waiver shall not be applicable when 49 U.S.C. Subtitle IX, Chapter 701 is applicable.

(End of clause)

H.16 NFS 1852.228-78 CROSS-WAIVER OF LIABILITY FOR SCIENCE OR SPACE EXPLORATION ACTIVITIES UNRELATED TO THE INTERNATIONAL SPACE STATION (DEVIATION)

(a) The purpose of this clause is to extend a cross-waiver of liability to NASA contracts for work done in support of Agreements between Parties involving Science or Space Exploration activities, unrelated to the International Space Station (ISS), but which involve a launch. This cross-waiver of liability shall be broadly construed to achieve the objective of furthering participation in space exploration, use, and investment.

(b) As used in this clause, the term:

(1) "Agreement" refers to any NASA Space Act agreement that contains the cross-waiver of liability provision authorized in 14 CFR 1266.104.

(2) "Damage" means:

(i) Bodily injury to, or other impairment of health of, or death of, any person;

(ii) Damage to, loss of, or loss of use of any property;

(iii) Loss of revenue or profits; or

(iv) Other direct, indirect, or consequential Damage;

(3) "Launch Vehicle" means an object, or any part thereof, intended for launch, launched from Earth, or returning to Earth which carries Payloads or persons, or both.

(4) "Party" means a party to a NASA Space Act agreement for Science or Space Exploration

activities, unrelated to the ISS, but which involve a launch and a party that is neither the prime contractor under this contract nor a subcontractor at any tier hereto.

(5) "Payload" means all property to be flown or used on or in a Launch Vehicle.

(6) "Protected Space Operations" means all Launch or Transfer Vehicle activities and Payload activities on Earth, in outer space, or in transit between Earth and outer space in implementation of an Agreement for Science or Space Exploration activities, unrelated to the ISS, but which involve a launch. Protected Space Operations begins at the signature of the Agreement and ends when all activities done in implementation of the agreement are completed. It includes, but is not limited to:

(i) Research, design, development, test, manufacture, assembly, integration, operation, or use of Launch or Transfer Vehicles, Payloads, or instruments, as well as related support equipment and facilities and services; and

(ii) All activities related to ground support, test, training, simulation, or guidance and control equipment, and related facilities or services.
Protected Space Operations excludes activities on Earth which are conducted on return from space to develop further a Payload's product or process other than for the activities within the scope of an Agreement.

(7) "Related entity" means:

(i) A contractor or subcontractor of a Party at any tier;

(ii) A user or customer of a party at any tier; or

(iii) A contractor or subcontractor of a user or customer of a Party at any tier. The terms "contractors" and "subcontractors" include suppliers of any kind.

(c) Cross-waiver of liability:

(1) The contractor agrees to a waiver of liability pursuant to which it waives all claims against any of the entities or persons listed in paragraphs (c)(1)(i) through (c)(1)(iv) of this clause based on Damage arising out of Protected Space Operations. This cross-waiver shall apply only if the person, entity, or property causing the Damage is involved in Protected Space Operations and the person, entity, or property damaged is damaged by virtue of its involvement in Protected Space Operations. The waiver shall apply to any claims for Damage, whatever the legal basis for such claims, against:

(i) A Party;

(ii) A Party to another NASA Agreement or contract that includes flight on the same Launch Vehicle;

(iii) A Related Entity of any of the entities identified in (c)(1)(i) or (c)(1)(ii) of this clause; or

(iv) The employees of any of the entities identified in (c)(1)(i) through (c)(1)(iii) of this clause.

(2) The contractor agrees to extend the cross-waiver of liability as set forth in paragraph (c)(1) of this clause to its own subcontractors at all tiers by requiring them, by contract or otherwise, to:

(i) Waive all claims against the entities or persons identified in paragraphs (c)(1)(i) through (c)(1)(iv) of this clause; and

(ii) Require that their Related Entities waive all claims against the entities or persons identified in paragraph (c)(1)(i) through (c)(1)(iv) of this clause.

(3) For avoidance of doubt, this cross-waiver includes a cross-waiver of claims arising from the *Convention on International Liability for Damage Caused by Space Objects*, which entered into force on September 1, 1972, where the person, entity, or property causing the Damage is involved in Protected Space Operations and the person, entity, or property damaged is damaged by virtue of its involvement in Protected Space Operations.

(4) Notwithstanding the other provisions of this clause, this cross-waiver of liability shall not be applicable to:

(i) Claims between the Government and its own contractors or between its own contractors and subcontractors;

(ii) Claims made by a natural person, his/her estate, survivors, or subrogees (except when a subrogee is a Party to an Agreement or is otherwise bound by the terms of this cross-waiver) for bodily injury to, or other impairment of health, or death of such person;

(iii) Claims for Damage caused by willful misconduct;

(iv) Intellectual property claims;

(v) Claims for damages resulting from failure of the contractor to extend the cross-waiver of liability to its subcontractors and related entities, pursuant to paragraph (c)(2) of this clause; or

(vi) Claims by the Government arising out of or relating to a contractor's failure to perform its obligations under this contract.

(5) Nothing in this clause shall be construed to create the basis for a claim or suit where none would otherwise exist.

(6) This cross-waiver shall not be applicable when 49 U.S.C. Subtitle IX, Chapter 701 is applicable.

(End of clause)

H.17 NFS 1852.235-71 KEY PERSONNEL AND FACILITIES. (MAR 1989)

(a) The personnel and/or facilities listed below (or specified in the contract Schedule) are considered essential to the work being performed under this contract. Before removing, replacing, or diverting any of the listed or specified personnel or facilities, the Contractor shall (1) notify the Contracting Officer reasonably in advance and (2) submit justification (including

proposed substitutions) in sufficient detail to permit evaluation of the impact on this contract.

(b) The Contractor shall make no diversion without the Contracting Officer's written consent; provided, that the Contracting Officer may ratify in writing the proposed change, and that ratification shall constitute the Contracting Officer's consent required by this clause.

(c) The list of personnel and/or facilities (shown below or as specified in the contract Schedule) may, with the consent of the contracting parties, be amended from time to time during the course of the contract to add or delete personnel and/or facilities.

1	**Mark Nappi**	– Program Manager	(mod 44)	
2	Charles Floyd	– Duputy Program Manager		
3	**Rhonda Barrett**	– Business Operations Manager	(mod 43)	
4	**Eizabeth Muldowney**	– Safety, Health, Environmental & Mission Assurance Manager	(mod 65)	
5	**Steve Childers**	– Workforce Planning and Management Manager	(mod 73)	|
6	Richard Jolley, PhD	– Engineering and Sciences Department Manager		
7	**Barbara Ivey White**	– Support Services Manager	(mod 1)	
8	**Michael Solomon**	– Technology Development Manager	(mod 56)	
9	**Jennifer Hall**	– Project / Task Management Manager	(mod 52)	
10	Jeffrey Ake	– Labs & Developmental Shops Manager		
11	**Dawn Reynolds**	– Human Resources	(mod 73)	|

(End of clause)

H.18 NFS 1852.242-72 OBSERVANCE OF LEGAL HOLIDAYS. (AUG 1992) -- ALTERNATE II (OCT 2000)

(a) The on-site Government personnel observe the following holidays:

New Year's Day
Labor Day
Martin Luther King, Jr.'s Birthday
Columbus Day
President's Day
Veterans Day
Memorial Day
Thanksgiving Day
Independence Day
Christmas Day
Any other day designated by Federal statute, Executive order, or the President's proclamation.

(b) When any holiday falls on a Saturday, the preceding Friday is observed. When any holiday falls on a Sunday, the following Monday is observed. Observance of such days by Government personnel shall not by itself be cause for an additional period of performance or entitlement of compensation except as set forth within the contract.

(c) When the NASA installation grants administrative leave to its Government employees (e.g., as a result of inclement weather, potentially hazardous conditions, or other special circumstances), Contractor personnel working on-site should also be dismissed. However, the Contractor shall provide sufficient on-site personnel to perform round-the-clock requirements of critical work already in process, unless otherwise instructed by the Contracting Officer or authorized

representative.

(d) Whenever administrative leave is granted to Contractor personnel pursuant to paragraph (c) of this clause, it shall be without loss to the Contractor. The cost of salaries and wages to the Contractor for the period of any such excused absence shall be a reimbursable item of cost under this contract for employees in accordance with the Contractor's established accounting policy.

(End of clause)

H.19 KSC 52.204-96 SECURITY CONTROLS FOR KSC AND CCAFS (APR 2010)

A. Identification of Employees

1. Badging

i. Kennedy Space Center (KSC) badging is mandatory for all Contractor personnel (e.g. administrative, technical, Architect and Engineering, supervisory, construction crafts, etc.) who require access into KSC or Cape Canaveral Air Force Station (CCAFS). Badging Requirements are in accordance with KNPR 1600.1, KSC Security Procedural Requirements, located at this public website: http://tdglobal.ksc.nasa.gov/ReferencedDocuments/. Badges must be obtained before personnel may access the work site and the contractor is responsible for submitting complete, accurate, and timely security investigation and badge request information. The government is not liable for any project delays resulting from the contractor's failure to provide required information or the contractor's inability to achieve favorable investigative results.

ii. Prior to proceeding with performance, the Contractor shall submit the following information to the Contracting Officer, who will certify it and pass the information on to the Badging office:

1. Contract number and location of work site(s);
2. Contract commencement and completion dates;
3. Status as prime or subcontractor; and,
4. Name of the Contractor designated security/badging official.
5. A KSC Form 28-1222V2, (KSC Visitor Badge Request) and/or KSC Form 28-889 (KSC Visitor Badge/Multiple) for all employees requiring access to KSC or CCAFS.

Note: This is the minimum paperwork required for issuance of identification badges.

iii. Security forms for employee investigations under this clause (Paragraph 2) shall be submitted by the contractor as soon as possible but in no case more than thirty days from initial badging.

iv. During performance of this contract, issued badges shall be worn by contractor employees and prominently displayed at all times while on KSC or CCAFS property, unless wearing the badge creates a safety hazard. Upon termination of an employee, or completion/termination of the contract, the Contractor shall immediately deliver such employee's identification and area permit badge(s) to the KSC Badging. NASA Identification badges are the property of NASA and the Government reserves the right to invalidate/confiscate such badges at any time.

v. Contractor security/badging officials shall ensure that badges are authorized for official purposes only and in accordance with the requirements of this clause and referenced directives. Abuse or misuse of badging authority may result in a loss of this authority. Employees that fail to comply with NASA regulations may be denied access to KSC.

2. Investigations

i. All persons requiring ongoing access to Federal facilities, to include KSC and CCAFS, are required to complete security forms and submit to a Government investigation. Exceptions may be made for short term visitors (15 days or less). Persons needing access for a period greater than 180 days will require an investigation as described in paragraph 2ii below. Contractors should note that the 180 day period is for an individual's aggregate access across all contracts. If you believe your employee will require ongoing access (current contract and follow on projects) to KSC and/or require unescorted access to facilities under the KSC Area Permit System, you should submit the employee for the investigation described in paragraph A2ii below at the time of initial badging.

ii. All persons requiring ongoing access to NASA installations are required to have a favorably completed National Agency Check with Written Inquiries (NACI). The following forms must be submitted to the Contracting Officer's Representative (COR), or the COR's designee:

1. FD Form 258, Fingerprint Card (Electronic submission at KSC Badging Office)
2. Standard Form 85, Questionnaire for Non-Sensitive Positions;
3. Optional Form 306, Declaration for Federal Position Employment; and,
4. Three (3) copies of KSC Form 20-87, Request for Investigation (Signed by COR or COR's designee)

B. Badging Restrictions/Categories

1. Access to Areas Requiring a KSC Area Permit. Access to certain areas on KSC and CCAFS requires the contractor to have a KSC Area Permit and contractors may be granted "escorted" or "unescorted" access to these areas in accordance with KNPR 1600.1. Unescorted access requires a favorable determination in accordance with the investigative requirements detailed in paragraph A2ii above as well as the completion of mandated safety training.

i. The NASA Protective Services Office, or its designee, PSSO, will determine whether the person is eligible for unescorted access within 14 business days after the receipt of the properly completed forms.

ii. One or more on-site training classes will be required for admittance to the controlled access areas. The total training will not exceed four hours. Contractors may schedule any required training for their employees by contacting the COR or designee. The contractor shall maintain a record of employees receiving the training.

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(End of clause)

H.20 KSC 52.236-130 FACILITY PROJECT REQUIREMENTS (JUN 2008)

The Contractor shall not award or otherwise proceed with implementation of any facility project without a NASA approved Facility Project Brief Project Document (NASA Form 1509). The Contractor shall prepare or otherwise support the preparation of NASA Form 1509's in accordance with the current edition of NPR 8820.2, Facility Project Implementation Handbook, and the current version of the KSC procedure for Facility Project Approval and Implementation. For purposes of this requirement a Facility Project is defined as any new construction, repair, and /or modification affecting Government real property located on KSC regardless of the source of funding, or located elsewhere and funded by KSC, and costing more than $100,000. Planning and design activities leading to the implementation of the actual construction, repair or modification work normally can be accomplished prior to 1509 approval. When in doubt, guidance as to whether or not a particular activity is a Facility Project, is implementation versus planning and design, and /or the applicability of this requirement in relation to specific projects should be obtained from the KSC Spaceport Services Management Integration Office.

(End of clause)

H.21 KSC 52.242-90 CONTROLS APPLICABLE TO CONTRACTOR'S ACTIVITIES (SEPT 2012)

The Contractor shall comply with the publications below, and subsequent revision thereof, that the Contracting Officer has indicated as being incorporated in this contract by reference. These publications prescribe regulatory and procedural criteria which are applicable to this contract. The contractor shall promptly take corrective action upon notice of noncompliance from the Contracting Officer or his/her authorized representative(s) with any provision of the publications listed below.

The following compliance documents may be found at:
http://tdglobal.ksc.nasa.gov/ReferencedDocuments/

Publication	Title
KNPR 8715.2	Comprehensive Emergency Management Plan
KNPR 1600.1	KSC Security Procedural Requirements
KNPR 8500.1	KSC Environmental Requirements
KNPR 8715.3-1	KSC Safety Procedural Requirements Volume 1, Safety Procedural Requirements for Civil Servants/NASA Contractors

Check if Applicable	Publication	Title
X	KNPD 1810.1	KSC Occupational Medicine Program
X	KNPR 1860.1	KSC Ionizing Radiation Protection Program
X	KNPR 1860.2	KSC Nonionizing Radiation Protection Program
X	KNPR 1820.3	KSC Hearing Loss Prevention Program
X	KNPR 1820.4	KSC Respiratory Protection Program
X	KNPR 1840.19	KSC Industrial Hygiene Programs
X	45SWI40-201	45th Space Wing Instruction 40-201 Radiation Protection Program

Check if Applicable	Publication	Title
X	KNPD 1800.2	KSC Hazard Communication Program
X	KNPR 1870.1	KSC Sanitation Program
X	KNPR 2570.1	KSC Radio Frequency Spectrum Management Procedural Requirements
X	KNPR 4000.1	Supply and Equipment System Manual
X	KNPR 6000.1	Transportation Support System
X	KNPR 8715.7	KSC Construction Contractor Safety and Health Practices Procedural Requirements
X	KNPR 8830.1	Facilities and Real Property Management Procedural Requirements

(End of clause)

H.22 KSC 52.242-93 CONTRACTOR WORKFORCE REPORT – Alternate 1 (JUL 2011)

The Contractor shall submit, on a quarterly basis, a manpower report delineating information about its workforce. The report shall include: the contract number, the Contractor's total on-site workforce, total on-site union represented employees by bargaining unit, total on-site non-union represented employees, and total off-site workforce performing on the contract. The Contractor shall provide this information no later than 10 days after the close of each reporting period which end March 31st, June 30th, September 30th, and December 31st. The report shall be submitted to the Contracting Officer with copies to Contracting Officer's Representative (Code NE-I2) Workforce Planning and Analysis Office, (Code BA-D) and Industrial Labor Relations Office (Code OP).

The Contractor is required to maintain information on specific Points of Contact (POC) for the contracted effort in a NASA managed database. The database contains POC information for specific Contractor functions to include: Local Contractor Manager and Deputy (senior on-site contract management POCs for top level NASA KSC contact), Contracting Manager (this is the interface on contract matters with the NASA Contracting Officer), HR Manager, Security Manager, Emergency Planning Manager (or identification/contact information for the Contractor manager performing this role), and the person responsible for input of this Contractor information into the database. Within three weeks of contract award the Contractor shall provide the name of the person who will enter the POC information into the NASA database to the Contracting Officer and to NASA Procurement Policy and Review Office, OP-AM, 867-7217. This person must be able to access (or be scheduled to gain access to) KSC systems. Access to the database and instruction will be provided to the Contractor by OP-AM. Upon commencement of the contract the Contractor will be responsible for keeping the POC information pertaining to the specific contract accurate and up to date. Changes to the person responsible for input of this Contractor POC information must be immediately brought to the attention of OP-AM.

(End of Clause)

H.23 KSC 52.245-90 MANAGEMENT OF NASA-OWNED/CONTRACTOR-HELD RECORDS (FEB 2012)

a) NASA-owned/Contractor-held records shall be maintained by the Contractor in accordance with the instructions set forth in NPD 1440.6, NASA Records Management; and NPR 1441.1, NASA Records Retention Schedules). The Contractor shall obtain prior approval from the Contracting Officer to destroy or remove records subject to this clause. The Contracting Officer will provide direction to the Contractor on when and what records to move or destroy.

b) NASA-owned/Contractor-held records shall consist of documentation of Contractor activities and functions necessary for the performance of this contract. These activities include the following: documentation of those day-to-day operating procedures that are essential to carrying out the PWS; organizational structure, policies, decisions, operation and activities necessary to perform or continue the work under this contract. Records that do not fall under the purview of this clause are those Contractor records that relate exclusively to the Contractor's internal business and that are of a general nature not specifically related to the performance of work under this contract, general policies and procedures. The Contractor shall seek the Contracting Officer's determination as to which records are subject to this clause.

c) The Contractor shall ensure that NASA-owned/Contractor-held records are segregated from company owned records and from non-record materials. This clause operates independently from and is not intended to affect, or be affected by, the provisions contained in FAR 4.7, Contractor Records Retention, and the clauses referenced therein.

d) After obtaining direction and approval from the Contracting Officer, the Contractor shall coordinate with the KSC Records Manager on matters requiring advice, such as marking and segregating such records, or technical assistance in all areas of management pertaining such records.

(e) When the contractor generates NASA-owned/Contractor-held records, the contractor shall prepare and submit KSC Form 16-473V2, KSC Annual Summary of Record Holdings, to the KSC Records Manager on an annual basis.

(End of clause)

H.24 KSC 1852.223-74 DRUG AND ALCOHOL FREE WORKPLACE (MAR 1996) (DEVIATION)

(a) Definitions. As used in this clause the terms "employee," "controlled substance," "employee in a sensitive position," and use, in violation of applicable law or Federal regulation, of alcohol are as defined in 48 CFR 1823.570-2.

(b)(1) The Contractor shall institute and maintain a program for achieving a drug-and alcohol-free workforce. As a minimum, the program shall provide for preemployment, reasonable suspicion, random, post-accident, and periodic recurring (follow-up) testing of contractor employees in sensitive positions for use, in violation of applicable law or Federal regulation, of alcohol or a controlled substance. The Contractor may establish its testing or rehabilitation program in cooperation with other contractors or organizations.

(2) In determining which positions to designate as "sensitive," the Contractor will use the NASA Procedural Requirements (NPR) 3792.1, Appendices A and B on "Testing Designated Positions" (TDPs) for federal employees, as a guide for the criteria and in designating "sensitive" positions for contractor employees.

(3) This clause neither prohibits nor requires the Contractor to test employees in a foreign country. If the Contractor chooses to conduct such testing, this clause does not authorize the Contractor to violate foreign law in conducting such testing.

(4) The Contractors program shall test for the use of phencyclidine (PCP), amphetamines, opiates, marijuana, cocaine, and alcohol. The Contractors program may test for the use of other controlled substances. For example, the Contractor may adopt and implement a more expansive drug- and alcohol-free workplace policy and testing program permitted under federal or state law (e.g., Florida Statutes §§ 440.101 et seq.) or other authority.

(5) The Contractor shall employ post-accident testing for all employees in sensitive positions performing work on a NASA facility for phencyclidine (PCP), amphetamines, opiates, marijuana, cocaine, and alcohol. Post-accident testing shall be conducted when the Contractor determines the employees actions are reasonably suspected of having caused or contributed to an accident resulting in death or personal injury requiring immediate hospitalization or damage to Government or private property estimated to exceed $10,000.

(6) The Contractor's program shall conform to the "Mandatory Guidelines for Federal Workplace Drug Testing Programs" published by the Department of Health and Human Services (59 FR 29908, June 9, 1994) and the procedures in 49 CFR part 40, "Procedures for Transportation Workplace Drug Testing Programs," in which references to "DOT" shall be read as "NASA", and the split sample method of collection shall be used.

(c) (1) The Contractor's program shall provide, where appropriate, for the suspension, disqualification, or dismissal of any employee in a sensitive position in any instance where a test conducted and confirmed under the Contractor's program indicates that such individual has used, in violation of applicable law or Federal regulation, alcohol or a controlled substance.

(2) The Contractor's program shall further prohibit any such individual from working in a sensitive position on a NASA contract, unless such individual has completed a program of rehabilitation described in paragraph (d) of this clause.

(3) The Contractor's program shall further prohibit any such individual from working in any sensitive position on a NASA contract if the individual is determined under the Contractor's program to have used, in violation of applicable law or Federal regulation, alcohol or a controlled substance and the individual meets any of the following criteria:

(i) The individual had undertaken or completed a rehabilitation program described in paragraph (d) of this clause prior to such use;

(ii) Following such determination, the individual refuses to undertake such a rehabilitation program;

(iii) Following such determination, the individual fails to complete such a rehabilitation program; or

(iv) The individual used a controlled substance or alcohol while on duty.

(d) The Contractor shall institute and maintain an appropriate rehabilitation program which shall, as a minimum, provide for the identification and opportunity for treatment of employees whose duties include responsibility for safety-sensitive, security, or National security functions who are in need of assistance in resolving problems with the use of alcohol or controlled substances.

(e) The requirements of this clause shall take precedence over any state or local Government laws, rules, regulations, ordinances, standards, or orders that are inconsistent with the requirements of this clause.

(f) For any collective bargaining agreement, the Contractor will negotiate the terms of its program with employee representatives, as appropriate, under labor relations laws or negotiated agreements. Such negotiation, however, cannot change the requirements of this clause. Employees covered under collective bargaining agreements will not be subject to the requirements of this clause until those agreements have been modified, as necessary; provided, however, that if one year after commencement of negotiation the parties have failed to reach agreement, an impasse will be determined to have been reached and the Contractor will unilaterally implement the requirements of this clause.

(g) The Contractor shall insert a clause containing all the terms of this clause, including this paragraph (g), in all subcontracts in which work is performed by an employee in a sensitive position, except subcontracts for commercial items (see FAR Parts 2 and 12).

(End of clause)

H.25 REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFEROR

The completed provision 52.204-8, Annual Representations and Certifications, including any amended representation(s) made at paragraph (b) of the provision; and other representations, certifications and other statements contained in Section K completed and submitted as part of the offer dated [TBD] are hereby incorporated by reference in this resulting contract.

(End of clause)

H.26 SMALL DISADVANTAGED BUSINESS PARTICIPATION--CONTRACT TARGETS

[redacted]

[redacted]

H.27 AUTHORIZED CHANGES

Only NASA/KSC Contracting Officers are authorized to modify the contract and perform all actions consistent with FAR 1.602. Performance of the work under this contract is subject to the written technical direction of the Contracting Officer's Representative (COR) in accordance with Section G.11 Clause, NFS 1852.242-70 Technical Direction.

(End of clause)

H.28 RESERVED

H.29 EQUITABLE ADJUSTMENT THRESHOLD

For contract changes under the authority of FAR 52.243-2 *Changes-Cost Reimbursement,* FAR 52.245-1 *Government Property*, or any other contract change authority, no equitable adjustment to estimated contract cost or fee shall be made for any change estimated to have a cost impact of $250,000 or less (exclusive of fee). However, if the net aggregate of all individual changes estimated to have a cost impact of $250,000 or less (exclusive of fee) reaches $1M within any contract year, then, for the remainder of the contract year, the foregoing limitation on equitable adjustments shall not apply to any changes issued when the $1M net aggregate amount is reached. Individual changes shall not be combined to meet the $250,000 threshold.

This clause is not applicable to IDIQ Content.

(End of clause)

H.30 WORK FOR OTHERS (Effective from contract award through September 30, 2012)

(a) Background and Purpose – The Contractor is authorized to perform Work for Others related to services conducted under this contract at KSC that would utilize the unique capabilities within this contract. Examples of unique capabilities at KSC include, but are not limited to any one or more of the following:

Contractor and Government property, individually or in combination, provide a capability not available in the commercial market place;
Expertise of resident personnel (contractor, civil servant, or a combination of both);
Ability to meet demanding schedule requirements in a superior manner;
Compatibility with operating systems/networks;
Proximity to on-going, or future efforts/projects;
A combination of capabilities, when compounded, results in a unique capability;
Where the effort is part of, or in support of the Other's proximate activities and is sought for the unique advantages of such proximity, such as timely responsiveness and ability for immediate and regular physical interface;
Where the effort is part of a group of services and/or support provided on KSC from multiple sources that together form the unique basis for conducting activities on KSC; and where the principle purpose for dealing with the contractor is the contractor's expertise (including people, processes and/or property) and the use and involvement of Government property is de minimus.

The primary purpose of this authority is to encourage and facilitate providing commercial and other Government entities access to the unique capabilities of this contract. Work for Others is defined as work performed for and paid by Others via a separate agreement between this Contractor and the Others. Others include: other NASA Centers, Federal, and state agencies, quasi-government and non-government entities, and commercial sources.

Other pertinent definitions:

Contract work – Work directed by the Contracting Officer under this contract via baseline requirements, task orders, or required by the explicit terms and conditions of the contract. Costs are chargeable and reimbursable under the contract.

Government Facilities – For purposes of this provision, facilities include real property (land, ground improvements, buildings and other structures), plant equipment (personal property of a capital nature, such as, machine tools, equipment and test equipment, furniture, vehicles, and accessory and auxiliary items for use in manufacturing or performing services, or for any administrative or general plant purpose), special tooling and special test equipment owned by the Government. Facilities do not include materials.

Government Material – Property provided or paid for by the Government in support of this contract that may be incorporated into or attached to an end item or consumed or expended during manufacture, testing or providing services.

(b) Agreements & Approvals – The Contractor shall obtain approval of the Contracting Officer for Work for Others before committing to perform the work. The Contractor shall informally partner with the Government to identify and discuss potential work for others as far in

advance of seeking final approval as is practical. The Contractor shall obtain final approval for each instance of work for others by submitting a written request to the Contracting Officer including a draft agreement between this Contractor and the others which, at a minimum, shall contain the following information, terms, and conditions:

(1) Name and address of the customer.

(2) Description of the work to be performed.

(3) Identification of Contractor personnel and the Government-furnished property required for accomplishing the work.

(4) Schedule for accomplishment of the work and impact, if any, on other ongoing activities.

(5) Terms and conditions containing the following clauses of this contract:

H.30 "Work for Others," subparagraphs (d) Priority of Use, (e) Liability and Risk of Loss, (f) Intellectual Property, Patent & Invention Rights, (g) News Releases & Publications, (h) Security & Export Control, (i) Safety & Health, (j) Independence of Contracts; and other clauses as may be required by the Contracting Officer.

Additionally, should the draft agreement include use of Government facilities, the draft agreement shall be accompanied by a cover letter containing a request for use of the Government facilities involved, an explanation of the unique nature of the Government facilities and/or this Contractor's expertise (or combinations thereof) that is not available from commercial sources and justify acceptance of the work.

(6) In order to negotiate agreements with third parties that will require direct labor support by Government personnel, the Contractor is required to have a Reimbursable Space Act Agreement (RSAA) with NASA KSC in place that addresses the Government's level of commitment, terms and conditions associated with provision of direct labor and reimbursement of costs, and other requirements. This can be in the form of a single, overarching agreement that will apply any time direct labor support by Government personnel is included in a third party agreement during the performance period of the ESC, or separately as specific Work for Others projects are negotiated. The Contractor should contact the Contracting Officer or Contracting Officer's Representative (COR) regarding establishment of an RSAA.

(c) Financial Obligations:

(1) General

(i) The Contractor shall provide consideration to NASA KSC in connection with Government-provided property utilized for Work for Others. Pursuant to the direction of the Contracting Officer, consideration may be in the form of cash payment from the Contractor to NASA KSC or a credit to the Government under the ESC contract.

(ii) The Contractor shall establish unique Cost Charge Numbers, or other means, to ensure that the costs of goods and services provided under Work for Others will not be charged to ESC.

(iii) In order to facilitate pricing of Work for Others proposals and agreements, the

specific cost components, amounts and fees to be reimbursed or credited to NASA KSC, and the points of contact and authority will be established and updated annually by the Government in a written procedure. Generally, reimbursable and creditable costs will include, but may not be limited to the following categories:

(A) Rent or other appropriate consideration for use of Government property in accordance with FAR 45.301(f) and the Use and Charges clause of this contract;

(B) Actual cost of Government personnel directly supporting a project (including payroll additives, fringe benefits and G&A);

(C) Actual cost of Government-provided material, utilities, support services and appropriate overheads.

(2) Reimbursement of Government Direct Labor Support

(i) For those projects where Government personnel will provide direct labor support, the Contractor will be required to forward advance payments to NASA based upon the estimated number of hours of direct Government support needed. Payment shall be made to NASA KSC prior to the initiation of each project utilizing Government personnel.

(ii) Payment shall be made in the form of a check payable to "National Aeronautics and Space Administration" and sent to:

NASA Shared Services Center
Financial Management Division (FMD)
Accounts Receivable
ATTN: For the Accounts of Kennedy Space Center
Building 1111, C Road
Stennis Space Center, MS 39529-6000

(iii) NASA KSC's activities under or pursuant to this provision are subject to the availability of appropriated funds, and no provision herein shall be interpreted to require obligations or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341.

(iv) NASA KSC will send a final billing to the Contractor for the services rendered by Government personnel as soon as possible after the completion of each project. Any overpayment to NASA following completion of a project will be promptly reimbursed to the Contractor.

(d) Priority of Use – It will be the Contractor's overall responsibility to schedule and manage use of assigned Government-Furnished Property to accommodate contract work and Work for Others in a manner to assure the timely, within cost, delivery of quality products and services for all. Since Work for Others projects are subject to Government approval and each request for approval will address scheduling issues, scheduling and priority of use conflicts should be rare. However, in the event circumstances should arise in which the Government requires use of the property, the Contracting Officer will direct that the Government work shall take precedence and the Contractor shall immediately proceed with the Government work. NASA will make every reasonable effort to ensure that ongoing and planned Work for Others

is not impacted and the exercise of the authority herein stated to require displacement of Work for Others in order to accomplish Government work will be exercised only to the extent necessary to protect the interests of the Government.

(e) Liability and Risk of Loss:

(1) General:

(i) The Contractor and Others waive and agree not to make any claims against the U.S. Government or U.S. Government contractors or subcontractors, for damage arising from or related to activities under this provision, whether such damage is caused by negligence or otherwise, except in the case of willful misconduct.

(ii) In addition, the Contractor and Others agree to indemnify and hold the U.S. Government or its contractors or subcontractors harmless from any claim, judgment, or cost arising from the injury to or death of any person, or for damage to or loss of any property, including U.S. Government property, as a result of activities under this provision, whether such damage is caused by negligence or otherwise, except in the case of willful misconduct.

(iii) In the event that Other(s) will need to directly participate in Work for Others activities at KSC, the Other(s) will be required to have the same insurance coverage as the Contractor under contract clause, “Minimum Insurance Coverage” (NFS 1852.228-75) located in Section I, unless Other(s) is statutorily authorized to self-insure.

(2) Insurance for Damage to NASA Property:

(i) For purposes of this article, the following definitions shall be applicable:

(A) “Liability” shall include payments made pursuant to United States’ treaty, any judgment by a court of competent jurisdiction, administrative and litigation costs, and settlement payments.

(B) “Damage” shall mean bodily injury to, or other impairment of health of, or death of any person; damage to, loss of, or loss of use of any property; soil, sediment, surface water, ground water, or other environmental contamination or damage; loss of revenue or profits; other direct damages; or any indirect, or consequential damage arising there from.

(ii) Damage to Government Property:

(A) Where required by NASA, within a reasonable time before Other(s) begin to have access to or use of U.S. Government property or services, Other(s) shall obtain or arrange to obtain, at no cost to NASA, insurance to cover the cost of replacing, repairing, or the fair market value of, as reasonably determined by the U.S. Government, any U.S. Government property (real or personal), which property is damaged as a result of any performance of this agreement, including performance by the Government’s contractors or subcontractors. Upon obtaining the insurance required under this paragraph, or upon obtaining any modification or amendment thereof, Other(s) shall personally deliver, or send by registered or certified mail, postage prepaid, two copies of such insurance policy (referencing the ESC contract number), or such

modification or amendment, to NASA at the following address, or at such address as NASA may, from time to time, designate in writing:

National Aeronautics and Space Administration
Office of the Chief Counsel
Mail Code: CC
Kennedy Space Center, FL 32899

(B) The insurance required under this subparagraph shall provide coverage in an amount acceptable to NASA. All terms and conditions in the policy shall be acceptable to NASA, and shall require 30 days notice to NASA of any cancellation or change affecting coverage. The policy shall name the United States as an insured and shall cover all risks of loss except that it may exclude damage caused by the Government's willful misconduct. The insurance policy shall provide that the insurer waives its right as a subrogee against the Government's contractors, subcontractors, or related entities for damage.

(C) In the event Other(s) is unable to obtain insurance coverage required by subparagraph b(1) above, the parties agree to consider, subject to review, approval and agreement by NASA, alternative methods of protecting U.S. Government property (e.g., by an agreement to indemnify the U.S. Government for such damages).

(D) An insurance policy whose terms and conditions are reviewed and approved by NASA, or an agreement on an alternative method of protection, is a condition precedent to Other(s)' access to or use of U.S. Government property under this agreement.

(f) Intellectual Property, Patent, and Invention Rights: The following intellectual property provisions apply to the activities of Government personnel directly supporting the Contractor's Work for Others pursuant to this provision.

(1) General:
Data exchanged between NASA, the Contractor and/or other party(s) in support of Work for Others will be exchanged without restriction as to its disclosure, use or duplication except as otherwise marked or as otherwise provided in this provision. No preexisting proprietary data will be provided by NASA under this agreement unless specifically authorized, in writing, by the owner of the proprietary data.

(2) Data First Produced by NASA:
As to data first produced by NASA in carrying out NASA's responsibilities in support of Work for Others and which data would embody trade secrets or would comprise commercial or financial information that is privileged or confidential if it had been obtained from the Contractor or other party(s), such data will, to the extent permitted by law, be appropriately marked with a notice or legend and maintained in confidence for a period of time to be agreed upon after development of the information, with the express understanding that, during the aforesaid period, such data may be disclosed and used by NASA under suitable protective conditions, for the express purpose of carrying out NASA's responsibilities in support of Work for Others. Upon completion of these activities, such data will be disposed of as requested by the Contractor and/or other party(s).

(3) Data First Produced by Contractor and/or other party(s):
In the event it is necessary for the Contractor and/or the other party(s) to furnish NASA with data that either existed prior to, was produced outside of, or is first produced by the Contractor and/or other party(s) in carrying out the Contractor's and/or other party(s) responsibilities in support of Work for Others, and such data embody trade secrets or comprise commercial or financial information that is privileged or confidential and such data is so identified with a suitable notice or legend, the data will be maintained in confidence and disclosed and used by NASA and its Contractors, under suitable protective conditions, only for the purpose of carrying out NASA's responsibilities in support of Work for Others. Upon completion of these activities, such data will be disposed of as requested by the owner of the data.

(4) Data Disclosing an Invention:
In the event data exchanged between NASA and the Contractor and/or other party(s) discloses an invention for which patent protection is considered and the furnishing party specifically so identifies such data, the receiving party agrees to withhold such data from public disclosure for a reasonable time (presumed to be 1 year unless otherwise mutually agreed to) in order for patent protection to be obtained.

(5) Copyright:
In the event data is exchanged with a notice indicating that the data is protected under copyright, such data will be presumed to be published and the following paid-up license shall apply:

(i) If it is indicated on the data that the data existed prior to, or was produced outside of this provision, the receiving party and others acting on its behalf, may reproduce, distribute, and prepare derivative works for the purpose of carrying out the receiving party's responsibilities under this provision.
(ii) If the furnished data does not contain the indication of (1) above, it will be assumed that the data was first produced in support of Work for Others, and the receiving party and others acting on its behalf, may reproduce, distribute, and prepare derivative works for any of its own purposes whatsoever.

(6) Disclaimer of Liability:
Notwithstanding the above, NASA shall not be restricted in, nor incur any liability for, the disclosure and use of Data not identified with a suitable notice or legend as set forth in paragraph 3 above. Information contained in any data for which disclosure and use is restricted under paragraphs 2 and 3 above, if such information is or becomes generally known without breach of the above, is known to or is generated by NASA independently of carrying out NASA's responsibilities in support of Work for Others, is rightfully received from a third party without restriction, or is included in data which the Contractor and/or other party(s) has, or is required to furnish to the U.S. Government without restriction on disclosure and use.

(7) Data Subject to Export Control:
Technical data, whether or not specifically identified or marked, that is subject to the export control laws and regulations of the United States and that is provided to the Contractor and/or other party(s) in support of Work for Others will be treated as such, and will not be further provided to any foreign persons without proper U.S. Government authorization, where required.

(8) NASA Inventions:
NASA will use reasonable efforts to report inventions made by NASA employees as a consequence of the performance of specified NASA activities in support of Work for Others. Upon request, NASA will use reasonable efforts to grant the Contractor and/or other party(s), in accordance with the requirements of 37 CFR §404 an exclusive, irrevocable, royalty-free license, except for the repayment of U.S. Government prosecution costs, on terms to be subsequently negotiated to any NASA invention that may be in support of Work for Others and on which NASA decides to file a patent application. This license will be subject to the rights reserved in paragraph 10, below.

(9) Joint Inventions with Contractor and/or other party(s):
NASA and the Contractor and/or other party(s) agree to use reasonable efforts to identify and report to each other any inventions made jointly between NASA employees and employees of the Contractor and/or other party(s). Upon request, NASA will agree to refrain from exercising its undivided interest in a manner inconsistent with the Contractor and/or other party(s) commercial interests and to cooperate with the Contractor and/or other party(s) in obtaining patent protection on the Contractor and/or other party(s) undivided interest, subject to the applicable rights reserved in paragraph 10, below.

(10) Rights to be Reserved in the Contractor and/or Other Party(s) License:
Any license granted to the Contractor and/or other party(s) pursuant to paragraphs 9 or 10 above will be subject to the reservation of the following rights:
As to inventions made solely by, or jointly between NASA and the Contractor and/or other party(s), the irrevocable, royalty-free right of NASA to practice or have practiced the invention by or on behalf of NASA for research, experimental or demonstration purposes.

(11) Protection of Reported Inventions:
When inventions are reported and disclosed between the parties in accordance with the provisions of this clause, the receiving party agrees to withhold such reports or disclosures from public access for a reasonable time, presumed to be one year unless otherwise mutually agreed, in order to facilitate the allocation and establishment of the invention and patent rights under these provisions.

(12) Patent Filing Responsibilities and Costs:
The invention and patent rights set forth herein shall apply to any patent applications filed and patents obtained in any country, and each party is responsible for its own costs of preparing, prosecuting, issuing, and maintaining patents covering sole inventions in any country; except NASA and the Contractor and/or other party(s) may, upon the reporting of any invention (sole or joint) or in any license option granted, mutually agree otherwise for any country as to patent application preparation, filing and prosecution responsibilities and costs, and maintenance responsibilities and costs.

(g) News Releases and Publications – The parties (NASA, the ESC Contractor, & Others) agree to coordinate in advance any news releases and/or widely distributed publications that result from activities performed pursuant to this provision. This coordination shall entail notifying the respective points of contact of the proposed news release or publication in sufficient time to allow the other party an opportunity to review and comment as deemed appropriate. None of the parties shall issue a news release or publication prior to the consent of the

respective parties' points of contact.

(h) Security & Export Control – Access to and use of NASA KSC facilities by Other(s) will be subject to instructions and procedures as described in KNPR 1600.1, *KSC Security Procedural requirements*, and NASA Policy Directive NPD 1371.5 *Coordination and Authorization of Access by Foreign Nationals and Foreign Representatives to NASA*, which is applicable to NASA Headquarters and NASA Centers (including Component Facilities). In conducting Work for Others at Kennedy Space Center, the ESC Contractor and Other(s) shall comply with all U.S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120 through 130, and the Export Administration Regulations (EAR), 15 CFR Parts 730 through 799. In the absence of available license exemptions/exceptions, the Contractor and/or Other(s) shall be responsible for obtaining the appropriate licenses or approvals, if required, for the export of hardware, technical data, and software, or for the provision of technical assistance. Additionally, should the Contractor and/or Other(s) employ foreign nationals to participate in Work for Other(s) activities at KSC, the Contractor/Other(s) shall be responsible for obtaining export licenses, if required, before utilizing such foreign nationals in such activities, including instances where the foreign nationals will have access to export controlled technical data or software at Kennedy Space Center facilities.

(i) Safety & Health – All agreements entered into by the ESC Contractor with Other(s) shall incorporate the ESC Contractor's approved Safety and Health Plan. The Plan shall be binding upon the Other(s) during the conduct of their activities at any of the locations identified in F.6, "Place of Performance." Non-routine hazardous operations/tests shall be performed in accordance with KSC Center Director letter documenting Interim Policy for Non-routine Hazardous Operations/Tests. KNPR 8715.3, KSC Safety Practices Procedural Requirements shall be utilized for non-routine hazardous operations/tests once the Interim Policy for Non-routine Hazardous Operations/Tests is incorporated in KNPR 8715.3.

(j) Independence of Contracts – The parties concur that this contract and the authorities and conditions of this provision are independent of any contract between the Contractor and other parties for the conduct of "Work for Others." By authorizing the Contractor to perform Work for Others, NASA makes no assurances to the Contractor or Others as to performance of the objects tested in NASA facilities or other test objects, and relieves the Contractor of none of its obligations under any other contract, grant, or other agreement. This provision does not constitute NASA's endorsement of any test results, resulting designs, hardware, or other matters.

(k) The ESC Contractor will be expected to assume responsibility of any existing agreements with the USTDC **and LSSC** contractor**s**, performance of which are scheduled to continue beyond the end of the USTDC **and LSSC** contract**s**. The ESC Contractor shall coordinate with the third party entity to ensure that those agreements are properly novated so that work can continue uninterrupted, and to ensure that the new agreements comply in all respects with the terms and conditions herein. Novation of these agreements to the ESC should be completed no later than the end of the ESC contract phase-in period. If the ESC Contractor is unable to complete the novation by that time, the ESC Contractor shall notify the Contracting Officer of the delay, including a rationale, and a proposed date for completion.

(End of clause)

H.31 NASA'S TECHNOLOGY TRANSFER PROGRAM

In the event that the Contractor develops new technology or unique utilization of existing technology under this contract, the Contractor shall support, and participate in, NASA's Technology Transfer/Commercialization Program by assisting the transfer of technology developed under Government contract to the private sector.

(a) The Contractor's participation may include a number of different activities including the following:

(1) Dual use development of cutting edge technology having applications both within and outside the aerospace community.
(2) Collaborative efforts with third parties for the purpose of transferring technology.
(3) Government sponsored technology outreach efforts that further the transfer of technology.
(4) Applications engineering work for the purpose of adapting the developed technology to a specific use.

(b) The Contractor shall coordinate all projects and associated agreements with the Contracting Officer's Representative (COR) and the KSC Innovative Partnerships Program Office, and as directed in writing by the Contracting Officer. Agreements shall state funding requirements, project description, scope of project, reporting requirements, and responsible NASA and Contractor personnel. Ownership of rights to the technology developed under these collaborative and partnership activities shall be addressed in the individual agreements. Projects utilizing Government funds will be approved by the Contracting Officer.

(c) Contractor commitment to technology transfer/commercialization can be demonstrated by the development of internal programs aimed at:

(1) Educating and training the workforce in technology transfer activities.
(2) Ensuring employees report new technology as required by NFS 1852.227-70, "New Technology."
(3) Assisting subcontractors with technology transfer activities.

(End of clause)

H.32 ASSOCIATE CONTRACTOR AGREEMENT (ACA)

Given the unique role of this contract for supporting all other entities at KSC, the Contractor shall engage in cooperative relationships that facilitate effective management of overall Center operations. The Contractor shall establish ACAs as required for coordination and exchange of information with other contractors during the ESC contract period of performance. The information to be exchanged shall be that required by the other contractors in the execution of their respective contract requirements. The Contractor shall pursue and foster cooperative efforts and goodwill in a manner that will benefit KSC with increased safety, efficiency, and productivity.

KSC institutional contracts provide a variety of Government furnished services. The ESC Contractor is required to use Government furnished services as specified in Attachment J-07 *Government Furnished Services* while coordinating with the appropriate NASA organization overseeing each contract as required. Unless approved by the Government, the Contractor shall not use alternate sources for any of the services listed. These services have limitations on volume or quantity of service. Applicable Government Furnished Services for off-site performance will be determined by the Government on a case-by-case basis.

The following list includes examples of associate contracts integral to the success of KSC programs.

(a) KSC institutional services and technical development contracts (e.g. Information Management and Communications Support (IMCS) - NNK08OH01C, Institutional Services Contract (ISC)- NNK08OC01C, Medical and Environmental Support Contract (MESC)- NNK08OQ01 C

(b) Major flight, ground operation, and flight operations support contracts (e.g. Integrated Mission Operations Contract – NNJ09HA15C, Checkout Assembly Payload Processing Services Contract – NAS10-02007, U.S. On Orbit Segment Acceptance and Vehicle Sustaining Engineering – NAS15-10000, Space Program Operations Contract – NNJ06VA01C).

The ESC Contractor shall establish formal guidelines for coordination, cooperation, and exchange of information with these associate contractors, at the appropriate level and on a case by case basis. These guidelines shall establish the means for exchange of such data as needed to keep all interested parties fully informed and to maintain the proper support from service contractors. The information to be exchanged shall be that required by the contractors in the execution of their respective contract requirements.

The effectiveness of this joint cooperation will be evaluated as part of the contract award-fee process, as defined in Section J, Attachment J-03, *Award Fee Evaluation Plan* of this contract. The determination of successful performance by the Contractor will include the Government's assessment of the overall and combined performance of the requirements of the other contractors.

(End of clause)

H.33 COMPUTING SERVICES

(a) The Contractor shall utilize the Government Provided IT Services as identified in Attachment J-07 (Government Furnished Services).

(b) For any exceptions to utilization of Government Provided IT Services the Contractor shall submit a request for waiver to the KSC Chief Information Officer (CIO) and provide a copy of the waiver request to the Contracting Officer's Representative (COR) and Contracting Officer.

(c) For items authorized in accordance with paragraph (b) of this clause, the Contractor shall purchase IT hardware and software under NASA's Solutions for Enterprise-Wide Procurement (SEWP) contracts, if available. The SEWP catalog can be accessed on the World Wide Web at http://www.sewp.nasa.gov.

(d) Any computer software acquired, developed or used in accordance with paragraph (c) of this clause may remain the custody of the Contractor until the Contracting Officer calls for the transfer or delivery thereof, or until transfer or delivery is made pursuant to any requirements specified elsewhere in this contract, whichever is earlier. Whenever such software is commercially available, the Contractor shall either grant or obtain from the appropriate vendors sufficient rights to transfer or deliver, without additional fee or approval, the software and associated licenses to the Government or any authorized follow-on Government contractor.

(End of clause)

H.34 OCCUPATIONAL HEALTH SERVICES AND EMERGENCY MEDICAL SERVICES

(a) The Contractor shall utilize medical treatment at the Occupational Health Facility for any injury that occurs at KSC or the CCAFS. The medical services set forth in KNPD 1810.1, KSC Occupational Medicine Program, will be provided to the Contractor by the Government.

(b) The Contractor shall utilize the medical services at the Occupational Health Facility for KSC job-required medical certification health examinations. Medical certifications will be provided in accordance with KBM-ST-2.1 A and B.

(End of clause)

H.35 GOVERNMENT'S RIGHT TO INFORMATION INCIDENTAL TO CONTRACT ADMINISTRATION

(a) With the exception of financial information, the Government will have unlimited rights to use and distribute to third parties any administrative or management information developed by the Contractor or a subcontractor at any tier in whole or in part for the performance of the contract or first produced in the performance of the contract, whether or not said information is specified as a contract deliverable, if created in whole or in part at Governmental expense. The Contracting Officer may, at any time during the contract performance or within a period of three (3) years after contract completion, require the delivery of any administrative or management information developed by the Contractor or a subcontractor at any tier in whole or in part for the performance of the contract or first produced in the performance of the contract.

(b) The Contracting Officer may release the Contractor from the requirements of this clause for specifically identified information at any time during the three (3) year period set forth in Paragraph (a) of this clause.

(End of clause)

H.36 ASBESTOS-CONTAINING BUILDING MATERIALS

(a) Asbestos-Containing Building Materials (ACBM) are known to be present in facilities assigned under the scope of this contract. The Government will provide information regarding the location and quantity of known ACBM in NASA-KSC facilities to the facility tenant organizations through the Environmental Health Office.

(b) Special requirements, coordination, and precautions will apply to any work taking place that involves disturbance of ACBM. Contractors whose contracts require work involving ACBM are required to provide a written program for such work as part of its health and safety plan which is consistent with the requirements of 29 CFR 1926.1101. The Contractor shall coordinate any such work involving ACBM with Environmental Health, Fire Services and any other resident government or contractor organization whose employees may have access to the work location.

(End of clause)

H.37 CONFINED SPACE WORK REQUIREMENTS

(a) Special requirements, coordination, and precautions will apply to any contract work taking place in confined spaces. Each Contractor contracted to perform work in confined spaces is required to provide a written program for such work as part of its health and safety plan which is consistent with the requirements of 29 CFR §1910.146. For work in telecommunications manholes, provisions of 29 CFR §1910.268(o) are also applicable. The Contractor shall coordinate any such work in confined spaces with Environmental Health, Fire Services, and any other resident government or contractor organization whose employees may have access to the work location. The provision of Environmental Health services by the Government does not prohibit the Contractor from providing their own atmospheric testing. Government provided services include environmental health monitoring and consultation support for testing of atmospheres in confined spaces as well as fire rescue and emergency medical services.

(b) Entry into and work in confined spaces shall be in accordance with the requirements of KNPR 1820.4, KSC Respiratory Protection Program, KNPR 1840.19, Industrial Hygiene Programs, and all other applicable clauses of this contract.

(c) Confined spaces, which contain water, shall be pumped out by the Contractor prior to scheduling a confined space entry check.

(End of clause)

H.38 MANAGEMENT AND PROTECTION OF DATA

(a) In the performance of this contract it is anticipated that the Contractor may have access to, be furnished, use, or generate the following types of data (recorded information):

(1) data submitted to the Government with limited rights or restricted rights notices;

(2) data of third parties which the Government has agreed to handle under protective arrangements; and

(3) data generated by or on behalf of the Government which the Government intends to control the use and dissemination thereof.

(b) In order to provide management appropriate for protecting the interests of the Government and other owners of such data, the Contractor agrees with respect to data in category (a)(1) above, and with respect to any data in categories (a)(2) and (a)(3) when so identified by the Contracting Officer, to:

(1) use and disclose such data only to the extent necessary to perform the work required under this contract, with particular emphasis on restricting disclosure of the data to those persons who have a definite need for the data in order to perform under this contract;

(2) not reproduce the data unless reproduction of the data is specifically permitted elsewhere in the contract or by the Contracting Officer;

(3) refrain from disclosing the data to third parties without the written consent of the Contracting Officer; and

(4) return or deliver the data including all copies thereof to the Contracting Officer or his designated recipient when requested by the Contracting Officer.

(End of clause)

H.39 EQUAL EMPLOYMENT OPPORTUNITY REPORTING

The Contractor shall provide a copy of their annual Standard Form 100 (EEO-1) report filing to the Contracting Officer within seven days of submission to the Office of Federal Contract Compliance Programs. This report may be provided either electronically or in hard copy.

(End of clause)

H.40 CONTRACTOR PROPOSED ENHANCEMENTS AND IMPLEMENTATION APPROACHES

The Contractor shall provide the enhancements and implementation approaches described in the PWS Appendix G (Enhancements and Implementation Approaches). The enhancements, which are over and above the requirements published in the ESC Request for Proposal (RFP), and implementation approaches, are those proposed by the Contractor in response to the ESC RFP and identified by the Contracting Officer in PWS Appendix G. The incorporation of these enhancements and implementation approaches does not relieve the Contractor from the responsibilities of meeting all other contract terms and conditions and the ESC Performance Work Statement. By incorporating these enhancements and implementation approaches into PWS Appendix G, the Contractor shall fully implement each as stated with all of the implied attendant requirements.

The estimated cost and fee for providing these enhancements and implementation approaches, as described in PWS Appendix G, is included in the Section B.1, *Estimated Cost and Award Fee*.

(End of clause)

H.41 GOVERNMENT INDUSTRY DATA EXCHANGE PROGRAM (GIDEP)

In accordance with NPR 8735.1 (Procedures for Exchanging Parts, Materials, and Safety Problem Data Utilizing Government-Industry Data Exchange Program and NASA Advisories), the Contractor shall review all GIDEP ALERTS, GIDEP SAFE-ALERTS, GIDEP Problem Advisories, GIDEP Agency Action Notices, and NASA Advisories to determine if they affect the Contractor's products/and or services provided to the Government. For GIDEP ALERTS, GIDEP SAFE-ALERTS, GIDEP Problem Advisories, GIDEP Agency Action Notices, and NASA Advisories that affect the Contractor's products and services provided to the Government, the Contractor shall take action to eliminate or mitigate any negative effect.

The Contractor shall generate applicable failure experience data report(s) (GIDEP ALERT, GIDEP SAFE-ALERT, GIDEP Problem Advisory) in accordance with the requirements of GIDEP S0300-BT-PRO-010 and S0300-BU-GYD-010 whenever failed or nonconforming items, available to other buyers, are discovered during the course of the Contract.

The Contractor shall insert this section in any subcontract for supplies hereunder exceeding $500,000.00 or supplying safety critical item(s) as identified by the Contract. When so inserted, the words, "Contractor" should be changed to "Subcontractor," and "Government" should be changed to "Customer."

(End of clause)

H.42 VEHICLE MANAGEMENT

The Contractor shall develop and maintain a vehicle maintenance program to comply with the vehicle manufacturer’s normal service schedule for government-owned vehicles. The Contractor shall utilize manufacturer warranty repairs when applicable.

The Contractor shall coordinate with the institution for vehicle management functions and vehicle transportation support services. The Contractor shall perform vehicle management functions in accordance with NPR 6200.1 (NASA Transportation and General Traffic Management); NPD 6000.1 (Transportation Management); and KNPR 6000.1 (Transportation Support System Manual), and Executive Order 13423 (Strengthening Federal, Environmental, Energy, and Transportation Management).

The Contractor shall furnish general-purpose vehicles in support of contract requirements. At the discretion of the Contractor, GSA schedules may be utilized to satisfy the requirements for motor vehicles. The Contractor shall ensure all general-purpose vehicles in support of contract requirements are maintained. (Note: There is no Government furnished facility for maintaining the general purpose vehicles.)

The Contractor shall operate government-owned or leased vehicles as required to meet program

requirements.

The Contractor shall ensure that all drivers have proper state licenses, with applicable endorsements, for equipment being operated.

The Contractor shall input the required data into the Federal Automotive Statistical Tool (FAST) for any Contractor-acquired or leased and government-owned vehicles annually, as scheduled by the NASA Fleet Manager.

(End of clause)

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SECTION I - CONTRACT CLAUSES

I.1 CLAUSES INCORPORATED BY REFERENCE -- SECTION I

Clause(s) at the beginning of this Section are incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in Clause 52.252-2, Clauses Incorporated by Reference, of this contract.

I.2 FAR 52.202-1 DEFINITIONS. (JUL 2004)

I.3 FAR 52.203-3 GRATUITIES. (APR 1984)

I.4 FAR 52.203-5 COVENANT AGAINST CONTINGENT FEES. (APR 1984)

I.5 FAR 52.203-6 RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT. (SEP 2006)

I.6 FAR 52.203-7 ANTI-KICKBACK PROCEDURES. (JUL 1995)

I.7 FAR 52.203-8 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY. (JAN 1997)

I.8 FAR 52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY. (JAN 1997)

I.9 FAR 52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS. (SEP 2007)

I.10 FAR 52.203-13 CONTRACTOR CODE OF BUSINESS ETHICS AND CONDUCT. (DEC 2008)

I.11 FAR 52.203-14 DISPLAY OF HOTLINE POSTER(S). (DEC 2007)
NASA Office of Inspector General
http://oig.nasa.gov/hotline.html

I.12 FAR 52.203-15 WHISTLEBLOWER PROTECTIONS UNDER THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009. (MAR 2009)

I.13 FAR 52.204-2 SECURITY REQUIREMENTS. (AUG 1996)

I.14 FAR 52.204-4 PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER. (AUG 2000)

I.15 FAR 52.204-7 CENTRAL CONTRACTOR REGISTRATION. (APR 2008)

I.16 FAR 52.204-9 PERSONAL IDENTITY VERIFICATION OF CONTRACTOR

PERSONNEL. (SEP 2007)

I.17 FAR 52.204-10 REPORTING SUBCONTRACT AWARDS. (JUL 2013)

I.18 FAR 52.204-11 AMERICAN RECOVERY AND REINVESTMENT ACT—REPORTING REQUIREMENTS. (MAR 2009)

I.18.1 FAR 52.204-15 SERVICE CONTRACT REPORTING REQUIREMENTS FOR INDEFINITE-DELIVERY CONTRACTS (JAN 2014)

I.19 FAR 52.208-9 CONTRACTOR USE OF MANDATORY SOURCES OF SUPPLY OR SERVICES. (OCT 2008)

I.20 FAR 52.209-6 PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT. (SEP 2006)

I.21 FAR 52.211-5 MATERIAL REQUIREMENTS. (AUG 2000)

I.22 FAR 52.215-2 AUDIT AND RECORDS - NEGOTIATION. (MAR 2009)

I.23 FAR 52.215-8 ORDER OF PRECEDENCE - UNIFORM CONTRACT FORMAT. (OCT 1997)

I.24 FAR 52.215-10 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA. (OCT 1997)

I.25 FAR 52.215-11 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA - MODIFICATIONS. (OCT 1997)

I.26 FAR 52.215-12 SUBCONTRACTOR COST OR PRICING DATA. (OCT 1997)

I.27 FAR 52.215-13 SUBCONTRACTOR COST OR PRICING DATA - MODIFICATIONS. (OCT 1997)

I.28 FAR 52.215-14 INTEGRITY OF UNIT PRICES. (OCT 1997)

I.29 FAR 52.215-15 PENSION ADJUSTMENTS AND ASSET REVERSIONS. (OCT 2004)

I.30 FAR 52.215-18 REVERSION OR ADJUSTMENT OF PLANS FOR POSTRETIREMENT BENEFITS (PRB) OTHER THAN PENSIONS. (JUL 2005)

I.31 FAR 52.215-21 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA - MODIFICATIONS. (OCT 1997)

I.32 FAR 52.215-23 LIMITATIONS ON PASS-THROUGH CHARGES (OCT 2009)

I.33 FAR 52.216-7 ALLOWABLE COST AND PAYMENT. (DEC 2002)

(3) The designated payment office will make interim payments for contract financing on the 30th day after the designated billing office receives a proper payment request.

I.34 FAR 52.217-8 OPTION TO EXTEND SERVICES. (NOV 1999)

The Government may require continued performance of any services within the limits and at the rates specified in the contract. These rates may be adjusted only as a result of revisions to prevailing labor rates provided by the Secretary of Labor. The option provision may be exercised more than once, but the total extension of performance hereunder shall not exceed 6 months. The Contracting Officer may exercise the option by written notice to the Contractor at least 60 days before the contract expires.

I.35 FAR 52.217-9 OPTION TO EXTEND THE TERM OF THE CONTRACT. (MAR 2000)

(a) The Government may extend the term of this contract by written notice to the Contractor prior to the expiration of the current contract period, provided that the Government gives the Contractor a preliminary written notice of its intent to extend at least 60 days before the contract expires. The preliminary notice does not commit the Government to an extension.

(c) The total duration of this contract, including the exercise of any options under this clause, shall not exceed 8.5 years.

I.36 FAR 52.219-4 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS. (JUL 2005)

[ ] Offeror elects to waive the evaluation preference.

I.37 FAR 52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS. (MAY 2004)

I.38 FAR 52.219-9 SMALL BUSINESS SUBCONTRACTING PLAN. (JUL 2013) – ALTERNATE II (OCT 2001) with Deviation

I.39 FAR 52.219-14 LIMITATIONS ON SUBCONTRACTING. (DEC 1996)

I.40 FAR 52.219-16 LIQUIDATED DAMAGES - SUBCONTRACTING PLAN. (JAN 1999)

I.41 FAR 52.222-1 NOTICE TO THE GOVERNMENT OF LABOR DISPUTES. (FEB 1997)

I.42 FAR 52.222-2 PAYMENT FOR OVERTIME PREMIUMS. (JUL 1990)

(a) The use of overtime is authorized under this contract if the overtime premium does not exceed [*$0*] or the overtime premium is paid for work – (partial paragraph)

I.43 FAR 52.222-3 CONVICT LABOR. (JUN 2003)

I.44 FAR 52.222-4 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT - OVERTIME COMPENSATION. (JUL 2005)

I.45 FAR 52.222-6 DAVIS-BACON ACT. (JUL 2005)

I.46 FAR 52.222-19 CHILD LABOR - COOPERATION WITH AUTHORITIES AND REMEDIES. (AUG 2009)

I.47 FAR 52.222-20 WALSH-HEALEY PUBLIC CONTRACTS ACT. (DEC 1996)

I.48 FAR 52.222-21 PROHIBITION OF SEGREGATED FACILITIES. (FEB 1999)

I.49 FAR 52.222-26 EQUAL OPPORTUNITY. (MAR 2007)

I.50 FAR 52.222-29 NOTIFICATION OF VISA DENIAL. (JUN 2003)

I.50.1 FAR 52.222-30 Davis-Bacon Act (DBA) Price Adjustment (None or Separately Specified Method) (Dec 2001)

I.51 FAR 52.222-35 EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS. (SEP 2006)

I.52 FAR 52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES. (JUN 1998)

I.53 FAR 52.222-37 EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS. (SEP 2006)

I.54 FAR 52.222-41 SERVICE CONTRACT ACT OF 1965. (NOV 2007)

I.55 FAR 52.222-50 COMBATING TRAFFICKING IN PERSONS. (FEB 2009)

I.56 FAR 52.222-54 EMPLOYEE ELIGIBILITY VERIFICATION (AUG 2009)

I.57 FAR 52.223-3 HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA. (JAN 1997) - ALTERNATE I (JUL 1995)

I.58 FAR 52.223-5 POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION. (AUG 2003)

I.59 FAR 52.223-5 POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION. (AUG 2003) -- ALTERNATE I (AUG 2003)

I.60 FAR 52.223-5 POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION. (AUG 2003) -- ALTERNATE II (AUG 2003)

I.61 FAR 52.223-6 DRUG-FREE WORKPLACE. (MAY 2001)

I.62 FAR 52.223-10 WASTE REDUCTION PROGRAM. (AUG 2000)

I.63 FAR 52.223-12 REFRIGERATION EQUIPMENT AND AIR CONDITIONERS. (MAY 1995)

I.64 FAR 52.223-14 TOXIC CHEMICAL RELEASE REPORTING. (AUG 2003)

I.65 FAR 52.223-15 ENERGY EFFICIENCY IN ENERGY-CONSUMING PRODUCTS. (DEC 2007)

I.66 FAR 52.223-16 IEEE 1680 STANDARD FOR THE ENVIRONMENTAL ASSESSMENT OF PERSONAL COMPUTER PRODUCTS. (DEC 2007)

I.67 FAR 52.224-1 PRIVACY ACT NOTIFICATION. (APR 1984)

I.68 FAR 52.224-2 PRIVACY ACT. (APR 1984)

I.69 FAR 52.225-1 BUY AMERICAN ACT - SUPPLIES. (FEB 2009)

I.70 FAR 52.225-8 DUTY-FREE ENTRY. (FEB 2000)

(4) Notation UNITED STATES GOVERNMENT, NASA, Duty-free entry to be claimed pursuant to Item No(s) [*from Tariff Schedules*], Harmonized Tariff Schedules of the United States. Upon arrival of shipment at port of entry, District Director of Customs, please release shipment under 19 CFR part 142 and notify [*cognizant contract administration office*] for execution of Customs Forms 7501 and 7501-A and any required duty-free entry certificates.;

I.71 FAR 52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES. (JUN 2008)

I.72 FAR 52.227-1 AUTHORIZATION AND CONSENT. (DEC 2007)

I.73 FAR 52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT. (DEC 2007)

I.74 FAR 52.227-3 PATENT INDEMNITY. (APR 1984)

I.75 FAR 52.227-3 PATENT INDEMNITY. (APR 1984) - ALTERNATE II (APR 1984)

[List and/or identify the items to be included under this indemnity.]

I.76 FAR 52.227-11 PATENT RIGHTS--OWNERSHIP BY THE CONTRACTOR. (DEC 2007)

(j) Communications. The Contractor shall contact the Contracting Officer for any communications regarding this clause.

I.77 FAR 52.227-14 RIGHTS IN DATA--GENERAL. (DEC 2007)

I.78 FAR 52.227-14 RIGHTS IN DATA--GENERAL. (DEC 2007) -- ALTERNATE II (DEC 2007)

(a) These data are submitted with limited rights under Government Contract No. **NONE** These data may be reproduced and used by the Government with the express limitation that they will not, without written permission of the Contractor, be used for purposes of manufacture nor disclosed outside the Government; except that the Government may disclose these data outside the Government for the following purposes, if any; provided that the Government makes such disclosure subject to prohibition against further use and disclosure:

(i) Use (Except for manufacture) by support service contractors.
(ii) Evaluation by nongovernment evaluators.
(iii) Use (except for manufacture) by other contractors participating in the Government's program of which the specific contract is a part.
(iv) Emergency repair or overhaul work.
(v) Release to a foreign government, or its instrumentalities, if required to serve the interests of the U.S. Government, for information or evaluation, or for emergency repair or overhaul work by the foreign government.

I.79 FAR 52.227-14 RIGHTS IN DATA--GENERAL. (DEC 2007) -- ALTERNATE III (DEC 2007)

I.80 FAR 52.227-16 ADDITIONAL DATA REQUIREMENTS. (JUN 1987)

I.81 FAR 52.227-19 COMMERCIAL COMPUTER SOFTWARE LICENSE. (DEC 2007)

I.82 FAR 52.227-23 RIGHTS TO PROPOSAL DATA (TECHNICAL). (JUN 1987)

Except for data contained on pages [NONE], it is agreed that as a condition of award of this contract, and notwithstanding the conditions of any notice appearing thereon, the Government shall have unlimited rights (as defined in the "Rights in Data - General" clause contained in this contract) in and to the technical data contained in the proposal dated [10/01/2010], upon which this contract is based.

I.83 FAR 52.228-7 INSURANCE - LIABILITY TO THIRD PERSONS. (MAR 1996)

I.84 FAR 52.228-8 LIABILITY AND INSURANCE - LEASED MOTOR VEHICLES. (MAY 1999)

I.85 FAR 52.230-2 COST ACCOUNTING STANDARDS. (OCT 2008)

I.86 FAR 52.230-6 ADMINISTRATION OF COST ACCOUNTING STANDARDS. (MAR 2008)

I.87 FAR 52.232-9 LIMITATION ON WITHHOLDING OF PAYMENTS. (APR 1984)

I.88 FAR 52.232-17 INTEREST. (OCT 2008)

I.89 FAR 52.232-18 AVAILABILITY OF FUNDS. (APR 1984)

I.90 FAR 52.232-22 LIMITATION OF FUNDS. (APR 1984)

I.91 FAR 52.232-23 ASSIGNMENT OF CLAIMS. (JAN 1986)

I.92 FAR 52.232-25 PROMPT PAYMENT. (OCT 2008)

I.93 FAR 52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER – CENTRAL CONTRACTOR REGISTRATION. (OCT 2003)

I.94 FAR 52.233-1 DISPUTES. (JUL 2002) - ALTERNATE I (DEC 1991)

I.95 FAR 52.233-3 PROTEST AFTER AWARD. (AUG 1996) - ALTERNATE I (JUN 1985)

I.96 FAR 52.233-4 APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM. (OCT 2004)

I.97 FAR 52.237-2 PROTECTION OF GOVERNMENT BUILDINGS, EQUIPMENT, AND VEGETATION. (APR 1984)

I.98 FAR 52.237-3 CONTINUITY OF SERVICES. (JAN 1991)

I.99 FAR 52.239-1 PRIVACY OR SECURITY SAFEGUARDS. (AUG 1996)

I.100 FAR 52.242-1 NOTICE OF INTENT TO DISALLOW COSTS. (APR 1984)

I.101 FAR 52.242-3 PENALTIES FOR UNALLOWABLE COSTS. (MAY 2001)

I.102 FAR 52.242-4 CERTIFICATION OF FINAL INDIRECT COSTS. (JAN 1997)

I.103 FAR 52.242-13 BANKRUPTCY. (JUL 1995)

I.104 FAR 52.243-2 CHANGES - COST-REIMBURSEMENT. (AUG 1987)

I.105 FAR 52.243-2 CHANGES - COST-REIMBURSEMENT. (AUG 1987) - ALTERNATE II (APR 1984)

I.106 FAR 52.243-6 CHANGE ORDER ACCOUNTING. (APR 1984)

I.107 FAR 52.243-7 NOTIFICATION OF CHANGES. (APR 1984)

(b) *Notice.* The primary purpose of this clause is to obtain prompt reporting of Government conduct that the Contractor considers to constitute a change to this contract. Except for changes identified as such in writing and signed by the Contracting Officer, the Contractor shall notify the Administrative Contracting Officer in writing promptly, within seven (7) (to be negotiated) calendar days from the date that the Contractor identifies any Government conduct (including actions, inactions, and written or oral communications) that the Contractor regards as a change to the contract terms and conditions. On the basis of the most accurate information available to the Contractor, the notice shall state -

(d) *Government response.* The Contracting Officer shall promptly, within fourteen (14) (to be negotiated) calendar days after receipt of notice, respond to the notice in writing. In responding, the Contracting Officer shall either -

I.108 FAR 52.244-2 SUBCONTRACTS. (JUN 2007) - ALTERNATE I (JUN 2007)

(d) If the Contractor has an approved purchasing system, the Contractor nevertheless shall obtain the Contracting Officer's written consent before placing the following subcontracts:

1. For all Cost Reimbursable, Time and Material, and Labor Hour subcontracts with an

initial award of $150,000 or greater and modifications of $75,000 or greater.

2. Letter subcontracts and unpriced orders of any amount.
3. Ratifications of any amount (i.e. all orders issued prior to issuance of a contractual document or issued without all required approvals).

(j) Paragraphs (c) and (e) of this clause do not apply to the following subcontracts, which were evaluated during negotiations:

Subcontractor	**Subcontract Number**
a.i. solutions	S10-101000
Sierra Lobo	S10-102000
SDB	S10-103000
Craig Technologies	S10-104000
AGT	S10-107000
Ensco	S10-108000
Nelson	S10-109000
MSM Group	S10-110000
Easi	S10-111000
SGT	S10-112000
Summit Technologies & Solutions	1000005553

The following subcontracts require the Contractor Officer's written concurrence prior to placing work with them:

Fluor	S10-105000
Harris	S10-106000
FAMU	S10-113000

I.109 FAR 52.244-5 COMPETITION IN SUBCONTRACTING. (DEC 1996)

I.110 FAR 52.245-1 GOVERNMENT PROPERTY. (APR 2012)

I.111 RESERVED

I.112 FAR 52.245-9 USE AND CHARGES. (APR 2012)

I.113 FAR 52.246-25 LIMITATION OF LIABILITY - SERVICES. (FEB 1997)

I.114 FAR 52.247-1 COMMERCIAL BILL OF LADING NOTATIONS. (FEB 2006)

Transportation is for NASA and the actual total transportation charges paid to the carrier(s) by the consignor or consignee are assignable to, and shall be reimbursed by, the Government.
Transportation is for NASA and the actual total transportation charges paid to the carrier(s) by the consignor or consignee shall be reimbursed by the Government, pursuant to cost-reimbursement contract No.NNK10EA08C. This may be confirmed by contacting ESC Contracting Officer, Mail Code OP-ES, Kennedy Space Center, FL 32899.

I.115 FAR 52.247-63 PREFERENCE FOR U.S.-FLAG AIR CARRIERS. (JUN 2003)

I.116 FAR 52.247-64 PREFERENCE FOR PRIVATELY OWNED U.S.-FLAG COMMERCIAL VESSELS. (FEB 2006)

I.117 FAR 52.247-68 REPORT OF SHIPMENT (REPSHIP). (FEB 2006)

I.118 FAR 52.248-1 VALUE ENGINEERING. (FEB 2000)

I.119 FAR 52.249-6 TERMINATION (COST-REIMBURSEMENT). (MAY 2004)

I.120 FAR 52.249-14 EXCUSABLE DELAYS. (APR 1984)

I.121 FAR 52.251-1 GOVERNMENT SUPPLY SOURCES. (APR 1984)

I.122 FAR 52.251-2 INTERAGENCY FLEET MANAGEMENT SYSTEM VEHICLES AND RELATED SERVICES. (JAN 1991)

I.123 FAR 52.253-1 COMPUTER GENERATED FORMS. (JAN 1991)

I.124 NFS 1852.209-72 COMPOSITION OF THE CONTRACTOR. (DEC 1988)

I.125 NFS 1852.216-89 ASSIGNMENT AND RELEASE FORMS. (JUL 1997)

I.126 NFS 1852.219-74 USE OF RURAL AREA SMALL BUSINESSES. (SEP 1990)

I.127 NFS 1852.219-75 SMALL BUSINESS SUBCONTRACTING REPORTING. (MAY 1999)

I.128 NFS 1852.219-76 NASA 8 PERCENT GOAL. (JUL 1997)

I.129 NFS 1852.219-77 NASA MENTOR-PROTEGE PROGRAM. (JUN 2009)

I.129.1 NFS 1852.219-79 MENTOR REQUIREMENTS AND EVALUAITON (MAY 2009) (Ref. Attach J-20)

I.130 NFS 1852.227-14 RIGHTS IN DATA - GENERAL.

I.131 NFS 1852.227-19 COMMERCIAL COMPUTER SOFTWARE - RESTRICTED RIGHTS.

I.132 NFS 1852.235-70 CENTER FOR AEROSPACE INFORMATION. (DEC 2006)

I.133 NFS 1852.236-73 HURRICANE PLAN. (DEC 1988)

I.134 NFS 1852.237-70 EMERGENCY EVACUATION PROCEDURES. (DEC 1988)

I.135 NFS 1852.237-72 ACCESS TO SENSITIVE INFORMATION. (JUN 2005)

I.136 NFS 1852.237-73 RELEASE OF SENSITIVE INFORMATION. (JUN 2005)

I.137 NFS 1852.242-78 EMERGENCY MEDICAL SERVICES AND EVACUATION. (APR 2001)

I.138 NFS 1852.243-71 SHARED SAVINGS. (MAR 1997)

I.139 FAR 52.204-1 APPROVAL OF CONTRACT. (DEC 1989)

This contract is subject to the written approval of the Procurement Officer at Kennedy Space Center and shall not be binding until so approved.

(End of clause)

I.140 FAR 52.208-8 REQUIRED SOURCES FOR HELIUM AND HELIUM USAGE DATA. (APR 2002)

(a) Definitions.

Bureau of Land Management, as used in this clause, means the Department of the Interior, Bureau of Land Management, Amarillo Field Office, Helium Operations, located at 801 South Fillmore Street, Suite 500, Amarillo, TX 79101-3545.

Federal helium supplier means a private helium vendor that has an in-kind crude helium sales contract with the Bureau of Land Management (BLM) and that is on the BLM Amarillo Field Office's Authorized List of Federal Helium Suppliers available via the Internet at http://www.nm.blm.gov/www/amfo/amfo_home.html.

Major helium requirement means an estimated refined helium requirement greater than 200,000 standard cubic feet (scf) (measured at 14.7 pounds per square inch absolute pressure and 70 degrees Fahrenheit temperature) of gaseous helium or 7510 liters of liquid helium delivered to a helium use location per year.

(b) Requirements--(1) Contractors must purchase major helium requirements from Federal helium suppliers, to the extent that supplies are available.

(2) The Contractor shall provide to the Contracting Officer the following data within 10 days after the Contractor or subcontractor receives a delivery of helium from a Federal helium supplier--

(i) The name of the supplier;

(ii) The amount of helium purchased;

(iii) The delivery date(s); and

(iv) The location where the helium was used.

(c) Subcontracts. The Contractor shall insert this clause, including this paragraph (c), in any subcontract or order that involves a major helium requirement.

(End of clause)

I.141 FAR 52.215-19 NOTIFICATION OF OWNERSHIP CHANGES. (OCT 1997)

(a) The Contractor shall make the following notifications in writing:

(1) When the Contractor becomes aware that a change in its ownership has occurred, or is certain to occur, that could result in changes in the valuation of its capitalized assets in the accounting records, the Contractor shall notify the Administrative Contracting Officer (ACO) within 30 days.

(2) The Contractor shall also notify the ACO within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership.

(b) The Contractor shall -

(1) Maintain current, accurate, and complete inventory records of assets and their costs;

(2) Provide the ACO or designated representative ready access to the records upon request;

(3) Ensure that all individual and grouped assets, their capitalized values, accumulated depreciation or amortization, and remaining useful lives are identified accurately before and after each of the Contractor's ownership changes; and

(4) Retain and continue to maintain depreciation and amortization schedules based on the asset records maintained before each Contractor ownership change.

(c) The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirement of FAR 15.408(k).

(End of clause)

I.142 FAR 52.216-18 ORDERING. (OCT 1995) (Applicable to IDIQ services)

(a) Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued during the period of performance as specified in Section F Clause, *Period of Performance*.

(b) All delivery orders or task orders are subject to the terms and conditions of this contract. In the event of conflict between a delivery order or task order and this contract, the contract shall control.

(c) If mailed, a delivery order or task order is considered issued when the Government deposits the order in the mail. Orders may be issued orally, by facsimile, or by electronic commerce methods only if authorized in the Schedule.

(End of clause)

I.143 FAR 52.216-19 ORDER LIMITATIONS. (OCT 1995) (Applicable to IDIQ services)

(a) *Minimum order*. When the Government requires supplies or services covered by this contract in an amount of less than $3,000 the Government is not obligated to purchase, nor is the Contractor obligated to furnish, those supplies or services under the contract.

(b) *Maximum order*. The Contractor is not obligated to honor -

(1) Any order for a single item in excess of $150M;

(2) Any order for a combination of items in excess of $150M or

(3) A series of orders from the same ordering office within two days that together call for quantities exceeding the limitation in subparagraph (b)(1) or (2) of this section.

(c) If this is a requirements contract (*i.e.*, includes the Requirements clause at subsection 52.216-21 of the Federal Acquisition Regulation (FAR)), the Government is not required to order a part of any one requirement from the Contractor if that requirement exceeds the maximum-order limitations in paragraph (b) of this section.

(d) Notwithstanding paragraphs (b) and (c) of this section, the Contractor shall honor any order exceeding the maximum order limitations in paragraph (b), unless that order (or orders) is returned to the ordering office within two (2) working days after issuance, with written notice stating the Contractor's intent not to ship the item (or items) called for and the reasons. Upon receiving this notice, the Government may acquire the supplies or services from another source.

(End of clause)

I.144 FAR 52.216-22 INDEFINITE QUANTITY. (OCT 1995) (Applicable to IDIQ services)

(a) This is an indefinite-quantity contract for the suppliesor services specified, and effective for the period stated, in the Schedule. The quantities of supplies and services specified inthe Schedule are estimates only and are not purchased by thiscontract.

(b) Delivery or performance shall be made only as authorizedby orders issued in accordance with the Ordering clause. The Contractor shall furnish to the Government, when and if ordered, the supplies or services specified in the Schedule up to and including the quantity designated in the Schedule as the “maximum.” The Government shall order at least the quantity of supplies or services designated in the Schedule as the “minimum.”

(c) Except for any limitations on quantities in the OrderLimitations clause or in the Schedule, there is no limit on the number of orders that may be issued. The Government may issue orders requiring delivery to multiple destinations or performance at multiple locations.

(d) Any order issued during the effective period of this contract and not completed within that period shall be completed by the Contractor within the time specified in the order. The contract shall govern the Contractor's and Government's rights and obligations with respect to that order to the same extent as if the order were completed during the contract's effective period; *provided*, that the Contractor shall not be required to make any deliveries under this contract six months past the contract performance period.

(End of clause)

I.145 INDEFINITE-DELIVERY/INDEFINITE-QUANTITY (IDIQ) - LIMITATIONS (Applicable to IDIQ services)

Payment for supplies and services to be furnished under IDIQ delivery orders shall be made based on the total value of IDIQ delivery orders issued under this contract. Payments shall be in accordance with the provisions set forth in Section G Clause, NFS 1852.216-87 *Submission of Vouchers for Payment*.

(a) For the purposes of placing maximum Not to Exceed (NTE) amount on this contract, the maximum amount of IDIQ supplies and services ordered in total under this contract shall not exceed the maximum NTE amount of $1.8 Billion. This NTE amount includes both cost and fee. The maximum NTE amount is an estimate and does not reflect an obligation of the Government. The Government's obligation hereunder shall be based on that specified in the task/delivery orders issued during the period of the contract.

(b) The minimum amount of IDIQ supplies and services ordered in total and paid for under this contract shall be $100,000. This amount includes both cost and fee.

(c) The total cost plus award fee contract value for IDIQ delivery orders issued under this contract is set forth in Section B Clause, *Supplies and Services to be Provided*.

(End of clause)

I.146 FAR 52.219-28 POST-AWARD SMALL BUSINESS PROGRAM REREPRESENTATION. (APR 2009)

(a) *Definitions*. As used in this clause -

Long-term contract means a contract of more than five years in duration, including options. However, the term does not include contracts that exceed five years in duration because the period of performance has been extended for a cumulative period not to exceed six months under the clause at 52.217-8, Option to Extend Services, or other appropriate authority.

Small business concern means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (c) of this clause.

(b) If the Contractor represented that it was a small business concern prior to award of this contract, the Contractor shall rerepresent its size status according to paragraph (e) of this clause or, if applicable, paragraph (g) of this clause, upon the occurrence of any of the following:

(1) Within 30 days after execution of a novation agreement or within 30 days after modification of the contract to include this clause, if the novation agreement was executed prior to inclusion of this clause in the contract.

(2) Within 30 days after a merger or acquisition that does not require a novation or within 30 days after modification of the contract to include this clause, if the merger or acquisition occurred prior to inclusion of this clause in the contract.

(3) For long-term contracts -

(i) Within 60 to 120 days prior to the end of the fifth year of the contract; and

(ii) Within 60 to 120 days prior to the exercise date specified in the contract for any option thereafter.

(c) The Contractor shall rerepresent its size status in accordance with the size standard in effect at the time of this rerepresentation that corresponds to the North American Industry Classification System (NAICS) code assigned to this contract. The small business size standard corresponding to this NAICS code can be found at *http://www.sba.gov/ services/contractingopportunities/ sizestandardstopics/*.

(d) The small business size standard for a Contractor providing a product which it does not manufacture itself, for a contract other than a construction or service contract, is 500 employees.

(e) Except as provided in paragraph (g) of this clause, the Contractor shall make the rerepresentation required by paragraph (b) of this clause by validating or updating all its representations in the Online Representations and Certifications Application and its data in the Central Contractor Registration, as necessary, to ensure they reflect current status. The Contractor shall notify the contracting office by e-mail, or otherwise in writing, that the data have been validated or updated, and provide the date of the validation or update.

(f) If the Contractor represented that it was other than a small business concern prior to award of this contract, the Contractor may, but is not required to, take the actions required by paragraphs (e) or (g) of this clause.

(g) If the Contractor does not have representations and certifications in ORCA, or does not have a representation in ORCA for the NAICS code applicable to this contract, the Contractor is required to complete the following rerepresentation and submit it to the contracting office, along with the contract number and the date on which the rerepresentation was completed:

The Contractor represents that it ___ is, ___ is not a small business concern under NAICS Code _____ assigned to contract number _____. (*Contractor to sign and date and insert authorized signer's name and title)*.

(End of clause)

I.147 FAR 52.222-39 NOTIFICATION OF EMPLOYEE RIGHTS CONCERNING PAYMENT OF UNION DUES OR FEES. (DEC 2004)

(a) Definition. As used in this clause--

United States means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) Except as provided in paragraph (e) of this clause, during the term of this contract, the Contractor shall post a notice, in the form of a poster, informing employees of their rights concerning union membership and payment of union dues and fees, in conspicuous places in and about all its plants and offices, including all places where notices to employees are customarily posted. The notice shall include the following information (except that the information pertaining to National Labor Relations Board shall not be included in notices posted in the plants or offices of carriers subject to the Railway Labor Act, as amended (45 U.S.C. 151-188)).

Notice to Employees

Under Federal law, employees cannot be required to join a union or maintain membership in a union in order to retain their jobs.

Under certain conditions, the law permits a union and an employer to enter into a union-security agreement requiring employees to pay uniform periodic dues and initiation fees. However, employees who are not union members can object to the use of their payments for certain purposes and can only be required to pay their share of union costs relating to collective bargaining, contract administration, and grievance adjustment.

If you do not want to pay that portion of dues or fees used to support activities not related to collective bargaining, contract administration, or grievance adjustment, you are entitled to an appropriate reduction in your payment. If you believe that you have been required to pay dues or fees used in part to support activities not related to collective bargaining, contract administration, or grievance adjustment, you may be entitled to a refund and to an appropriate reduction in future payments.

For further information concerning your rights, you may wish to contact the National Labor Relations Board (NLRB) either at one of its Regional offices or at the following address or toll free number:

National Labor Relations Board
Division of Information
1099 14th Street, N.W.
Washington, DC 20570
1-866-667-6572
1-866-316-6572 (TTY)

To locate the nearest NLRB office, see NLRB's website at http://www.nlrb.gov.

(c) The Contractor shall comply with all provisions of Executive Order 13201 of February 17, 2001, and related implementing regulations at 29 CFR part 470, and orders of the Secretary of Labor.

(d) In the event that the Contractor does not comply with any of the requirements set forth in paragraphs (b), (c), or (g), the Secretary may direct that this contract be cancelled, terminated, or suspended in whole or in part, and declare the Contractor ineligible for further Government contracts in accordance with procedures at 29 CFR part 470, Subpart B--Compliance Evaluations, Complaint Investigations and Enforcement Procedures. Such other sanctions or remedies may be imposed as are provided by 29 CFR part 470, which implements Executive Order 13201, or as are otherwise provided by law.

(e) The requirement to post the employee notice in paragraph (b) does not apply to--

(1) Contractors and subcontractors that employ fewer than 15 persons;

(2) Contractor establishments or construction work sites where no union has been formally recognized by the Contractor or certified as the exclusive bargaining representative of the Contractor's employees;

(3) Contractor establishments or construction work sites located in a jurisdiction named in the definition of the United States in which the law of that jurisdiction forbids enforcement of union-security agreements;

(i) The facility is in all respects separate and distinct from activities of the Contractor related to the performance of a contract; and

(ii) Such a waiver will not interfere with or impede the effectuation of the Executive order; or

(4) Work outside the United States that does not involve the recruitment or employment of workers within the United States.

(f) The Department of Labor publishes the official employee notice in two variations; one for contractors covered by the Railway Labor Act and a second for all other contractors. The Contractor shall--

(1) Obtain the required employee notice poster from the Division of Interpretations and Standards, Office of Labor-Management Standards, U.S. Department of Labor, 200 Constitution Avenue, NW, Room N-5605, Washington, DC 20210, or from any field office of the Department's Office of Labor-Management Standards or Office of Federal Contract Compliance Programs;

(2) Download a copy of the poster from the Office of Labor-Management Standards website at http://www.olms.dol.gov; or

(3) Reproduce and use exact duplicate copies of the Department of Labor's official poster.

(g) The Contractor shall include the substance of this clause in every subcontract or purchase order that exceeds the simplified acquisition threshold, entered into in connection with this contract, unless exempted by the Department of Labor Deputy Assistant Secretary for Labor-Management Programs on account of special circumstances in the national interest under authority of 29 CFR 470.3(c). For indefinite quantity subcontracts, the Contractor shall include the substance of this clause if the value of orders in any calendar year of the subcontract is expected to exceed the simplified acquisition threshold. Pursuant to 29 CFR part 470, Subpart B--Compliance Evaluations, Complaint Investigations and Enforcement Procedures, the Secretary of Labor may direct the Contractor to take such action in the enforcement of these regulations, including the imposition of sanctions for noncompliance with respect to any such subcontract or purchase order. If the Contractor becomes involved in litigation with a subcontractor or vendor, or is threatened with such involvement, as a result of such direction, the Contractor may request the United States, through the Secretary of Labor, to enter into such litigation to protect the interests of the United States.

(End of clause)

I.148 FAR 52.222-42 STATEMENT OF EQUIVALENT RATES FOR FEDERAL HIRES. (MAY 1989)

In compliance with the Service Contract Act of 1965, as amended, and the regulations of the

Secretary of Labor (29 CFR Part 4), this clause identifies the classes of service employees expected to be employed under the contract and states the wages and fringe benefits payable to each if they were employed by the contracting agency subject to the provisions of 5 U.S.C. 5341 or 5332.

This Statement is for Information Only: It is not a Wage Determination

See Attachment J-11 (Statement of Equivalent Rates for Federal Hires).

(End of clause)

I.149 FAR 52.223-7 NOTICE OF RADIOACTIVE MATERIALS. (JAN 1997)

(a) The Contractor shall notify the Contracting Officer or designee, in writing, 90 days prior to the delivery of, or prior to completion of any servicing required by this contract of, items containing either (1) radioactive material requiring specific licensing under the regulations issued pursuant to the Atomic Energy Act of 1954, as amended, as set forth in Title 10 of the Code of Federal Regulations, in effect on the date of this contract, or (2) other radioactive material not requiring specific licensing in which the specific activity is greater than 0.002 microcuries per gram or the activity per item equals or exceeds 0.01 microcuries. Such notice shall specify the part or parts of the items which contain radioactive materials, a description of the materials, the name and activity of the isotope, the manufacturer of the materials, and any other information known to the Contractor which will put users of the items on notice as to the hazards involved (OMB No. 9000-0107).

(b) If there has been no change affecting the quantity of activity, or the characteristics and composition of the radioactive material from deliveries under this contract or prior contracts, the Contractor may request that the Contracting Officer or designee waive the notice requirement in paragraph (a) of this clause. Any such request shall -

(1) Be submitted in writing;

(2) State that the quantity of activity, characteristics, and composition of the radioactive material have not changed; and

(3) Cite the contract number on which the prior notification was submitted and the contracting office to which it was submitted.

(c) All items, parts, or subassemblies which contain radioactive materials in which the specific activity is greater than 0.002 microcuries per gram or activity per item equals or exceeds 0.01 microcuries, and all containers in which such items, parts or subassemblies are delivered to the Government shall be clearly marked and labeled as required by the latest revision of MIL-STD 129 in effect on the date of the contract.

(d) This clause, including this paragraph (d), shall be inserted in all subcontracts for radioactive materials meeting the criteria in paragraph (a) of this clause.

(End of clause)

I.150 FAR 52.223-9 ESTIMATE OF PERCENTAGE OF RECOVERED MATERIAL CONTENT FOR EPA-DESIGNATED ITEMS. (MAY 2008)

(a) *Definitions*. As used in this clause -

"Postconsumer material" means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of "recovered material."

"Recovered material" means waste materials and by-products recovered or diverted from solid waste, but the term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

(b) The Contractor, on completion of this contract, shall -

(1) Estimate the percentage of the total recovered material content for EPA-designated item(s) delivered and/or used in contract performance, including, if applicable, the percentage of post-consumer material content; and

(2) Submit this estimate to the Contracting Officer.

(End of clause)

I.151 FAR 52.223-11 OZONE-DEPLETING SUBSTANCES. (MAY 2001)

(a) Definition. Ozone-depleting substance, as used in this clause, means any substance the Environmental Protection Agency designates in 40 CFR part 82 as--

(1) Class I, including, but not limited to, chlorofluorocarbons, halons, carbon tetrachloride, and methyl chloroform; or

(2) Class II, including, but not limited to, hydrochlorofluorocarbons.

(b) The Contractor shall label products which contain or are manufactured with ozone-depleting substances in the manner and to the extent required by 42 U.S.C. 7671j (b), (c), and (d) and 40 CFR Part 82, Subpart E, as follows:

Warning

Contains (or manufactured with, if applicable) *_____, a substance(s) which harm(s) public health and environment by destroying ozone in the upper atmosphere.

* The Contractor shall insert the name of the substance(s).

(End of clause)

I.152 FAR 52.244-6 SUBCONTRACTS FOR COMMERCIAL ITEMS. (DEC 2009)

(a) *Definitions.* As used in this clause—

"Commercial item" has the meaning contained in Federal Acquisition Regulation 2.101, Definitions. "Subcontract" includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c)(1) The Contractor shall insert the following clauses in subcontracts for commercial items:

(i) 52.203-13, Contractor Code of Business Ethics and Conduct (Dec 2008) (Pub. L. 110-252, Title VI, Chapter 1 (41 U.S.C. 251 note)), if the subcontract exceeds $5,000,000 and has a performance period of more than 120 days. In altering this clause to identify the appropriate parties, all disclosures of violation of the civil False Claims Act or of Federal criminal law shall be directed to the agency Office of the Inspector General, with a copy to the Contracting Officer.

(ii) 52.203-15, Whistleblower Protections Under the American Recovery and Reinvestment Act of 2009 (Section 1553 of Pub. L. 111-5), if the subcontract is funded under the Recovery Act.

(iii) 52.219-8, Utilization of Small Business Concerns (May 2004) (15 U.S.C. 637(d)(2) and (3)), if the subcontract offers further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds $550,000 ($1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(iv) 52.222-26, Equal Opportunity (Mar 2007) (E.O. 11246).

(v) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (Sept 2006) (38 U.S.C. 4212(a));

(vi) 52.222-36, Affirmative Action for Workers with Disabilities (June 1998) (29 U.S.C. 793).

(vii) [Reserved]

(viii) 52.222-50, Combating Trafficking in Persons (Feb 2009) (22 U.S.C. 7104(g)).

(ix) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (Feb 2006) (46 U.S.C. App. 1241 and 10 U.S.C. 2631), if flow down is required in accordance with paragraph (d) of FAR clause 52.247-64).

(2) While not required, the Contractor may flow down to subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

(End of clause)

I.153 FAR 52.247-67 SUBMISSION OF TRANSPORTATION DOCUMENTS FOR AUDIT. (FEB 2006)

(a) The Contractor shall submit to the address identified below, for prepayment audit, transportation documents on which the United States will assume freight charges that were paid--

(1) By the Contractor under a cost-reimbursement contract; and

(2) By a first-tier subcontractor under a cost-reimbursement subcontract thereunder.

(b) Cost-reimbursement Contractors shall only submit for audit those bills of lading with freight shipment charges exceeding $100. Bills under $100 shall be retained on-site by the Contractor and made available for on-site audits. This exception only applies to freight shipment bills and is not intended to apply to bills and invoices for any other transportation services.

(c) Contractors shall submit the above referenced transportation documents to--

NSSC Accounts Payable
Building 1111, C Road
Stennis Space Center, MS 39529

(End of clause)

I.154 FAR 52.252-2 CLAUSES INCORPORATED BY REFERENCE. (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es): Federal Acquisition Regulation (FAR) Clauses:

http://www.acqnet.gov/far/

NASA FAR Supplement (NFS) Clauses:

http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm

(End of clause)

I.155 FAR 52.252-6 AUTHORIZED DEVIATIONS IN CLAUSES. (APR 1984)

(a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of (DEVIATION) after the date of the clause.

(b) The use in this solicitation or contract of any NASA FAR Supplement (48 CFR 18) clause with an authorized deviation is indicated by the addition of (DEVIATION) after the name of the regulation.

(End of clause)

I.156 NFS 1852.204-76 SECURITY REQUIREMENTS FOR UNCLASSIFIED INFORMATION TECHNOLOGY RESOURCES. (OCT 2009)

(a) The Contractor shall protect the confidentiality, integrity, and availability of NASA Electronic Information and IT resources and protect NASA Electronic Information from unauthorized disclosure.

(b) This clause is applicable to all NASA contractors and subcontractors that process, manage, access, or store unclassified electronic information, to include Sensitive But Unclassified (SBU) information, for NASA in support of NASA's missions, programs, projects and/or institutional requirements. Applicable requirements, regulations, policies, and guidelines are identified in the Applicable Documents List (ADL) provided as an attachment to the contract. The documents listed in the ADL can be found at: www.nasa.gov/offices/ocio/itsecurity/index.html. For policy information considered sensitive, the documents will be identified as such in the ADL and made available through the Contracting Officer.

(c) Definitions

(1) IT resources means any hardware or software or interconnected system or subsystem of equipment, that is used to process, manage, access, or store electronic information.

(2) NASA Electronic Information is any data (as defined in the Rights in Data Clause of this contract) or information (including information incidental to contract administration, such as financial, administrative, cost or pricing, or management information) that is processed, managed, accessed or stored on an IT system(s) in the performance of a NASA contract.

(3) IT Security Management Plan -- This plan shall describe the processes and procedures that will be followed to ensure appropriate security of IT resources that are developed, processed, or used under this contract.

(4) IT Security Plan – this is a FISMA requirement; see the ADL for applicable requirements.

Within 30 days after contract award, the Contractor shall develop and deliver an IT Security Management Plan. The delivery address and approval authority will be included in the ADL. All contractor personnel requiring physical or logical access to NASA IT resources must complete NASA's annual IT Security Awareness training. Refer to the IT Training policy located in the IT Security website at https://itsecurity.nasa.gov/policies/index.html.

(d) The Contractor shall afford Government access to the Contractor's and subcontractors' facilities, installations, operations, documentation, databases, and personnel used in performance of the contract. Access shall be provided to the extent required to carry out a program of IT inspection (to include vulnerability testing), investigation and audit to safeguard against threats and hazards to the integrity, availability, and confidentiality of NASA Electronic Information or to the function of IT systems operated on behalf of NASA, and to preserve evidence of computer crime.

(e) At the completion of the contract, the contractor shall return all NASA information and IT resources provided to the Contractor during the performance of the contract in accordance with retention documentation available in the ADL. The Contractor shall provide a listing of all NASA

Electronic information and IT resources generated in performance of the contract. At that time, the Contractor shall request disposition instructions from the Contracting Officer. The Contracting Officer will provide disposition instructions within 30 calendar days of the contractor's request.

(f) The Contracting Officer may waive specific requirements of this clause upon request of the contractor. The Contractor shall provide all relevant information requested by the Contracting Officer to support the waiver request.

The Contractor shall insert this clause, including this paragraph in all subcontracts that process, manage, access or store NASA Electronic Information in support of the mission of the Agency.

(End of clause)

I.157 NFS 1852.215-84 OMBUDSMAN. (OCT 2003) -- ALTERNATE I (JUN 2000)

(a) An ombudsman has been appointed to hear and facilitate the resolution of concerns from offerors, potential offerors, and contractors during the preaward and postaward phases of this acquisition. When requested, the ombudsman will maintain strict confidentiality as to the source of the concern. The existence of the ombudsman is not to diminish the authority of the Contracting Officer, the Source Evaluation Board, or the selection official. Further, the ombudsman does not participate in the evaluation of proposals, the source selection process, or the adjudication of formal contract disputes. Therefore, before consulting with an ombudsman, interested parties must first address their concerns, issues, disagreements, and/or recommendations to the Contracting Officer for resolution.

(b) If resolution cannot be made by the Contracting Officer, interested parties may contact the installation ombudsman:

Mr. Kelvin M. Manning.
Mail Code: AA-B,
Kennedy Space Center, FL 32899
Telephone Number 321-867-7246
FAX: 321-867-8807
e-mail: Kelvin.M.Manning@nasa.gov

Concerns, issues, disagreements, and recommendations which cannot be resolved at the installation may be referred to the NASA ombudsman, the Director of the Contract Management Division, at 202-358-0445, facsimile 202-358-3083, e-mail james.a.balinskas@nasa.gov. Please do not contact the ombudsman to request copies of the solicitation, verify offer due date, or clarify technical requirements. Such inquiries shall be directed to the Contracting Officer or as specified elsewhere in this document.

(c) If this is a task or delivery order contract, the ombudsman shall review complaints from contractors and ensure they are afforded a fair opportunity to be considered, consistent with the procedures of the contract.

(End of clause)

I.157.1 NFS 1852.215-85 PROPOSAL ADEQUACY CHECKLIST (MAR 2014)

Reference attachment J-22 for the proposal adequacy checklist

I.158 NFS 1852.228-75 MINIMUM INSURANCE COVERAGE. (OCT 1988)

The Contractor shall obtain and maintain insurance coverage as follows for the performance of this contract:

(a) Worker's compensation and employer's liability insurance as required by applicable Federal and state workers' compensation and occupational disease statutes. If occupational diseases are not compensable under those statutes, they shall be covered under the employer's liability section of the insurance policy, except when contract operations are so commingled with the Contractor's commercial operations that it would not be practical. The employer's liability coverage shall be at least $100,000, except in States with exclusive or monopolistic funds that do not permit workers' compensation to be written by private carriers.

(b) Comprehensive general (bodily injury) liability insurance of at least $500,000 per occurrence.

(c) Motor vehicle liability insurance written on the comprehensive form of policy which provides for bodily injury and property damage liability covering the operation of all motor vehicles used in connection with performing the contract. Policies covering motor vehicles operated in the United States shall provide coverage of at least $200,000 per person and $500,000 per occurrence for bodily injury liability and $20,000 per occurrence for property damage. The amount of liability coverage on other policies shall be commensurate with any legal requirements of the locality and sufficient to meet normal and customary claims.

(d) Comprehensive general and motor vehicle liability policies shall contain a provision worded as follows:

"The insurance company waives any right of subrogation against the United States of America which may arise by reason of any payment under the policy."

(e) When aircraft are used in connection with performing the contract, aircraft public and passenger liability insurance of at least $200,000 per person and $500,000 per occurrence for bodily injury, other than passenger liability, and $200,000 per occurrence for property damage. Coverage for passenger liability bodily injury shall be at least $200,000 multiplied by the number of seats or passengers, whichever is greater.

(End of clause)

I.159 NFS 1852.234-2 EARNED VALUE MANAGEMENT SYSTEM. (NOV 2006) -- ALTERNATE I (NOV 2006)

NFS 1852.234-2, Alt I may be applicable to ID/IQ task orders for developmental engineering support services valued at $20M or more. Where applicable, specific EVM requirements and deliverables will be coordinated at the task order level.

(a) In the performance of this contract, the Contractor shall use -

(1) An Earned Value Management System (EVMS) that has been determined by the Cognizant Federal Agency to be compliant with the EVMS guidelines specified in the American National Standards Institute (ANSI) /Electronic Industries Alliance (EIA) - 748 Standard, Industry Guidelines for Earned Value Management Systems (current version at the time of award) to manage this contract; and

(2) Earned Value Management procedures that provide for generation of timely, accurate, reliable, and traceable information for the Contract Performance Report (CPR) required by the contract.

(b) If, at the time of award, the Contractor's EVMS has not been determined by the Cognizant Federal Agency to be compliant with the EVMS guidelines, or the Contractor does not have an existing cost/schedule control system that is compliant with the guidelines in the ANSI/EIA-748 Standard (current version at the time of ward), the Contractor shall apply the system to the contract and shall take timely action to implement its plan to be compliant with the guidelines. The Government will not formally validate/accept the Contractor's EVMS with respect to this contract. The use of the Contractor's EVMS for this contract does not imply Government acceptance of the Contractor's EVMS for application to future contracts. The Government will monitor compliance through routine surveillance.

(c) The Government will conduct Integrated Baseline Reviews (IBRs). Such reviews shall be scheduled and conducted as early as practicable, and if a pre-award IBR has not been conducted, a post-award IBR should be conducted within 180 calendar days after contract award, or the exercise of significant contract options, or within 60 calendar days after distribution of a supplemental agreement that implements a significant funding realignment or effects a significant change in contractual requirements (e.g., incorporation of major modifications). The objective of IBRs is for the Government and the Contractor to jointly assess the Contractor's baseline to be used for performance measurement to ensure complete coverage of the statement of work, logical scheduling of the work activities, adequate resourcing, and identification of inherent risks.

(d) Unless a waiver is granted by the Cognizant Federal Agency, Contractor proposed EVMS changes require approval of the Cognizant Federal Agency prior to implementation. The Cognizant Federal Agency shall advise the Contractor of the acceptability of such changes within 30 calendar days after receipt of the notice of proposed changes from the Contractor. If the advance approval requirements are waived by the Cognizant Federal Agency, the Contractor shall disclose EVMS changes to the Cognizant Federal Agency at least 14 calendar days prior to the effective date of implementation.

(e) The Contractor agrees to provide access to all pertinent records and data requested by the Contracting Officer or a duly authorized representative. Access is to permit Government surveillance to ensure that the Contractor's EVMS complies, and continues to comply, with the EVMS guidelines referenced in paragraph (a) of this clause, and to demonstrate-

(1) Proper implementation of the procedures generating the cost and schedule information being used to satisfy the contract data requirements;

(2) Continuing application of the accepted company procedures in satisfying the CPR required by the contract through recurring program/project and contract surveillance; and

(3) Implementation of any corrective actions identified during the surveillance process.

(f) The Contractor shall be responsible for ensuring that its subcontractors, identified below, comply with the EVMS requirements of this clause as follows:

(1) For subcontracts with an estimated dollar value of $50M or more, the following subcontractors shall comply with the requirements of this clause.

Subcontracts shall be identified by individual Task Order..

(2) For subcontracts with an estimated dollar value of less than $50M, the following subcontractors shall comply with the requirements of this clause except for the requirement in paragraph (b), if applicable, to obtain compliance/validation.

Subcontracts shall be identified by individual Task Order.

(g) If the Contractor identifies a need to deviate from the agreed baseline by working against an Over Target Baseline (OTB) or Over Target Schedule (OTS), the Contractor shall submit to the Contracting Officer a request for approval to begin implementation of an OTB or OTS. This request shall include a top-level projection of cost and/or schedule growth, whether or not performance variances will be retained, and a schedule of implementation for the reprogramming adjustment. The Government will approve or deny the request within 30 calendar days after receipt of the request. Failure of the Government to respond within this 30-day period constitutes approval of the request. Approval of the deviation request does not constitute a change, or the basis for a change, to the negotiated cost or price of this contract, or the estimated cost of any undefinitized contract actions.

(End of clause)

I.160 NFS 1852.243-70 ENGINEERING CHANGE PROPOSALS. (OCT 2001) -- ALTERNATE II (SEP 1990)

(a) Definitions.

"ECP" means an Engineering Change Proposal (ECP) which is a proposed engineering change and the documentation by which the change is described, justified, and submitted to the procuring activity for approval or disapproval.

(b) Either party to the contract may originate ECPs. Implementation of an approved ECP may occur by either a supplemental agreement or, if appropriate, as a written change order to the contract.

(c) Any ECP submitted to the Contracting Officer shall include a "not-to-exceed" estimated cost increase or decrease adjustment amount, if any, and the required period of performance adjustment, if any, acceptable to the originator of the ECP. If the change is originated within the Government, the Contracting Officer shall obtain a written agreement with the Contractor regarding the "not-to-exceed" estimated cost and period of performance adjustments, if any, prior to issuing an order for implementation of the change. An ECP accepted in accordance with the Changes Clause of this contract shall not be considered an authorization to the Contractor to exceed the estimated cost in the contract Schedule, unless the estimated cost is increased by the change order or other contract modification.

(d) After submission of a contractor initiated ECP, the Contracting Officer may require the Contractor to submit the following information:

(1) Cost or pricing data in accordance with FAR 15.403-5 if the proposed change meets the criteria for its submission under FAR 15.403-4; or

(2) Information other than cost or pricing data adequate for Contracting Officer determination of price reasonableness or cost realism. The Contracting Officer reserves the right to request additional information if that provided by the Contractor is considered inadequate for that purpose. If the Contractor claims applicability of one of the exceptions to submission of cost or pricing data, it shall cite the exception and provide rationale for its applicability.

(e) If the ECP is initiated by NASA, the Contracting Officer shall specify the cost information requirements, if any.

(End of clause)

I.161 NFS 1852.225-71 RESTRICTION ON FUNDING ACTIVITY WITH CHINA (APR 2011)

(a) Definition - "China" or "Chinese-owned company" means the People's Republic of China, any company owned by the People's Republic of China or any company incorporated under the laws of the People's Republic of China.

(b) Public Laws 112-10, Section 1340(a) and 112-55, Section 539, restrict NASA from contracting to participate, collaborate, coordinate bilaterally in any way with China or a Chinese-owned company using funds appropriated on or after April 25, 2011. Contracts for commercial and non developmental items are exempted from the prohibition because they constitute purchase of goods or services that would not involve participation, collaboration, or coordination between the parties.

(c) This contract may use restricted funding that was appropriated on or after April 25, 2011. The contractor shall not contract with China or Chinese-owned companies for any effort related to this contract except for acquisition of commercial and non-developmental items. If the contractor anticipates making an award to China or Chinese-owned companies, the contractor must contact the contracting officer to determine if funding on this contract can be used for that purpose.

(d) Subcontracts - The contractor shall include the substance of this clause in all subcontracts made hereunder.

(End of clause)

I.162 NFS 1852.225-74 NOTIFICATION PRIOR TO ACQUIRING INFORMATION TECHNOLOGY SYSTEMS FROM ENTITIES OWNED, DIRECTED OR SUBSIDIZED BY THE PEOPLE'S REPUBLIC OF CHINA (JUNE 2013)(DEVIATION)

(a) Definitions –

"Acquire" means procure with appropriated funds by and for the use of NASA through purchase or lease.

"Entity owned, directed or subsidized by the People's Republic of China" means any organization incorporated under the laws of the People's Republic of China.

"Information Technology (IT) System" means the combination of hardware components, software, and other equipment to make a system whose core purpose is to accomplish a data processing need such as the automatic acquisition, storage, analysis, evaluation, manipulation, management, movement, control, display, switching, interchange, transmission or reception of data. IT systems include ground systems in support of flight hardware. IT systems do not include—

(i) Systems acquired by a contractor incidental to a contract;

(ii) Imbedded information technology that is used as an integral part of the product, but the principal function of which is not the acquisition, storage, analysis, evaluation, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. For example, HVAC (heating, ventilation, and air conditioning) equipment such as thermostats or temperature control devices, and medical equipment where information technology is integral to its operation, are not information technology systems;

(iii) Services in support of IT systems, such as help desk services; or

(iv) Flight hardware, which includes aircraft, spacecraft, artificial satellites, launch vehicles, balloon systems, sounding rockets, on-board instrument and technology demonstration systems, and equipment operated on the International Space Station; as well as prototypes, and engineering or brass boards created and used to test, troubleshoot, and refine air- and spacecraft hardware, software and procedures.

(b) Section 516 of the Consolidated and Further Continuing Appropriation Act, 2013 (Pub. L.113-6), requires NASA's Office of the Chief Information Officer (OCIO) to assess the risk of cyber-espionage or sabotage of an information technology (IT) system that is produced, manufactured, or assembled by an entity owned, directed or subsidized by the People's Republic of China (PRC). The Government retains the right to reject any IT system tendered for acceptance under this Contract, without any further recourse by, or explanation to, the Contractor, if the Government determines the IT system, in whole or in part, presents an unacceptable risk to national security.

(c) The Contractor shall obtain the approval of the Contracting Officer before acquiring any IT system(s) from entities owned, directed or subsidized by the People's Republic of China under this contract. Any Contractor request to use such items shall include adequate information for Government evaluation of the request, including—

(1) A brief description of the item(s); and
(2) Vendor/manufacturer's company name and address;

(d) The Contracting Officer will provide the list referenced in paragraph (b) to the NASA Office of the Chief Information Officer (OCIO) which will assess the risk of cyber-espionage or sabotage and make a determination if the acquisition of such system is in the national interest. Only items so approved shall be provided under the contract.

(End of clause)

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SECTION J - LIST OF DOCUMENTS, EXHIBITS, AND OTHER ATTACHMENTS

J.1 LIST OF ATTACHMENTS

The following documents are attached hereto and made a part of this contract:

Number	Attachment Title	Notes
J-01	Performance Work Statement (PWS)	
	Appendix A - Data Requirements List/ Data Requirements (DRL/DR)	
	Appendix B - Applicable Documents	
	Appendix C - Laboratories and Developmental Shops Descriptions	
	Appendix D - Technology Readiness Levels (TRLs)	
	Appendix E - Government Support Systems Hardware and Software Resources	
	Appendix F - Engineering Systems IT Security Component List	
	Appendix G - Enhancements and Implementation Approaches	
J-02	Task Order Summary	
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J-04	Task Order Pricing Rate Schedule	
J-05	Government Furnished Facilities	
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J-08	Installation Accountable Government Property	
J-09	Organizational Conflict of Interest Avoidance Plan	
J-10	Personal Identification Verification	
J-11	Statement of Equivalent Rates for Federal Hires	
J-12	Safety and Health Plan (Revision B)	
J-13	Government Furnished Materials	
J-14	Small Business Subcontracting Plan	
J-15	Quality Management Plan (Revision C)	
J-16	Register of Davis Bacon Wage Determination and Fringe Benefits	
J-17	Register of Wage Determinations Under the Service Contract Act	
J-18	Glossary and Acronyms	
J-19	DD 254 Department of Defense Contract Security Classification Specification	
J-20	Mentor Protégé Agreement	
J-21	Informational Instructions Regarding the Process for Accomplishing Contractor 3rd-Party Work (C3PW) On KSC	
J-22	NFS 1852.215-85 Proposal Adequacy Checklist (clause I.157.1)	

(End of clause)

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ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-01
PERFORMANCE WORK STATEMENT

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INTRODUCTION

This Performance Work Statement (PWS) and all documents attached or referenced herein define the Government's requirements for the Contractor to provide engineering products and services for the National Aeronautics and Space Administration (NASA) at the Kennedy Space Center (KSC). Section 1.0 of this PWS describes the baseline requirements of the contract necessary to support an institutional engineering capability at NASA/KSC.

The baseline requirements include the Contractor's management and administration, safety and mission assurance, and information technology and data management activities necessary to perform this contract; maintenance of assigned laboratories and developmental shops; CAD/CAE administration; configuration and data management; and engineering systems IT security.

Section 2.0 of this PWS describes the indefinite delivery/indefinite quantity (ID/IQ) basis scope of work available for programmatic customers to utilize. All requirements pursuant to Section 2.0 will be specifically authorized by task orders issued in accordance with the terms of the Contract. The Contractor shall perform ID/IQ work within the following general range of activities:

- Engineering Development – perform design and development of ground systems and equipment for handling, test, checkout, servicing and other ground processing of launch vehicles and spacecraft/payloads.
- Space Flight Systems Engineering – provide engineering and analysis support to NASA-led activities during the lifecycle phases of launch vehicle and spacecraft/payload systems and subsystems.
- Technology Development – perform science and technology development to address assigned KSC mission requirements and operations needs for immediate response, life cycle cost reduction, and future Agency and KSC needs.
- Laboratories and Developmental Shops Operations - provide operational services from assigned laboratories and developmental shops.
- Technical Services – provide cross-cutting services supporting the performance of the above work.

The Contractor shall provide NASA/KSC with services that are safe, reliable, and affordable while ensuring a healthy work environment that minimizes risk and maximizes mission success.

1.0 BASELINE REQUIREMENTS

1.1 CONTRACT MANAGEMENT

The Contractor shall institute and maintain an effective, efficient, and responsive organization responsible for management and oversight of Contractor personnel, other contract resources, contract performance, deliverables, and cost.

1.1.1 CONTRACT ADMINISTRATION

The Contractor shall perform and integrate business and administrative functions to meet the reporting requirements of this contract per the Data Requirements (DR) List, Appendix A.

The Contractor is responsible and accountable for achieving the required results based upon their approach, their internal processes, and compliance with NASA/KSC procedural requirements and applicable documentation, Appendix B.

The Contractor shall provide and maintain contract management systems for planning, organizing, implementing, directing, controlling, and reporting of activities required by this contract. These systems shall be adequate to accomplish project safety, technical, schedule, and cost objectives.

The Contractor shall provide a Contract Management Plan (DR001) which defines and integrates contract work activities and requirements across the contract, including subcontractor efforts. The Contractor's management structure shall fully integrate related plans, including those subcontract plans with an annual contract value of $5,000,000 or more.

The Contractor shall provide a plan identifying a management approach to innovations pertaining to Laboratories and Developmental Shops in accordance with the Laboratories and Developmental Shops Innovation Report (DR002).

The Contractor shall provide and update a management system capable of capturing and reporting the data required to develop and maintain the following Data Requirements documents:
(DR003), Advance Notification of Workforce Reductions Report
(DR004), Quarterly Contractor Workforce Report
(DR005), Quarterly Summary of 3rd Step Grievances and Arbitrations Report

The Contractor shall provide and maintain an electronic Work Breakdown Structure (WBS) in accordance with Work Breakdown Structure and Dictionary (DR006).

The Contractor shall alert the Contracting Officer's Representative (COR) and the Contracting Officer (CO) of any problems that may impact the timely, cost-effective, and safe delivery of quality products and services under this contract.

1.1.2 MANAGEMENT INFORMATION SYSTEM

The Contractor shall provide, update and maintain an electronic, integrated Management Information System (MIS) with capabilities for planning, managing resources, and authoring, controlling, scheduling, integrating, approving, documenting, tracking and monitoring contract activities. The MIS shall have interoperability among all management, operations, administrative, and financial systems.

The Contractor shall provide a MIS capable of generating, transmitting, receiving, and retrieving digital information required for the execution of tasks as well as the capture and archival of data produced by the Government and contract operations.

The Contractor shall develop and maintain documentation that reflects the current and future state configuration of the Contractor's MIS architecture, including both Contractor provided and Government furnished applications. The Contractor shall provide the Government with web-based network accessible, read-only access to the Contractor's MIS, except where "write" capability is required for Request for Proposal (RFP) and Task Order (TO) generation. The Contractor shall provide: query capability

for the MIS, a customer interface, and formal and informal training as well as user guides needed for Contractor personnel and the Government to utilize the Contractor's MIS.

The Contractor shall respond to the Government's questions, problems, and requests for access associated with the Contractor's MIS. The Contractor shall provide problem-tracking for continuous improvement of MIS performance. The Contractor shall ensure the data contained in the Contractor's MIS is current, accurate, complete, and compatible with Microsoft Office 2007 products or future versions as determined by the Government.

The Contractor shall perform continuous assessment and improvement of MIS performance and architecture to ensure efficiency and performance. The Contractor shall obtain Government approval for modifications prior to implementation.

1.1.3 RISK MANAGEMENT

The Contractor shall develop and implement management approaches (including the criteria, methods, and procedures) for identifying, analyzing, planning, tracking, mitigating, controlling, communicating, and documenting contract related risks associated with:

- Contract transition/phase-in
- Contract administration
- Performance of PWS requirements
- Accomplishment of task orders
- Annual staffing plans vs. projected workloads

The Contractor shall develop, implement, and maintain a Risk Management Plan (DR007) in accordance with NPR 7120.5, NASA Space Flight Program and Project Management Requirements (Section 4.2, Risk Management) and NPR 8000.4, Agency Risk Management Procedures and Guidelines. The Risk Management Plan shall provide an organized and systematic decision making process that efficiently manages risks associated with contractor activities.

1.1.4 MANAGEMENT CONTROL FUNCTIONS

The Contractor shall perform contract management control functions including:

- Developing and implementing policy and planning consistent with agency, program and center directives, policies, operating procedures and requirements
- Assessing and reporting performance to plan
- Managing contract efforts to meet technical, cost, schedule, and safety requirements
- Establishing a process to develop, update and track Memoranda of Understandings (MOUs), Memoranda of Agreements (MOAs), Associate Contractor Agreements (ACAs) and agreements with other contractors
- Developing and tracking metrics and other data to measure the overall contract performance and progress
- Coordinating lessons learned and implementing resultant findings

The Contractor shall utilize existing standardized plans, practices, policies, procedures, and agreements developed and used by contractors and government personnel for ongoing work transitioned from other contracts. The Contractor shall comply with these existing plans, practices, policies, procedures and agreements until ongoing work transitioned from other contracts is completed, modified or terminated.

The Contractor shall revise existing plans, practices, policies, procedures and agreements to reflect strategies for mission success and operational efficiency and shall make any necessary corrections or revisions within one year of contract start. The Contractor shall obtain Government approval for modifications or cancellations to existing plans, practices, policies, and procedures. Understandings and agreements between the Contractor and other contractors do not require Government approval.

The Contractor shall document lessons learned in the NASA Lessons Learned Information System (LLIS) database in accordance with NPR 7120.5, NASA Space Flight Program and Project Management Requirements, NPR 8621.1, NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping, and NPR 7120.6, Lessons Learned Process.

The Contractor's senior management team shall participate in weekly meetings with the Government to discuss contract performance issues, process improvements, risks and related issues, corrective actions, recovery plans, and other details of contract operations. These informal meetings will be attended by the CO, the COR, technical representative(s), and Resources Management Office (RMO) representative(s).

Senior Contractor personnel shall participate in informal monthly meetings with Senior Government managers to discuss accomplishments, problems, risks and related issues, corrective actions, and other details of contract operations.

The Contractor shall present a quarterly contract review to the Government in accordance with its Internal Surveillance Plan (DR008). Content of these reviews shall include: technical issues and accomplishments, analysis of risks, cost and schedule performance, including performance metrics and any corrective actions, consistent with the data contained in the Internal Surveillance Report (DR009).

1.1.5 FINANCIAL MANAGEMENT

The Contractor shall utilize and maintain a financial management system with adequate internal checks, balances and audit steps to isolate and identify erroneous or incomplete data and procedural deviations. The system shall be flexible to ensure compliance with the variety of cost charging and reporting requirements of the Government based on category of customer and sources of funds. The Contractor shall notify the Government immediately upon detection of significant errors in their accounting system that impact work and/or costs reported.

The Contractor shall provide monthly and quarterly accumulated expenditures and projections of program costs and workforce utilization in accordance with Contractor Financial Management Report, NASA Form 533M and NASA Form 533Q, including all subcontractors with a total annual subcontract value of $5,000,000 or more, as specified in the data requirements.

The Contractor shall develop and submit integrated technical cost and schedule data, consistent with Government budget schedules, financial planning as required to support the Government budget process to include but not limited to multi-year Planning, Programming, and Budgeting Execution (PPBE) calls, annual operating plan calls, Information Technology (IT) budget calls, as well as task proposals/status and special or ad hoc requests for budget impacts and End of Year estimates. The format and content of the Contractor's inputs and supporting rationale shall be in accordance with the budget or special request guidelines, and formats specified by the Government.

The Contractor shall provide an automated, network accessible, ad hoc query capability to permit access to specific Government users, as identified by the Government for cost, schedule and status of work at the level of detail reported in individual task orders, specific customers, unique projects, WBS and NASA Form 533 reports. The system shall archive and reproduce historical month-end financial data for the duration of the contract. The Contractor shall participate in financial reviews with the Government to discuss cost planning, phasing and performance of the overall progress of the Contractor, subcontractors and vendors as required by the Government. These reviews may include both formal and informal discussions with multiple customers requiring multiple products/reports, sometimes due concurrently. The Contractor shall provide a recovery plan for any task, activity or project for which the Contractor has responsibility when the estimate exceeds predetermined established cost or schedule plans.

The Contractor shall develop and maintain the following financial data requirements.

- DR010, Contractor Financial Management Report, NASA Form 533M & NASA Form 533Q
- DR011, e533 Flat File
- DR012, Annual Phased Contract Operating Plan and Negotiated Estimated Cost (NEC) Report
- DR013, Rate-Volume Variance Analysis Report
- DR014, Direct and Indirect Rates Report and Review
- DR015, Prime and Subcontractor Contract Value (CV) Status Report and Review
- DR016, Annual IT NASA Headquarters and Special IT Budget Report

The Contractor shall reconcile and periodically audit all data contained in the data requirements list to the Contractor's financial management systems.

1.1.6 ENVIRONMENTAL COMPLIANCE

The Contractor shall ensure that activities affecting the environment are in compliance with NPD 8500.1, NASA Environmental Management, and NPR 8570.1, Energy Efficiency and Water Conservation.

The Contractor shall develop and maintain an Environmental Management Plan (DR017) which defines the Contractor's internal policies, procedures, and guidelines for environmental compliance.

The Contractor shall meet the Government's environmental, natural resource and cultural requirements in accordance with KNPR 8500.1, KSC Environmental Requirements.

The Contractor shall meet the requirements of NASA's Sustainable Acquisition Program in accordance with NPR 8530.1, Affirmative Procurement Program and Plan for Environmentally Preferable Products.

The Contractor shall support the Government's Environmental Management System (EMS) in accordance with NPR 8553.1, NASA Environmental Management System, including environmental management plans, targets and objectives consistent with KSC-PLN-1912, KSC Environmental Management System Plan.

The Contractor shall ensure that employees who are responsible for hazardous waste management activities receive annual hazardous waste training and, where applicable, have job descriptions that meet the requirements of 40 CFR 265.16, Protection of Environment: Personnel Training.

The Contractor shall incorporate sustainable elements and practices into operations in accordance with Executive Order 13423, Strengthening Federal Environmental, Energy and Transportation Management, and Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance. Sustainable elements shall include areas of energy efficiency, use of renewable energy, reduction in water consumption intensity, acquisition of green products and services, pollution prevention, waste prevention, recycling and waste diversion, use of alternative fuel vehicles and alternative fuels, and electronic stewardship.

The Contractor shall identify, interpret, and apply new and existing environmental requirements with respect to Contractor operations with concurrence from the Government.

The Contractor shall support the Government environmental program requirements applicable to the Contractor, including: environmental data calls; support to internal inspections and audits; permit applications and environmental permits; and technical support to Contractor operations to meet environmental permit and regulatory requirements.

The Contractor shall provide chemical usage and chemical storage records for each calendar year. The Contractor shall comply with data calls from the Government requesting the data and input data into electronic database/spreadsheet provided by the Government.

The Contractor shall perform waste minimization and pollution prevention opportunity assessments such as reducing Toxic Release Inventory (TRI), chemical releases and hazardous waste, as stated in the Environmental Management Plan.

1.1.7 EMERGENCY PREPAREDNESS

The Contractor shall develop, implement, and update an Emergency Preparedness Plan (DR018) in accordance with KNPR 8715.2, Comprehensive Emergency Management Plan. This plan shall integrate the Contractor's approach to emergency

preparedness, response and recovery to provide a safe work environment for the employees.

The Contractor shall identify an employee(s) to be a member(s) of the Damage Assessment and Recovery Team (DART) as directed by the Government Emergency Preparedness Officer upon "Weather Safe" call being issued, the Contractor's representative(s) shall provide a damage assessment to the Government Emergency Preparedness Officer. The damage assessment shall identify the work needed to return the Center to operational status.

1.1.8 SECURITY MANAGEMENT

The Contractor shall develop, update, and implement a Security Management Plan (DR019), in accordance with KNPR 1600.1, KSC Security Procedural Requirements, NPR 1371.2, Procedural Requirements for Processing Requests for Access to NASA Installations or Facilities by Foreign National and U.S. Citizens who are Representatives of Foreign Entities, and Department of Defense (DoD) 5220.22, National Industrial Security Program Operating Manual.

The Contractor shall ensure that all designated Sensitive But Unclassified (SBU) materials are encrypted at rest and during transmission. The Contractor shall utilize the Government Furnished Services, Attachment J-07, to meet data encryption requirements. The Contractor shall identify a SBU designator that will be the Contract's representative to the KSC SBU Officer.

The Contractor shall comply with NPD 1660.1, NASA Counterintelligence (CI) Policy and NPR 1660.1, Counterintelligence/Counterterrorism (CT) Procedural Requirements.

1.1.9 INFORMATION PROTECTION

The Contractor shall develop, update, and implement an export control compliance program and Export Control Plan (DR020) in accordance with NPD 2190.1, NASA Export Control Program. The Contractor shall identify an Export Control Plan focal point that will be the Contractor's representative to support the KSC Export Control Working Group.

The Contractor shall identify required export licenses and submit the application within 30 days of identification. The Contractor shall classify and apply the proper marking on Contractor generated documentation for hardware, software, services, technology development, and data.

The Contractor shall comply with 15 CFR Parts 730-774, Commerce and Foreign Trade, and 22 CFR Parts 120-130, International Traffic in Arms Regulations (ITAR).

The Contractor shall implement privacy information protection in accordance with NPD 1382.17, NASA Privacy Policy, and NPR 1382.1, NASA Privacy Procedural Requirements.

1.1.10 EXTERNAL RELATIONS

The Contractor shall conduct laboratory tours and interviews requested by the Government. The Contractor shall generate and coordinate news releases with the NASA/KSC External Relations Office.

1.1.11 TECHNOLOGY TRANSFER

The Contractor shall establish a Technology Transfer Plan (DR021) and a Technology Transfer Report (DR022) describing the manner in which the Contractor will meet the new technology reporting requirements of the NASA New Technology clause NFS 1852.227-70.

1.2 SAFETY AND MISSION ASSURANCE

The Contractor shall protect the public, NASA/KSC team members, equipment, and property from potential harm resulting from Contractor activities and operations. The Contractor shall assure mission success through safe, reliable, high-quality processes and products.

1.2.1 SAFETY AND MISSION ASSURANCE MANAGEMENT

The Contractor shall develop, implement and update a Safety and Health Plan (DR023) in accordance with NPR 8715.3, NASA General Safety Program Requirements, KNPR 8715.3, KSC Safety Practices Procedural Requirements, and in accordance with Clause H.41, Government Industry Data Exchange Program.

1.2.2 SYSTEM SAFETY

The Contractor shall develop, implement, and maintain a process which ensures the identification of hazards; elimination or risk reduction of hazards; and updates of hazard documentation throughout the life cycle of systems, equipment and operations under the responsibility of the Contractor as documented in the Safety and Health Plan.

The Contractor shall perform system safety analyses in accordance with KNPR 8700.2, KSC System Safety and Reliability Analysis Methodology Procedural Requirements. These analyses shall be submitted for review and approval to NASA/KSC Safety and Mission Assurance.

1.2.3 SOFTWARE SAFETY AND ASSURANCE

The Contractor shall develop, implement and update a software safety and assurance process in accordance with KNPR 8750.1, KSC Software Assurance Procedural Requirements, as documented in its Safety and Health Plan.

1.2.4 OCCUPATIONAL SAFETY

The Contractor shall monitor, as documented in its Safety and Health Plan, activities to ensure compliance with NASA, Occupational Safety and Health Administration (OSHA), and other local, state or federal regulatory agency requirements.

The Contractor shall protect employees from workplace injury and/or illness in accordance with KNPR 8715.3 KSC Safety Practices Procedural Requirements.

The Contractor shall develop, implement and maintain a safety and health program in accordance with the requirements of OSHA Instruction CSP 03-01-003, Voluntary Protection Program (VPP): Policies, and Procedures Manual. As part of the implementation, the Contractor shall submit a VPP Application (DR024) to the Government. Until submission of the VPP Application, the Contractor shall submit quarterly reports regarding readiness activities as part of the Internal Surveillance Report (DR009). The Government will assess the Contractor's implementation for compliance and the Contractor shall address identified discrepancies within six months of release of auditor's findings.

The Contractor shall establish processes, as documented in its Safety and Health Plan, for reporting and investigating mishaps in accordance with KNPR 8715.3, KSC Safety Practices Procedural Requirements.

The Contractor shall submit summary data on mishaps in the Safety Statistics Record (DR025) in accordance with KNPR 8715.3, KSC Safety Practices Procedural Requirements.

1.2.5 OPERATIONAL SAFETY

The Contractor shall develop, implement and maintain, as documented in its Safety and Health Plan, a process in which testing, operations, and maintenance activities are assessed for hazards and performed, in accordance with KNPR 8715.3, KSC Safety Practices Procedural Requirements.

The process shall provide for hazardous operation assessment, surveillance, hazardous procedure review, and risk assessments associated with deviations from procedures or safety and health requirements.

The Contractor shall perform non-routine hazardous operations/tests in accordance with KSC Center Director letter documenting Interim Policy for Non-routine Hazardous Operations/Tests. This policy shall be effective until formal requirements are incorporated into KNPR 8715.3, KSC Safety Practices Procedural Requirements.

The Contractor shall assure work is performed by trained, certified and licensed personnel; verify work is performed per written procedures; and assure tools, equipment and resources are appropriate for the activity: all in accordance with KNPR 8715.3, KSC Safety Practices Procedural Requirements.

The Contractor shall comply with NASA-STD-8719.9, Standard for Lifting Devices and Equipment and KNPD 8719.9, Examination and Licensing of KSC Operators of Special Heavy Equipment, Facility Cranes or Hoists.

The Contractor shall comply with NASA Safety Standard ~~NSS 1740.12~~ NASA-STD 8719.12, Safety Standard for Explosives, Propellants, and Pyrotechnics.

1.2.6 INDUSTRIAL HYGIENE

The Contractor shall develop, update and implement an industrial hygiene process, as documented in the Safety and Health Plan, in accordance with the requirements of KNPD 1800.2, KSC Hazard Communication Program, KNPR 1840.19, KSC Industrial Hygiene Program, KNPR 1820.3, KSC Hearing Loss Prevention Program, and KNPR 1820.4, KSC Respiratory Protection Program. The Contractor's administrative management of the industrial hygiene process shall be under the oversight of an Industrial Hygienist.

1.2.7 HEALTH PHYSICS

The Contractor shall develop, update and implement a health physics process, as documented in the Safety and Health Plan, in accordance with the requirements of KNPD 1860.1, KSC Radiation Protection Program, KNPR 1860.1, KSC Ionizing Radiation Protection Program, and KNPR 1860.2, KSC Nonionizing Radiation Protection Program. All potentially hazardous ionizing and non-ionizing radiation sources shall be under Radiation Use Authorizations in accordance with KNPR 1860.1 and KNPR 1860.2.

1.2.8 RELIABILITY

The Contractor shall develop and implement a process which ensures the reliability throughout the life cycle of the systems and equipment for which the Contractor is responsible, as documented in its Safety and Health Plan.

The Contractor's process shall include assessments of reliability of systems and equipment for which the Contractor is responsible in accordance with KNPR 8700.2, KSC System Safety and Reliability Analysis Methodology Procedural Requirements. Reliability analyses shall be submitted for review and approval to NASA/KSC Safety and Mission Assurance.

1.2.9 QUALITY

The Contractor shall develop, implement and maintain a management system and Quality Plan (DR026) which is compliant to the requirements of SAE AS 9100, Quality Management Systems Requirements for Aviation, Space and Defense Organizations within twelve months of contract start.

The Contractor shall perform quality functions and activities in accordance with KNPR 8730.2, Quality Assurance Procedural Requirements.

The Government will assess the Contractor's implementation for compliance and the Contractor shall adequately address identified discrepancies within six months of release of auditor's findings.

1.3 INFORMATION TECHNOLOGY AND DATA MANAGEMENT

The Contractor shall develop, operate, maintain, integrate, administer and secure information systems that provide for the management, preparation, publication, control and dissemination of information and data required by this contract.

1.3.1 INFORMATION TECHNOLOGY MANAGEMENT

The Contractor shall develop, update and implement an IT Management Plan (DR027) in accordance with NPR 2800.1, Managing Information Technology. The plan shall also include an assessment and strategy to implement enhancements to Support Systems.

The Contractor shall develop and maintain a IT Management / Software Management Plan (DR027) in accordance with NPR 7120.7, NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements. The Contractor shall comply with NPR 7150.2, NASA Software Engineering Requirements. The Contractor shall comply with NPR 2830.1 NASA Enterprise Architecture Procedures and IT governance processes.

The Contractor shall operate and maintain hardware and software that is required to support the performance of the contract requirements. The hardware and software that will transfer are identified in Appendix E, Government Support Systems Hardware and Software Resources.

The Contractor shall utilize Government furnished services and products during the performance of this contract listed in Attachment J-07, Government Furnished Services. The Contractor shall utilize non-proprietary non-customized, off-the-shelf products and systems where possible and cost effective to the Government.

The Contractor shall ensure that any desktop software tools used by the Contractor shall comply with NASA-STD-2804, Minimum Interoperability Software Suite and NASA-STD-2805, Minimum Hardware Configurations. The Contractor provided IT systems shall be in accordance with the NASA Agency Security Configuration Standards (ASCS).

The Contractor shall operate a user help desk for Contractor managed IT systems. This help desk shall provide services to the Contractor, Government and other users who require access to Contractor managed IT systems. The Contractor shall maintain a problem tracking system as part of the help desk function. The Contractor shall report to the initiator when a problem is resolved.

The Contractor shall ensure that NASA/KSC directories are kept up to date for all Contractor staff located at NASA/KSC and remote sites. The Contractor shall report a summary of the updates in the Internal Surveillance Report (DR009).

1.3.2 IT SECURITY MANAGEMENT

The Contractor shall ensure IT Security compliance for systems that generate, access, store, transmit or process NASA information, regardless of whether the information resides on a Government furnished or a Contractor provided system.

The Contractor shall establish, maintain and implement an IT System Security Plan (ITSSP) (DR029) for all systems developed, processed or operated in performance of this contract in accordance with NPD 2810.1, NASA Information Security Policy. The Contractor shall incorporate IT Security requirements including technical, operational

and management controls at all phases of the System Development Life Cycle (SDLC) in accordance with NPR 2810.1 NASA Security of Information Technology.

The Contractor shall ensure that all software installed on systems is documented and associated with an ITSSP. All software must be assessed and approved by NASA prior to procurement.

The Contractor shall adhere to NASA Federal Information Security Management Act (FISMA) and Office of the Chief Information Officer (OCIO) reporting metrics, including annual ITSSP contingency plan testing and continuous monitoring of ITSSP security controls for adequacy and compliance.

The Contractor shall utilize the Government furnished Agency Security Update Service (ASUS) for its patch management wherever possible, and the NASA System Security Plan Repository Database both listed in Attachment J-07, Government Furnished Services.

The Contractor shall provide support for the installation, configuration, administration, management and monitoring of NASA provided security tools that are required to track, and report the implemented security controls including, operating system configurations, vulnerability management, intrusion detection, antivirus protection and incident identification and reporting.

The Contractor shall adhere to requirements defined in KSC-PLN-2619, Mission Focus Review (MFR) 137 & Waiver Requirements document, for IT and data communication purchases.

The Contractor shall be compliant with the Agency User Authentication requirements for application single sign-on access to all functionality for which the users have permissions.

The Contractor shall utilize the NASA Account Management System to request, approve and provision user's accounts and elevated privileges.

The Contractor shall maintain a consolidated IT system component inventory and data management system to monitor and provide status of the configuration management of IT software/hardware in each ITSSP. The IT system components consolidated inventory shall include hardware, software and licenses for each of the ITSSP's, as defined in Attachment J-18 Glossary and Acronyms.

The Contractor shall provide training for awareness of the security plan policies and procedures for NASA and contractor employees responsible for management and use of Federal computer systems.

The Contractor shall support the certification process as defined in NPR 2810.1 for Low ITSSP.

The Contractor shall support the following Government-led activities:

- Development, verification, and oversight of IT configuration management and control processes to ensure adequate consideration of the potential security risks and impacts.
- Certification and accreditation for High and Moderate ITSSP through third party independent contract assessor.
- Real time access to ITSSP software/hardware through the use of the configuration management and IT security data management system.
- Respond and resolve IT security incidents per NASA requirements.
- Mitigate network vulnerability scan findings per NASA requirements.

1.3.3 RECORDS AND DATA MANAGEMENT

The Contractor shall develop, maintain and implement a Records Management Plan and Annual Summary of Record Holdings (DR030). The Contractor shall comply with KNPD 1440.1, KSC Records Management Programs and NPD 1440.6, NASA Records Management.

The Contractor shall manage Government-owned, Contractor-held records, including legacy Federal records (data created for Government use and delivered to, or falling under the legal control of, the Government) inherited from previous contracts. The Contractor shall provide Government access to Contractor-held Government records and transfer Government-owned data to the Government at the completion or termination of this contract.

1.4 LABORATORIES & DEVELOPMENTAL SHOPS MAINTENANCE

The Contractor shall provide maintenance of assigned laboratories, developmental shops, and associated space as identified in Appendix C, Laboratories and Developmental Shops Descriptions. Maintenance shall encompass personnel safety as well as operational readiness while controlling costs and operational risks.

If a capability is not available, the Contractor shall follow KDP-KSC-P-2779, New Laboratory and Developmental Shop Creation Process to determine if the necessary capability needs to be provided on site.

1.4.1 LABORATORIES & DEVELOPMENTAL SHOPS MANAGEMENT

The Contractor shall manage all maintenance functions identified in Appendix C in accordance with KNPR 8830.1, KSC Facility and Real Property Management Procedural Requirements. The Contractor shall establish, provide access to the Government, and maintain a single work control system to track activities in the laboratories and developmental shops. The Contractor shall maintain and update the Core Technical Capability Laboratory Management System (CTCLMS) for all laboratories and developmental shops in Appendix C. The contractor shall perform general housekeeping of all assigned laboratories as not to interfere with on-going investigations or analyses. The contractor shall perform and/or assist in hurricane preparations for assigned laboratories and developmental shops as necessary to ensure the safety and security of the lab. The contractor shall prepare and package assigned laboratory equipment to support laboratory moves, and shall support equipment setup post-move.

1.4.2 CHEMICAL HYGIENE PLANS

The Contractor shall develop and maintain chemical hygiene plans (CHPs), including chemical databases to include acids/bases flammables and Paint, Oil, and Lubricant (POL) chemical lists of assigned laboratories and developmental shops in accordance with KNPR 8715.3, KSC Safety Practices Procedural Requirements and 29 CFR Part 1910.1450, Occupational Exposure to Hazardous Chemicals in Laboratories.

1.4.3 LABORATORY SAFETY PLANS

The Contractor shall develop and maintain laboratory safety plans of assigned laboratories and developmental shops per KNPD 1800.3, KSC Hazardous Communication Program, and in compliance with OSHA Laboratory Standard 29 CFR 1910.1200.

1.4.4 HAZARDOUS WASTE MANAGEMENT

The Contractor shall perform hazardous waste management functions per ~~8500.1~~ KNPR 8500.1, KSC Environmental Requirements.

1.4.5 SAFETY WALK-DOWNS

The Contractor shall perform quarterly safety walk-downs of assigned laboratories and developmental shops in accordance with KDP-KSC-F-3218, Supervisor Safety Inspection Check Sheet for Mechanical Area, KDP-KSC-F-3219, Supervisor Safety Inspection Check Sheet for Lab Area, and KDP-KSC-F-3217, Supervisor Safety Inspection Check Sheet for Office Area. A list of violations shall be recorded and abated/corrected within 30 days.

1.4.6 SAFETY SHOWERS AND EYEWASH TESTING

The Contractor shall perform weekly functional tests and flushing of safety showers and/or eyewash stations per KDP-KSC-F-3218, Supervisor Safety Inspection Check Sheet for Mechanical Area and KDP-KSC-F-3219, Supervisor Safety Inspection Check Sheet for Lab Area.

1.4.7 FIRE INSPECTIONS

The Contractor shall coordinate schedules and support fire inspections of assigned laboratories and developmental shops.

1.4.8 PERSONAL PROTECTIVE EQUIPMENT (PPE)

The Contractor shall monitor, purchase, and maintain PPE of assigned laboratories and developmental shops per OSHA Personal Protective Equipment 29 CFR 1910.132.

1.4.9 ORIGINAL EQUIPMENT MANUFACTURER (OEM) MAINTENANCE

The Contractor shall prepare Purchase Requests (PRs) or novate existing OEM Maintenance Contracts for assigned and affected equipment. The Contractor shall

schedule, and arrange clearances for OEM maintenance visits for assigned equipment per Attachment J-08, Installation Accountable Government Property. The contractor shall arrange for software maintenance for assigned software per CTCLMS, Core Technical Capabilities Laboratory Management System.

1.4.10 DOCUMENTATION

The Contractor shall prepare and maintain support equipment documentation such as service logs and calibration logs. The Contractor shall prepare and update existing Periodic Maintenance Instructions (PMIs) and, as required, recommend replacement or upgrade of assigned equipment. The Contractor shall maintain documentation of spares, supplies, equipment, and consumables to include annual hardware/software maintenance costs, expected equipment life, projected equipment replacement costs, and consumables costs in accordance with KNPD 1440.1, KSC Records Management Programs.

1.4.11 PREVENTATIVE/ROUTINE/ REPARATIVE MAINTENANCE

The Contractor shall provide preventative, routine, and reparative maintenance for baseline systems and equipment listed in J-08, Installation Accountable Government Property, baseline hardware listed in Baseline Maximo Work Control System and for software listed in CTCLMS, Core Technical Capabilities Laboratory Management System, where no OEM maintenance contract is in place for appropriate maintenance. The Contractor shall follow the vendor/manufacturer recommended maintenance specifications or appropriate maintenance procedures to assure the systems and equipment are in operational state.

1.4.12 CALIBRATION

The Contractor shall assure calibration is performed on all equipment items identified by a metrology number within the Work Control System (excluding items on which calibration is performed via a Task Order in WBS 2.X). The Contractor shall utilize the calibration capabilities provided in J-07, Government Furnished Services. The Contractor shall assure calibration is performed in accordance with KNPR 8730.1, KSC Metrology and Calibration Procedural Requirements.

1.4.13 SPARES/SUPPLIES/CONSUMABLE MANAGEMENT

The Contractor shall identify, acquire, and manage the necessary spares, supplies, equipment, consumables, and other items necessary to sustain the functional capabilities and activities within the laboratories and developmental shops. The Government will reserve the right to prioritize all acquisitions.

1.4.14 PROPERTY CUSTODIANSHIP

The Contractor shall serve as property custodian per KNPR 4000.1, Supply and Equipment Systems Manual and NPR 4200.2 Equipment Management Manual, for assigned equipment per Attachment J-08, Installation Accountable Government Property. The Contractor shall perform accessing, shipping, excessing, and handling of assigned property.

1.4.15 PRESSURE VESSELS/SYSTEMS (PV/S)

The Contractor shall maintain assigned Pressure Vessels/Systems (PV/S) in accordance with: NPD 8710.5, Policy for Pressure Vessels and Pressurized Systems; KNPR 8715.3, KSC Safety Practices Procedural Requirements; NASA-STD-8719.17, NASA Requirements for Ground-Based Pressure Vessels and Pressurized Systems; American Society of Mechanical Engineers (ASME) pressure vessel or piping standards, National Board Inspection Code (NB-23) and 49 CFR, Transportation. This responsibility includes management of a PV/S certification program for assigned fixed and mobile PV/S. The Contractor shall implement and maintain certification and In-Service Inspection (ISI) plans for PV/S assigned to the Contractor listed in Attachment J-06, Government Furnished Pressure Vessels/Systems, or assigned by the Government. The Contractor shall perform inspections and tests, including recertification, maintain operating records, reevaluate certification status when changes occur, maintain certification data packages as official quality records, update configuration drawings as required, perform stress analysis, perform or arrange for the performance of material evaluation, arrange non-destructive tests including ultrasonic, penetrant, radiographic evaluation and acoustic emission testing in accordance with KNPR 8715.3, KSC Safety Practices Procedural Requirements. The Contractor shall assure the NASA PV/S database is current for Contractor-assigned PV/S. The Contractor shall implement and maintain a Department of Transportation (DOT) Compliance Plan for assigned propellants and life support mobile and portable equipment. The Contractor shall revise and maintain mobile and portable equipment marking plans in accordance with 49 CFR, Transportation.

1.5 CAD/CAE ADMINISTRATION

The Contractor shall administer the KSC CAD/CAE environment by performing the following developmental, operational, maintenance and application administration tasks:

- Support NASA development of and updates to KSC-NE-9068 Pro/Engineer Wildfire Modeling Standards and Practices: Top-Down Design Methodology.
- Manage the configurations of the KSC Pro/E, AutoCAD Electrical and Altium CAD/CAE tools and provide the configurations to the Kennedy Data Center (KDC) for deployment to production.
- Manage the development and implementation of product enhancements, configurations, application tuning, customization, and application administration to Pro/E, MathCAD, AutoCAD Electrical, Altium and NASTRAN per the vendor's recommended schedules and as approved by NASA. Utilization of web-based tools and languages such as JAVA, Pro/Tool-Kit and J-Link are required to perform this task.
- Manage and upgrade the Pro/E and AutoCAD Electrical Modeling Standards. These standards include the templates (start parts, drawing formats, and symbols), configuration options, color definitions, map keys, import/export definitions and requirements for CATIA, IGES, STEP, DXF (2D and 3D), ProductView, STL, NX, OBJ and modelCheck.
- Manage and upgrade the KSC Pro/E and AutoCAD Electrical libraries for Standard Parts (parts defined by industry and government standards), Common Parts (parts defined by component specifications) and Unique Parts.
- Manage and upgrade Pro/E Solid Modeling Standards files. These files are outside the Design Data Management System (DDMS) environment and provide for the

conformance to adopted standards and proper functioning DDMS environment. The Contractor shall provide these files to government and industry partners.

- Maintain and upgrade delivery scripts required for acceptance of CAD/CAE products from Government and industry partners into DDMS and compliant with the KSC IT security environment.
- Perform application tuning, configuration and application administration support functions for engineering tools and activities for the DDMS and CAD/CAE tools (Pro/E, MathCAD®, AutoCAD® Electrical, NASTRAN, etc.) facilitating compliance with organizational policies, procedures, and standards.
- Coordinate with the KDC for CAD/CAE application to operating system and server related issues.

1.6 CONFIGURATION AND DATA MANAGEMENT

The Contractor shall develop, update and implement Configuration and Data Management (CDM) Plan (DR031) in accordance with, NASA-STD-0005 NASA Configuration Management (CM) Standards, KNPR-8040.1 KSC Configuration Management Procedural Requirements, ~~KSC-CMP-2301 Constellation Ground Operations Level V Subsystems Configuration Management and Data Management Plan~~, GSDO-PLN-1001 GSDO Program Information and Configuration Management (ICM) Plan, and ANSI/GEIA-859, Data Management.

The Contractor shall provide an Engineering CDM Receipt and Release Desk to perform the following:

- Release and distribute engineering products and data including CAD models/drawings, analyses, and plans in accordance with KDP-P-2718, Design and Development Engineering Documentation Electronic Approval and Release Process per KTI-2718, KSC DDMS Notification, Peer Review, Signatory Approval and Release.
- Perform data, documentation, and drawing reviews, checks and validations to ensure conformance with standards, GP-435, Engineering Drawing Practices/Volumes I and II and NASA-STD-(I)-0007 NASA Computer Aided Design Interoperability Standard.
- Provide administrative and Control Board secretariat support for the coordination of contractor led and government led design and document reviews. This includes receipt, processing and coordination of external support, collection organization and consolidation of comments and Review Item Discrepancies (RIDs) for final Government disposition, returning the approved comments and RIDS to the review lead, and archiving the consolidated and disposition comments with associated products and/or projects.
- Manage the assignment of drawing and document numbers per KDP-P-2712, Engineering Directorate Document/Drawing Number Request.

The Contractor shall provide user account and access control to the ESMD Integrated Collaborative Environment (ICE) to government and industry partners supporting the Constellation Program.

The Contractor shall support the government team developing and implementing the Product Definition Data (PDD) and Product Data Management (PDM) tool set for DDMS. The Government will provide the KDC, which hosts the KSC DDMS test and production environments. The Contractor shall administer the KSC PDD and PDM environment by

performing the following developmental, operational, maintenance and system administration tasks:

- Manage the deployment, implementation and operations of the KSC DDMS development environment outside of the KDC.
- Manage the development and implementation of product enhancements, configurations, application tuning, configuration and application administration and customizations to DDMS per the vendor's recommended schedules and as approved by NASA. Utilization of tools and languages such as JAVA, JSP, PTC Toolkit, Info*Engine and RBInfo are required to perform this task.
- Develop and document product enhancements, and customizations on the Development and Test systems prior to implementation on the Production system.
- Provide help desk, end user assistance, and training support to government and industry partners, vendors and suppliers in utilizing DDMS.
- Provide user account and access control to DDMS.
- Coordinate with the KDC for DDMS application to operating system and server related issues.

The Contractor shall utilize government provided software configuration management tools (currently IBM Clearcase) for software configuration management.

The Contractor shall update DDMS with current PDD status for products during design, manufacturing, test and turnover.

1.7 ENGINEERING SYSTEMS IT SECURITY

The Contractor shall provide support in implementing IT Security requirements for the hardware and software listed in Appendix F, Engineering Systems IT Security Component List, in accordance with PWS section 1.3.2, IT Security Management.

The Contractor shall utilize NASA provided Commercial Off The Shelf (COTS) software to maintain a consolidated system inventory for all hardware, software and licenses that exists within each of the Engineering Directorate Information Technology System Security Plans (ITSSP's).

2.0 IDIQ REQUIREMENTS

2.1 ENGINEERING DEVELOPMENT

The Contractor shall provide engineering services, support and products for current and future NASA programs and special projects for other customers.

The Contractor shall provide engineering hardware and software products and services for specific mission requirements of current and future NASA programs, primarily for operational ground systems and ground support equipment (as defined in NASA-STD-5005, Standard For The Design And Fabrication Of Ground Support Equipment) used in vehicle processing, payload processing, launch and recovery, and supporting activities. The Contractor shall also provide products and services for prototypes, mockups, test articles, training systems, laboratory test equipment, and research instruments. The Contractor

shall perform development tasks to include: requirements definition and management, technology assessment, trade studies, concept development, design, fabrication and assembly, integration, testing, analyses, installation, verification, validation, documentation, delivery and sustaining engineering.

The Contractor shall provide design products and services in areas such as propellants, gases, electrical power, systems engineering and integration, reliability, human factors, cryogenics, hypergolic, pneumatics, hydraulics, fiber optics, communication systems, information technology security systems, sensors, instrumentation, hazardous gas detection, intelligent systems, modeling and simulation, computer hardware, software, networking, system safety, maintainability, contamination control, control systems, mechanical systems, structures, stress and load analyses, vibroacoustic analyses, thermal analyses, computational fluid dynamics, data analyses, industrial engineering, materials science, electronic design, data acquisition, metrology, and atmospheric science. The Contractor shall apply current state of the industry design techniques in the development of new systems and equipment. The Contractor shall perform development of modifications to existing ground systems and equipment.

The Contractor shall meet the requirements of NPR 7123.1, NASA Systems Engineering Processes and Requirements, for the design and development of systems. Software produced under this contract shall be developed, documented and maintained in accordance with NPD 2820.1, NASA Software Policies and NPR 7150.2, NASA Software Engineering Requirements.

2.1.1 TRADE STUDIES

The Contractor shall perform concept and design trade studies to recommend technical, risk, cost, and schedule approaches to fulfill requirements. Technical assessments shall establish or determine impacts including but not limited to: schedules, costs, processes, procedures, performance, safety, environment, reliability, hardware, software, operability and maintainability. The Contractor shall provide documentation of the results of studies and assessments performed.

2.1.2 REQUIREMENTS MANAGEMENT

The Contractor shall perform requirements management tasks through the application of NASA programs' change management processes and tools to develop, track and implement changes to baseline requirements. The Contractor shall participate in requirements reviews with Government engineering development and operations personnel in accordance with KDP-P-2713, Technical Review Process.

The Contractor shall decompose provided requirements into lower level, and derived requirements such that they can be transformed into design solutions. The Contractor shall perform technical assessments and evaluations of requirements to include an implementation cost estimate, installation and verification requirements, and any necessary trade studies. The Contractor shall provide documentation of the results of requirements management tasks.

2.1.3 DESIGN

The Contractor shall perform design and development, either as part of blended NASA/Contractor teams or as teams entirely consisting of the Contractors own workforce. The Contractor shall provide complete design packages, or parts thereof, per KDP-P-2713, Technical Review Process. A complete design package is defined as the technical effort required to convert concepts into the drawings and specifications necessary for procurement, fabrication, installation, testing, operation, and maintenance of new or modified systems and equipment. In addition to drawings and specifications, a complete design package contains products as listed in KDP-P-2713, Technical Review Process. The Contractor shall perform all design engineering tasks in accordance with KSC-DE-512-SM, Facility, System, and Equipment General Design Requirements; NASA STD 5005, Standard For The Design And Fabrication Of Ground Support Equipment; GP-435, Engineering Drawing Practices/Volumes I and II; and with Program provided design requirements documents.

The Contractor shall participate in design reviews with Government engineering development and operations personnel to ensure performance, safety, quality, risk, operability, maintainability, and reliability requirements are met by the design. Design reviews are conducted in accordance with defined NASA/KSC and program requirements, and in accordance with KDP-P-2713, Technical Review Process. The Contractor shall lead design reviews when assigned the leadership responsibility for development projects to ensure performance, safety, quality, risk, operability, maintainability, and reliability requirements are met by the design.

2.1.4 PROOF OF CONCEPT PROTOTYPE

The Contractor shall develop proof of concept prototypes of components, assemblies, subsystems, and complete systems for laboratory testing, field testing and demonstration of technical feasibility. The Contractor shall provide documentation of the results of prototype tasks, including but not limited to as-built shop drawings.

2.1.5 FABRICATION AND ASSEMBLY

The Contractor may have capabilities within their own workforce for fabrication of some equipment; however some equipment may need to be procured from other vendors. The Contractor shall perform make or buy assessments and recommendations for fabrication of parts, assemblies, subsystems, end item components, unique test fixtures and test articles. The Contractor shall provide documentation of the results of make or buy assessments. The Contractor shall provide fabricated parts, assemblies, subsystems and end items manufactured to aerospace standards, as directed in KSC, program, and NASA requirements documents, whether they are built in house or procured from outside vendors. The Contractor shall provide documentation of compliance with manufacturing standards as required.

2.1.6 TESTING

The Contractor shall provide support for design of equipment, fixtures, and tooling required for testing, handling, or build-up.

The Contractor shall perform tasks including support, development and execution of test requirements, plans and procedures as required for:

- Verification testing conducted on components, subassemblies and the final assembled product
- Validation and acceptance testing after turn over to operations and maintenance organizations
- Engineering development products such as prototypes, qualification parts, and operational configurations
- Operations technology investigations

The Contractor shall perform tasks including test planning, scheduling, coordinating, test set-up activation and modification, test execution, defining requirements for data acquisition, recording and evaluation, and test reporting. The Contractor shall provide test reports to document whether parts or systems meet requirements. Test reports shall also include test configuration, equipment used, test methodology, test data, analysis of test results, appropriate recommendations and conclusions that may be derived from the testing.

For specific responsibilities for the verification and validation of Constellation ground systems refer to Attachment J-15, Verification and Validation Responsibilities Matrix for Constellation Ground Systems.

The Contractor shall develop and provide an acceptance test procedure (ATP) for certification of the final assembled product. As-run copies of the ATP with appropriate results, data, and quality control approvals shall be provided as part of the test results documentation, per program requirements.

The Contractor shall comply with KNPR 8750.1, KSC Software Assurance Procedural Requirements, when detailed software product assurance or independent verification and validation is required.

2.1.7 ANALYSIS

The Contractor shall perform and support analyses during all phases of development, including but not limited to: thermal, vibroacoustic, computational fluid dynamics, stress, loads, fracture, electro-magnetic compatibility, electrical power distribution, sneak circuit and computer system performance. The Contractor shall provide documentation of the results of their analyses.

2.1.8 DELIVERY AND INSTALLATION

The Contractor shall perform installation designs for ground systems and equipment to be installed in facilities.

The Contractor shall install hardware and software systems. Since other operations may be occurring concurrently during installations, coordination of operational constraints will be necessary.

The Contractor shall prepare and deliver certification and turnover documentation, including Acceptance Data Packages, for completed components or systems for

transfer of operations and maintenance to the end user in accordance with Government provided requirements.

2.1.9 SUSTAINING ENGINEERING

The Contractor shall perform sustaining engineering of ground systems and ground support equipment hardware and software, including minor design changes and resultant documentation, as required by NASA/KSC. These services include software engineering, laboratory tests, and problem resolution for components or systems previously transferred to the customer. Sustaining engineering of ground systems and equipment is the primary responsibility of the operations and maintenance organization, but this capability is required for non-recurring analysis, trouble shooting, and modifications in the case where the Operations and Maintenance (O&M) organization requires support from the original system design organization.

2.2 SPACE FLIGHT SYSTEMS ENGINEERING

The Contractor shall perform primary and support engineering functions for space flight hardware and software systems and associated interfacing ground systems and ground support equipment, as required by NASA, for launch vehicles, spacecraft, and payloads during the phases of design, development, test, evaluation, production, flight hardware and software processing, launch, mission, and post mission. These functions shall include, but are not limited to:

- Performing hardware and software design, development, test, evaluation, verification, validation, and certification for flight systems
- Evaluating and performing analyses on flight systems
- Performing insight for design, development, testing, evaluation, analyses, verification, validation, certification, manufacturing, assembly, integration, checkout, launch operations, on-orbit mission operations, recovery operations, and post flight operations of flight systems
- Evaluating launch vehicle, spacecraft, and payload standard and non-standard mission specific items for compliance with requirements
- Investigating, evaluating, and performing analyses on ground support systems and equipment interfacing with flight systems at processing facilities and launch complexes

The Contractor shall, for any analysis, peer review, validation, verification, certification, test, or assessment performed, provide to NASA: software and hardware products and documented results, interpretations of findings, and recommendations.

The Contractor shall have a firm understanding of flight systems and their expected performance such that system performance assessments occur in a timely, accurate, and complete manner.

The Contractor shall provide documentation and notification to NASA to facilitate prompt approval of mission unique items and a knowledgeable “go/no-go” decision for NASA missions.

The Contractor shall support NASA in stakeholder meetings to provide technical evaluations and recommendations. These meetings include, but are not limited to: Integrated Product Team (IPT) meetings, Technical Interchange Meetings (TIM),

Preliminary Design Reviews (PDR), Critical Design Reviews (CDR), Design Certification Reviews (DCR), hardware/software acceptance reviews, Quarterly Program Reviews (QPR), Safety Review meetings, Space Flight Readiness Reviews (SFRR), and Launch Readiness Reviews (LRR).

2.2.1 SPACE FLIGHT SYSTEMS ANALYSIS

The Contractor shall perform analysis and provide documented reviews of analysis products throughout the life cycle for each assigned launch vehicle, spacecraft, and payload, as required, for each NASA mission.

The Contractor shall perform or provide support to independent analyses. These activities include, but are not limited to:

- Developing and creating analysis tools
- Developing and creating complex launch vehicle, spacecraft, and payload models
- Validating models and analysis tools
- Performing analysis on models using relevant software
- Modifying or updating design center and/or Original Equipment Manufacturer (OEM) supplied analytical software and models

The Contractor shall perform peer reviews of analyses performed by others. These activities include, but are not limited to:

- Understanding NASA and COTS tools such that input and output files can be reviewed efficiently and accurately
- Understanding models such that input and output files can be reviewed efficiently and accurately
- Reviewing reports and performing analytical checks as required
- Verification of NASA and COTS analysis tools

The analytical areas that shall be covered for analysis and peer review include but not limited to the following:

- Loads and Structural Dynamics
- Vibrations
- Dynamic Environments
- Stress
- Fracture Mechanics
- Electrical Power
- Flight Design
- Flight Software
- Controls and Stability
- Integrated Avionics
- Integrated Propulsion
- Safety
- Reliability
- RF System Performance
- Thermal/Thermodynamics
- Aerodynamics and Aerothermodynamics

- Electromagnetic Compatibility/Interference
- Computational Fluid Dynamics (CFD)/Gasdynamics

2.2.2 SPACE FLIGHT SYSTEMS ENGINEERING AND INTEGRATION

The Contractor shall provide hardware and software design, development, test, evaluation, and certification for space flight systems. These activities include, but are not limited to:

- Performing and supporting trade studies, design, and development
- Providing complete design packages, or parts thereof
- Performing and supporting: test requirements definition; test planning, scheduling, and coordination; test hazard assessment and mitigation; test procedure development; test set-up, activation, and modification; test execution; test data acquisition, recording, and evaluation; and test reporting
- Performing and supporting verification testing, validation testing, acceptance testing, qualification testing, and certification testing
- Performing and supporting the certification of flight hardware and software
- Providing hardware and software products which include but are not limited to: prototypes; mockups; test articles; test equipment; training hardware, certified flight hardware and software; certified payloads; engineering drawings, specifications, and reports; and procedures, installation and integration instructions, and documentation for testing and sustained operation and maintenance of flight hardware and software

The Contractor shall utilize the design process identified by task order for proposed space flight system designs.

The Contractor shall perform engineering insight into space flight systems design and development activities at design centers and OEMs.

The Contractor shall obtain, perform, and/or assess, and provide the following for space flight hardware and software systems: system requirements, specifications, system analysis, hardware and software integration assessments, systems compatibility assessment, metallographic assessments, spaceflight material usage assessment, trending analysis, component/system failure analysis, hazard analysis, reliability analysis, design analysis, design engineering, certification processes, certification data, software independent verification and validation assessments, corrective action processes, flight commit requirements, flight system performance, and post flight assessment.

The Contractor shall obtain and provide an evaluation of the following for space flight systems: manufacturing processes; vendor qualifications; and test plans, procedures, and results for testing such as verification testing, validation testing, certification testing, qualification testing, acceptance testing, and operational testing.

The Contractor shall perform engineering insight into space flight system production activities at component level vendors, subsystem vendors, launch vehicle providers, spacecraft providers, and payload providers.

The Contractor shall provide timely, accurate, and complete assessment of launch vehicle, spacecraft, and payload hardware and software systems anomalies to include: anomaly analysis and corrective action and anomaly resolution proposal.

The Contractor shall provide space flight systems expertise including, but not limited to:

- Electrical/Avionics Engineering: electrical systems; avionics systems; guidance, navigation, and control systems; navigational aid systems; vehicle instrumentation systems; video and camera systems, vehicle telemetry systems; vehicle Radio Frequency (RF) systems; vehicle power systems; data acquisition, handling, and distribution systems; ground launch control system software and applications; space flight constants, software, and program loads; and electrical/avionics ground support equipment.

- Mechanical/Fluids/Structural Engineering: structures; materials and processes; payload adapters; mechanisms and mechanical systems; crew survival equipment interfaces; pneumatics systems; hydraulics systems; liquid and solid propulsion systems; purge, vent, and drain systems; environmental control systems; ordnance/pyrotechnic systems; active and passive thermal control; contamination control methods; radiation systems; and mechanical/fluids/structural ground support equipment.

2.3 TECHNOLOGY DEVELOPMENT

The Contractor shall implement a technology development effort in accordance with NPR 7120.8, NASA Research and Technology Program and Project Requirements. The Contractor shall perform Science and Technology (S&T) development as identified in current version of KDP-KSC-S-1162, KSC High Priority Technology Needs. The scope of the S&T development for operations activity is primarily at Technology Readiness Levels (TRL) 3 thru 6, as defined in Appendix D, which advances technology from an analytical and experimental proof-of-concept to a prototype system demonstration in a relevant environment.

The Contractor shall propose technology projects aligned with NASA and KSC's technology needs.

The Contractor shall identify, evaluate and develop technology for immediate response to operational issues.

The Contractor shall identify, evaluate and/or develop specific technologies to reduce life cycle cost, improve safety, reliability, operability, maintainability, and performance of existing and near term operational systems.

The Contractor shall identify, evaluate and/or develop technologies for future needs to accomplish NASA's mission.

The Contractor shall support the development of KSC proposals to NASA and other Government Agency solicitations.

The Contractor shall provide documentation and reports for technology development projects.

2.4 LABORATORIES & DEVELOPMENTAL SHOPS OPERATIONS

The Contractor shall operate resident laboratory locations or in-situ such as KSC, Cape Canaveral Air Force Station (CCAFS), and Patrick Air Force Base (PAFB), and other entities as assigned by Task Order. These assigned laboratories and developmental shops are described in Appendix C, Laboratories and Developmental Shops Descriptions. Operations for assigned laboratories and developmental shops include the following: research, development, prototyping, testing, and analysis.

Contractor personnel shall be trained to safely operate standard machines and specialized equipment associated with the disciplines and technologies in each contractor staffed shop and laboratory and acquire necessary books and technical materials related to the operations of the assigned laboratories and developmental shops.

Contractor personnel shall perform operations for the assigned laboratories in Appendix C, Laboratories and Developmental Shops Descriptions. The Contractor shall provide, manage and operate a work control system to schedule and prioritize contractor work for assigned laboratories and developmental shops.

The Contractor shall provide documentation in accordance with the customer's requirements for work performed.

The Contractor shall provide host services to Government sponsored visitors such as Academia, Government, and Industry. This includes: gathering and documenting support requirements and documents; developing and coordinating unique protocols in support of research activities; assuring readiness of laboratories, equipment, and specialized logistics; providing training for use of host equipment; providing personnel escorts when required by security regulations; and coordinating related activities conducted in KSC facilities.

The Contractor shall plan, conduct, and provide recurring and non-recurring customer required research, development, prototyping, testing, and analysis services.

2.5 TECHNICAL SERVICES

2.5.1 SOFTWARE DEVELOPMENT AND SYSTEM ADMINISTRATION

The Contractor shall develop, manage, maintain, and upgrade engineering, science and business software applications, databases and tools.

The Contractor shall perform system administration functions for hardware and software systems for engineering, institutional and programmatic customers.

The Contractor shall provide support in implementing IT Security requirements for systems under development or in operation, for science and business software applications, databases and systems for engineering, institutional and programmatic customers not included under WBS 1.3.1 or 1.7.

2.5.2 TECHNICAL WRITING/REPORTS/DOCUMENTATION

The Contractor shall provide technical writing, editing, and technical illustration of various engineering, science and technology documents, reports, operation and

maintenance manuals, strategic plans and presentations related to contract activities. Activities include researching, writing, reviewing, editing, typing, and proofreading to ensure production of a complete document ready for approval.

The Contractor shall support the development and maintenance of engineering requirements, processes, standards and specifications.

The Contractor shall develop and maintain engineering, science and business processes, procedures and documentation.

The Contractor shall provide technology reports, such as the Technology Inventory Database Reports, KSC S&T Development Reports, Laboratories and Developmental Shops Reports.

2.5.3 WEB/MULTIMEDIA/GRAPHIC DESIGN

The Contractor shall design, develop, and maintain web sites.

The Contractor shall provide multimedia and graphic support including, but not limited to, photographic, graphic, presentation, and video design, development, and alteration.

2.5.4 CAD/CAE AND SIMULATION

The Contractor shall provide Computer Aided Design (CAD), Computer Aided Engineering (CAE), engineering collaboration tools and capabilities, discrete event modeling, simulation, and design visualization support.

The Contractor shall prepare or assist in preparing engineering drawings, block diagrams, schematics, printed circuit layouts, parts lists, layouts, and other associated documentation. The Contractor shall have proficiency with Government provided software tools, including but not limited to: I-DEAS, Pro/Engineer, and Autocad.

Technical documentation shall be prepared in accordance with GP-435, Engineering Drawing Practices/Volumes I and II and KSC-DF-107, Technical Documentation Style Guide.

2.5.5 CRAFT LABOR

The Contractor shall provide craft labor support including, but not limited to pipefitters, welders, electricians, mechanics, heavy equipment, and iron workers, for tasks including fabrication, modification, and maintenance of ground systems and equipment; installation and connection of ground systems and equipment in facilities and field locations; and punch list items, verification testing and validation testing support of installed equipment.

The Contractor shall provide on-call craft labor support to be scheduled when required. Craft labor shall be managed on an hourly, daily, or weekly basis as required to perform the necessary work.

The Contractor shall provide technical and management support of craft labor efforts including: project management, cost estimating and tracking, procurement

management, scheduling, work control, logistics, field engineering, site supervision, safety, quality assurance, shop drawings, test procedures, and as built documentation.

2.5.6 EXPERT TROUBLESHOOTING SERVICES

The Contractor shall provide expert troubleshooting services including non-routine problem solving, application support, lab and field testing, engineering analysis/prediction, data analysis, and fault diagnosis for ground and flight systems.

2.5.7 PROGRAM/PROJECT MANAGEMENT AND SUPPORT SERVICES

The Contractor shall provide project management and program/project management support.

The Contractor shall perform project management functions either as part of blended NASA/Contractor teams or as teams consisting of the Contractor's own workforce.

The Contractor shall manage assigned projects in a manner that allows for completion of project objectives within the planned schedule, cost and technical baselines.

The Contractor shall provide program/project management support including: systems engineering and integration, cost estimating, earned value management, metrics, project planning, project formulation, requirements generation, resource allocations, spending plans, budgets, literature searches, project proposals, market research, configuration management, work breakdown structures, scheduling, schedule analysis, field surveys, providing data, development of lessons learned and support for reviews, special briefings and presentations.

The Contractor shall have proficiency with Government provided software tools such as: Primavera, Windchill, and Cradle.

2.5.8 INNOVATIVE PARTNERSHIP PROGRAM

The Contractor shall support the management of the Innovative Partnership Program (IPP), as established by NPD 7500.2B, NASA Innovative Partnership Program and NPR 7500.1 NASA Technology Commercialization Process.

The Contractor shall support the development and implementation of strategies for technology infusion, technology transfer, intellectual property management and partnerships development.

The Contractor shall provide advocacy of the IPP program to advance technology infusion, technology transfer, and partnership development through outreach and inreach activities. The Contractor shall provide information to increase awareness of the innovation incubator programs to include Facilitated Access to Space Technology (FAST), Centennial Challenges, and Innovation Transfusion. This includes planning and implementing outreach/inreach activities including special projects, demonstrations, displays, seminars, and presentations. The Contractor shall develop outreach materials including brochures, multi-media products exhibit materials and newsletters.

The Contractor shall provide management support including maintaining and updating internal processes and procedures, identifying/developing new business strategies models and initiatives, preparing metric reports and presentations.

The Contractor shall provide support for the Small Business Innovation Research/Small Business Technical Transfer (SBIR/STTR) Program. This shall include data management, presentations, and project management. The Contractor shall provide program and contract status tracking, preparation of Success Stories and responding to program inquiries.

The Contractor shall provide training for the SBIR/STTR program, solicitation process, proposal review, post award process and the use of the Electronic Handbook to NASA personnel.

2.5.9 LOGISTICS SERVICES

The Contractor shall perform integrated logistics services to include logistics studies, logistics support analysis, and logistics engineering activities. The Contractor shall perform basic logistics operations within the laboratories, shops and other work sites to include property management, procurement/acquisition management, receiving and inspection, inventory management, storage, maintenance, kitting, assembly/component sparing, staging and hardware dispositioning for property disposal. The Contractor shall ensure compliance with government forms and procedures relative to the handling, packaging and transporting of government property, as required in KNPR 6000.1, Transportation Support Systems Manual.

Note: ISC provides a variety of institutional logistics capabilities for the Kennedy Space Center as listed in attachment J-07 Government Furnished Services

2.5.10 TECHNICAL REVIEWS/BOARDS/PANEL SUPPORT

The Contractor shall provide support to program reviews, design reviews, control boards, program/project teams, IPTs, and panels. The Contractor shall provide secretariat and administrative functions to include:

- Publish/distribute preliminary and final versions of meeting minutes/actions
- Prepare agendas
- Coordinate video and teleconferences
- Arrange facility accommodations and presentation equipment
- Reproduce, provide access to, and distribute meeting materials
- Record attendance

The Contractor shall operate the hardware and software required to perform technical reviews, boards, and panels such as multimedia equipment, reproduction equipment, WebEx, Video Teleconferencing Systems and MS Office products.

2.5.11 SAFETY AND MISSION ASSURANCE SERVICES

The Contractor shall perform safety and mission assurance services for engineering development of hardware and software products associated with ground systems and ground support equipment and for space flight systems engineering support. The

safety and mission assurance services shall include: system safety, maintainability, reliability, and quality planning; performance of system safety analyses, reliability analyses, maintainability analyses, and risk assessments; quality activities including establishing quality requirements, audits, reviews and inspections; and developing, supporting, utilizing and maintaining database systems for tracking and assessment of safety and mission assurance data.

The Contractor shall perform Safety and Mission Assurance services associated with reviews, panels, boards and working groups. Services shall include: presentation of results associated with the performance of Safety and Mission Assurance products (e.g., hazard analysis, reliability analysis, maintainability analysis, risk assessments and quality reviews); and providing assessments (impact to budget, schedule, safety, reliability and quality) associated with proposed changes to safety and mission assurance documentation.

Safety and Mission Assurance services shall be performed in accordance with KNPR 8700.2, KSC System Safety and Reliability Analysis Methodology Procedural Requirements, KNPR 8750.1, KSC Software Assurance Procedural Requirements, SAE AS 9100, Quality Management Systems Requirements for Aviation, Space and Defense Organizations, and KNPR 8730.2, Quality Assurance Procedural Requirements.

The Contractor shall utilize EEE (Electrical, Electronic, and Electromechanical) parts in accordance with Chapter 3 of KNPR 8720.2, KSC Reliability and Maintainability Procedural Requirements.

2.5.12 MINOR MODIFICATIONS

The Contractor shall perform minor modifications, repairs, and upgrades within assigned facilities, laboratories and developmental shops, and other work areas as directed by NASA.

The Contractor shall meet the requirements of NPR 8820.2, Facility Project Requirements, and KSC-KDP-P-1319, Facility Project Approval and Implementation, for all work performed on facilities or facility systems.

2.5.13 SPECIAL STUDIES

The Contractor shall perform flight systems, operations technology, and ground engineering special studies, projects, and analyses in support of NASA ground and flight systems. These activities include, but are not limited to:

- Advance planning and feasibility studies
- Analyses in support of change requirements
- Development, fabrication, and test of hardware/software to support planning studies or special tests
- Mission unique studies
- Technology applications
- Safety and mission assurance

- Processing and launch of hazardous payloads

The Contractor shall plan, implement and provide reports documenting results at the conclusion of the study efforts.

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NNK11EA08C

ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-02
TASK ORDER SUMMARY

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Engineering Services Contract (ESC) NNK11EA08C - Attachment J-02 Task Order Summary

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Task Order	Status	End Date	Value Change	Task Order Value (Estimated)		Obligated	Incremental Funding		Funding Balance	
				Changed From	Changed To		Changed From	Changed To		
1	Canceled		$ -	$ -	$ -	$ -	$ -	$ -	$ -	
2	Completed	09/30/11	$ -	$ 38,775.00	$ 38,775.00	$ -	$ 40,277.01	$ 40,277.01	$ 1,502.01	Over Run
3	Completed	09/30/13	$ 0.00	$ 50,486.00	$ 50,486.00	$ -	$ 47,737.01	$ 47,737.01	$ (2,748.99)	
4	Canceled		$ -	$ -	$ -	$ -	$ -	$ -	$ -	
5	Completed	09/30/11	$ -	$ 291,621.00	$ 291,621.00	$ -	$ 256,137.00	$ 256,137.00	$ (35,484.00)	
6	Completed	06/30/13	$ -	$ 386,658.00	$ 386,658.00	$ -	$ 359,809.98	$ 359,809.98	$ (26,848.02)	
7	Completed	09/30/12	$ -	$ 1,376,065.00	$ 1,376,065.00	$ -	$ 1,154,187.00	$ 1,154,187.00	$ (221,878.00)	
8	Completed	02/29/12	$ -	$ 118,049.00	$ 118,049.00	$ -	$ 118,044.01	$ 118,044.01	$ (4.99)	
9	Completed	07/31/12	$ -	$ 201,057.00	$ 201,057.00	$ -	$ 186,591.00	$ 186,591.00	$ (14,466.00)	
10	Completed	09/30/12	$ -	$ 558,974.00	$ 558,974.00	$ -	$ 488,979.00	$ 488,979.00	$ (69,995.00)	
11	Completed	09/30/11	$ -	$ 48,868.00	$ 48,868.00	$ -	$ 46,146.00	$ 46,146.00	$ (2,722.00)	
12	Completed	11/02/12	$ -	$ 20,034,810.00	$ 20,034,810.00	$ -	$ 17,708,158.09	$ 17,708,158.09	$ (2,326,651.91)	
13	Completed	12/31/11	$ -	$ 10,301,903.00	$ 10,301,903.00	$ -	$ 9,653,715.01	$ 9,653,715.01	$ (648,187.99)	
14	Open	09/30/14	$ -	$ 1,172,202.00	$ 1,172,202.00	$ 30,000.00	$ 933,834.00	$ 963,834.00	$ (208,368.00)	
15	Completed	03/31/13	$ -	$ 1,719,121.00	$ 1,719,121.00	$ -	$ 1,439,150.01	$ 1,439,150.01	$ (279,970.99)	
16	Completed	09/30/11	$ -	$ 201,401.00	$ 201,401.00	$ -	$ 185,803.00	$ 185,803.00	$ (15,598.00)	
17	Completed	09/30/13	$ -	$ 2,641,256.00	$ 2,641,256.00	$ -	$ 2,268,031.04	$ 2,268,031.04	$ (373,224.96)	
18	Completed	03/31/12	$ -	$ 239,738.00	$ 239,738.00	$ -	$ 233,420.00	$ 233,420.00	$ (6,318.00)	
19	Completed	02/28/13	$ -	$ 1,334,664.00	$ 1,334,664.00	$ -	$ 1,235,752.00	$ 1,235,752.00	$ (98,912.00)	
20	Open	02/28/16	$ -	$ 259,070.00	$ 259,070.00	$ -	$ 94,200.80	$ 94,200.80	$ (164,869.20)	
21	Open	09/30/14	$ -	$ 5,750,711.00	$ 5,750,711.00	$ 93,000.00	$ 5,135,384.00	$ 5,228,384.00	$ (522,327.00)	
22	Completed	09/30/11	$ -	$ 417,876.00	$ 417,876.00	$ -	$ 400,000.00	$ 400,000.00	$ (17,876.00)	
23	Open	09/30/14	$ -	$ 6,238,420.00	$ 6,238,420.00	$ (1,036.00)	$ 5,354,741.01	$ 5,353,705.01	$ (884,714.99)	
24	Open	09/30/14	$ -	$ 17,595,854.00	$ 17,595,854.00	$ -	$ 15,494,476.25	$ 15,494,476.25	$ (2,101,377.75)	
25	Open	09/30/14	$ (189,914.00)	$ 9,476,204.00	$ 9,286,290.00	$ 80,000.00	$ 8,493,887.01	$ 8,573,887.01	$ (712,402.99)	
26	Completed	09/30/11	$ -	$ 873,680.00	$ 873,680.00	$ -	$ 759,301.00	$ 759,301.00	$ (114,379.00)	
27	Open	11/30/14	$ 1,066,900.00	$ 8,296,221.00	$ 9,363,121.00	$ 639,571.00	$ 7,690,596.35	$ 8,330,167.35	$ (1,032,953.65)	
28	Open	09/30/14	$ -	$ 556,341.00	$ 556,341.00	$ -	$ 556,252.00	$ 556,252.00	$ (89.00)	
29	Open	09/30/14	$ -	$ 34,057,400.00	$ 34,057,400.00	$ 5,528,333.01	$ 26,578,007.12	$ 32,106,340.13	$ (1,951,059.87)	
30	Open	02/29/16	$ -	$ 8,878,928.00	$ 8,878,928.00	$ -	$ 4,961,536.00	$ 4,961,536.00	$ (3,917,392.00)	
31	Open	09/30/14	$ -	$ 16,745,509.00	$ 16,745,509.00	$ -	$ 15,946,894.01	$ 15,946,894.01	$ (798,614.99)	
32	Canceled		$ -	$ -	$ -	$ -	$ -	$ -	$ -	
33	Completed	07/29/11	$ -	$ 163,659.00	$ 163,659.00	$ -	$ 143,400.00	$ 143,400.00	$ (20,259.00)	
34	Completed	09/30/11	$ -	$ 53,707.00	$ 53,707.00	$ -	$ 48,197.00	$ 48,197.00	$ (5,510.00)	
35	Completed	07/31/11	$ -	$ 75,358.00	$ 75,358.00	$ -	$ 68,763.00	$ 68,763.00	$ (6,595.00)	
36	Completed	12/31/12	$ -	$ 527,413.00	$ 527,413.00	$ -	$ 571,953.00	$ 571,953.00	$ 44,540.00	Over Run
37	Completed	10/31/11	$ -	$ 9,890.00	$ 9,890.00	$ -	$ 9,735.00	$ 9,735.00	$ (155.00)	
38	Completed	09/30/11	$ -	$ 22,669.00	$ 22,669.00	$ -	$ 24,125.00	$ 24,125.00	$ 1,456.00	Over Run
39	Open	09/30/14	$ -	$ 6,831,652.00	$ 6,831,652.00	$ -	$ 6,225,290.00	$ 6,225,290.00	$ (606,362.00)	
40	Open	09/30/14	$ -	$ 2,782,309.00	$ 2,782,309.00	$ 150,000.00	$ 2,090,616.00	$ 2,240,616.00	$ (541,693.00)	
41	Open	02/29/16	$ -	$ 12,337,705.00	$ 12,337,705.00	$ -	$ 1,681,950.00	$ 1,681,950.00	$ (10,655,755.00)	

Engineering Services Contract (ESC) NNK11EA08C - Attachment J-02 Task Order Summary

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Task Order	Status	End Date	Value Change	Task Order Value (Estimated)		Obligated	Incremental Funding		Funding Balance	
				Changed From	Changed To		Changed From	Changed To		
42	Open	09/30/14	$ -	$ 28,438,351.00	**$ 28,438,351.00**	$ (396,000.00)	$ 24,220,404.00	**$ 23,824,404.00**	$ (4,613,947.00)	
43	Open	09/30/14	$ -	$ 905,901.00	**$ 905,901.00**	$ 30,000.00	$ 689,882.00	**$ 719,882.00**	$ (186,019.00)	
44	Completed	01/31/14	$ -	$ 257,698.00	**$ 257,698.00**	$ -	$ 232,980.00	**$ 232,980.00**	$ (24,718.00)	
45	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
46	Open	09/30/15	$ -	$ 974,933.00	**$ 974,933.00**	$ (46,695.00)	$ 814,898.00	**$ 768,203.00**	$ (206,730.00)	
47	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
48	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
49	Completed	09/30/11	$ -	$ 16,965.00	**$ 16,965.00**	$ -	$ 16,965.84	**$ 16,965.84**	$ 0.84	Over Run
50	Completed	04/30/11	$ -	$ 6,764.00	**$ 6,764.00**	$ -	$ 6,763.29	**$ 6,763.29**	$ (0.71)	
51	Open	09/30/14	$ -	$ 31,370,619.00	**$ 31,370,619.00**	$ -	$ 30,225,860.01	**$ 30,225,860.01**	$ (1,144,758.99)	
52	Completed	12/09/11	$ -	$ 363,526.00	**$ 363,526.00**	$ -	$ 348,316.00	**$ 348,316.00**	$ (15,210.00)	
53	Completed	07/31/11	$ -	$ 57,671.00	**$ 57,671.00**	$ -	$ 57,450.00	**$ 57,450.00**	$ (221.00)	
54	Completed	06/30/12	$ -	$ 198,967.00	**$ 198,967.00**	$ -	$ 197,135.00	**$ 197,135.00**	$ (1,832.00)	
55	Completed	09/30/11	$ -	$ 58,137.00	**$ 58,137.00**	$ -	$ 61,437.00	**$ 61,437.00**	$ 3,300.00	Over Run
56	Open	09/30/14	$ -	$ 644,153.00	**$ 644,153.00**	$ 9,000.00	$ 365,099.02	**$ 374,099.02**	$ (270,053.98)	
57	Completed	06/15/12	$ 0.00	$ 36,174.00	**$ 36,174.00**	$ -	$ 34,791.00	**$ 34,791.00**	$ (1,383.00)	
58	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
59	Completed	04/30/12	$ -	$ 137,739.00	**$ 137,739.00**	$ -	$ 136,469.00	**$ 136,469.00**	$ (1,270.00)	
60	Open	09/30/14	$ -	$ 1,227,376.00	**$ 1,227,376.00**	$ 6,000.00	$ 927,315.00	**$ 933,315.00**	$ (294,061.00)	
61	Open	09/30/14	$ -	$ 135,887.00	**$ 135,887.00**	$ -	$ 100,421.03	**$ 100,421.03**	$ (35,465.97)	
62	Completed	02/29/12	$ -	$ 721,556.00	**$ 721,556.00**	$ -	$ 668,211.00	**$ 668,211.00**	$ (53,345.00)	
63	Open	09/30/14	$ -	$ 748,410.00	**$ 748,410.00**	$ -	$ 566,977.00	**$ 566,977.00**	$ (181,433.00)	
64	Open	09/30/14	$ -	$ 381,923.00	**$ 381,923.00**	$ -	$ 367,438.00	**$ 367,438.00**	$ (14,485.00)	
65	Completed	09/30/11	$ -	$ 201,105.00	**$ 201,105.00**	$ -	$ 184,719.00	**$ 184,719.00**	$ (16,386.00)	
66	Completed	07/31/11	$ -	$ 211,839.00	**$ 211,839.00**	$ -	$ 170,588.00	**$ 170,588.00**	$ (41,251.00)	
67	Completed	03/31/13	$ -	$ 189,586.00	**$ 189,586.00**	$ -	$ 186,182.00	**$ 186,182.00**	$ (3,404.00)	
68	Completed	09/30/11	$ -	$ 2,293.00	**$ 2,293.00**	$ -	$ 2,098.01	**$ 2,098.01**	$ (194.99)	
69	Open	09/30/14	$ -	$ 286,434.00	**$ 286,434.00**	$ -	$ 286,433.01	**$ 286,433.01**	$ (0.99)	
70	Completed	08/15/11	$ -	$ 6,685.00	**$ 6,685.00**	$ -	$ 6,664.00	**$ 6,664.00**	$ (21.00)	
71	Completed	09/30/11	$ -	$ 2,368,127.00	**$ 2,368,127.00**	$ -	$ 2,245,526.01	**$ 2,245,526.01**	$ (122,600.99)	
72	Completed	09/30/11	$ -	$ 59,034.00	**$ 59,034.00**	$ -	$ 52,731.00	**$ 52,731.00**	$ (6,303.00)	
73	Completed	09/30/12	$ -	$ 611,986.00	**$ 611,986.00**	$ -	$ 547,284.00	**$ 547,284.00**	$ (64,702.00)	
74	Open	02/29/16	$ -	$ 606,160.00	**$ 606,160.00**	$ -	$ 476,078.85	**$ 476,078.85**	$ (130,081.15)	
75	Open	02/29/16	$ -	$ 3,401,808.00	**$ 3,401,808.00**	$ -	$ 1,767,203.48	**$ 1,767,203.48**	$ (1,634,604.52)	
76	Completed	06/29/12	$ -	$ 437,513.00	**$ 437,513.00**	$ -	$ 315,635.00	**$ 315,635.00**	$ (121,878.00)	
77	Completed	07/19/11	$ -	$ 25,425.00	**$ 25,425.00**	$ -	$ 21,276.00	**$ 21,276.00**	$ (4,149.00)	
78	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
79	Completed	04/15/13	$ -	$ 71,212.00	**$ 71,212.00**	$ -	$ 67,414.00	**$ 67,414.00**	$ (3,798.00)	
80	Completed	10/31/11	$ -	$ 96,929.00	**$ 96,929.00**	$ -	$ 94,128.00	**$ 94,128.00**	$ (2,801.00)	
81	Completed	02/29/12	$ -	$ 178,717.00	**$ 178,717.00**	$ -	$ 181,417.00	**$ 181,417.00**	$ 2,700.00	Over Run
82	Open	09/30/14	$ -	$ 1,126,128.00	**$ 1,126,128.00**	$ -	$ 821,550.00	**$ 821,550.00**	$ (304,578.00)	

Engineering Services Contract (ESC) NNK11EA08C - Attachment J-02 Task Order Summary

Mod 95

Task Order	Status	End Date	Value Change	Task Order Value (Estimated)		Obligated	Incremental Funding		Funding Balance	
				Changed From	Changed To		Changed From	Changed To		
1	Canceled		$ -	$ -	$ -	$ -	$ -	$ -	$ -	
2	Completed	09/30/11	$ -	$ 38,775.00	$ 38,775.00	$ -	$ 40,277.01	$ 40,277.01	$ 1,502.01	Over Run
3	Completed	09/30/13	$ -	$ 50,486.00	$ 50,486.00	$ -	$ 47,737.01	$ 47,737.01	$ (2,748.99)	
4	Canceled		$ -	$ -	$ -	$ -	$ -	$ -	$ -	
5	Completed	09/30/11	$ -	$ 291,621.00	$ 291,621.00	$ -	$ 256,137.00	$ 256,137.00	$ (35,484.00)	
6	Completed	06/30/13	$ -	$ 386,658.00	$ 386,658.00	$ -	$ 358,253.98	$ 358,253.98	$ (28,404.02)	
7	Completed	09/30/12	$ -	$ 1,376,065.00	$ 1,376,065.00	$ -	$ 1,154,187.00	$ 1,154,187.00	$ (221,878.00)	
8	Completed	02/29/12	$ -	$ 118,049.00	$ 118,049.00	$ -	$ 118,044.01	$ 118,044.01	$ (4.99)	
9	Completed	07/31/12	$ -	$ 201,057.00	$ 201,057.00	$ -	$ 186,591.00	$ 186,591.00	$ (14,466.00)	
10	Completed	09/30/12	$ 0.00	$ 558,974.00	$ 558,974.00	$ -	$ 488,979.00	$ 488,979.00	$ (69,995.00)	
11	Completed	09/30/11	$ -	$ 48,868.00	$ 48,868.00	$ -	$ 46,146.00	$ 46,146.00	$ (2,722.00)	
12	Completed	11/02/12	$ -	$ 20,034,810.00	$ 20,034,810.00	$ -	$ 17,708,158.09	$ 17,708,158.09	$ (2,326,651.91)	
13	Completed	12/31/11	$ -	$ 10,301,903.00	$ 10,301,903.00	$ -	$ 9,653,715.01	$ 9,653,715.01	$ (648,187.99)	
14	Open	09/30/14	$ -	$ 1,172,202.00	$ 1,172,202.00	$ -	$ 1,023,834.00	$ 1,023,834.00	$ (148,368.00)	
15	Completed	03/31/13	$ 0.00	$ 1,719,121.00	$ 1,719,121.00	$ -	$ 1,439,150.01	$ 1,439,150.01	$ (279,970.99)	
16	Completed	09/30/11	$ -	$ 201,401.00	$ 201,401.00	$ -	$ 185,803.00	$ 185,803.00	$ (15,598.00)	
17	Completed	09/30/13	$ (0.00)	$ 2,641,256.00	$ 2,641,256.00	$ -	$ 2,268,031.04	$ 2,268,031.04	$ (373,224.96)	
18	Completed	03/31/12	$ -	$ 239,738.00	$ 239,738.00	$ -	$ 233,420.00	$ 233,420.00	$ (6,318.00)	
19	Completed	02/28/13	$ (0.00)	$ 1,334,664.00	$ 1,334,664.00	$ -	$ 1,235,752.00	$ 1,235,752.00	$ (98,912.00)	
20	Open	02/28/16	$ -	$ 259,070.00	$ 259,070.00	$ -	$ 94,200.80	$ 94,200.80	$ (164,869.20)	
21	Open	09/30/14	$ -	$ 5,750,711.00	$ 5,750,711.00	$ 220,000.00	$ 5,228,384.00	$ 5,448,384.00	$ (302,327.00)	
22	Completed	09/30/11	$ -	$ 417,876.00	$ 417,876.00	$ -	$ 400,000.00	$ 400,000.00	$ (17,876.00)	
23	Open	09/30/14	$ -	$ 6,238,420.00	$ 6,238,420.00	$ 34,000.00	$ 5,353,705.01	$ 5,387,705.01	$ (850,714.99)	
24	Open	09/30/14	$ -	$ 17,595,854.00	$ 17,595,854.00	$ -	$ 15,494,476.25	$ 15,494,476.25	$ (2,101,377.75)	
25	Open	09/30/14	$ -	$ 9,286,290.00	$ 9,286,290.00	$ -	$ 9,223,887.01	$ 9,223,887.01	$ (62,402.99)	
26	Completed	09/30/11	$ -	$ 873,680.00	$ 873,680.00	$ -	$ 759,301.00	$ 759,301.00	$ (114,379.00)	
27	Open	11/30/14	$ -	$ 9,363,121.00	$ 9,363,121.00	$ 0.00	$ 8,330,167.35	$ 8,330,167.35	$ (1,032,953.65)	
28	Open	09/30/14	$ -	$ 556,341.00	$ 556,341.00	$ -	$ 556,252.00	$ 556,252.00	$ (89.00)	
29	Open	09/30/14	$ -	$ 34,057,400.00	$ 34,057,400.00	$ -	$ 32,106,340.13	$ 32,106,340.13	$ (1,951,059.87)	
30	Open	02/29/16	$ -	$ 8,878,928.00	$ 8,878,928.00	$ -	$ 4,961,536.00	$ 4,961,536.00	$ (3,917,392.00)	
31	Open	09/30/14	$ -	$ 16,742,769.00	$ 16,742,769.00	$ -	$ 16,742,768.01	$ 16,742,768.01	$ (0.99)	
32	Canceled		$ -	$ -	$ -	$ -	$ -	$ -	$ -	
33	Completed	07/29/11	$ -	$ 163,659.00	$ 163,659.00	$ -	$ 143,400.00	$ 143,400.00	$ (20,259.00)	
34	Completed	09/30/11	$ -	$ 53,707.00	$ 53,707.00	$ -	$ 48,197.00	$ 48,197.00	$ (5,510.00)	
35	Completed	07/31/11	$ -	$ 75,358.00	$ 75,358.00	$ -	$ 68,763.00	$ 68,763.00	$ (6,595.00)	
36	Completed	12/31/12	$ -	$ 527,413.00	$ 527,413.00	$ -	$ 571,953.00	$ 571,953.00	$ 44,540.00	Over Run
37	Completed	10/31/11	$ -	$ 9,890.00	$ 9,890.00	$ -	$ 9,735.00	$ 9,735.00	$ (155.00)	
38	Completed	09/30/11	$ -	$ 22,669.00	$ 22,669.00	$ -	$ 24,125.00	$ 24,125.00	$ 1,456.00	Over Run
39	Open	09/30/14	$ -	$ 6,831,652.00	$ 6,831,652.00	$ -	$ 6,725,290.00	$ 6,725,290.00	$ (106,362.00)	
40	Open	09/30/14	$ -	$ 2,782,309.00	$ 2,782,309.00	$ -	$ 2,240,616.00	$ 2,240,616.00	$ (541,693.00)	
41	Open	02/29/16	$ -	$ 12,337,705.00	$ 12,337,705.00	$ -	$ 1,681,950.00	$ 1,681,950.00	$ (10,655,755.00)	

Engineering Services Contract (ESC) NNK11EA08C - Attachment J-02 Task Order Summary

Mod 95

Task Order	Status	End Date	Value Change	Task Order Value (Estimated)		Obligated	Incremental Funding		Funding Balance	
				Changed From	Changed To		Changed From	Changed To		
42	Open	09/30/14	$ -	$ 28,438,351.00	**$ 28,438,351.00**	$ -	$ 24,464,404.00	**$ 24,464,404.00**	$ (3,973,947.00)	
43	Open	09/30/14	$ -	$ 905,901.00	**$ 905,901.00**	$ -	$ 769,882.00	**$ 769,882.00**	$ (136,019.00)	
44	Completed	01/31/14	$ -	$ 257,698.00	**$ 257,698.00**	$ -	$ 232,980.00	**$ 232,980.00**	$ (24,718.00)	
45	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
46	Open	09/30/15	$ -	$ 974,933.00	**$ 974,933.00**	$ -	$ 768,203.00	**$ 768,203.00**	$ (206,730.00)	
47	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
48	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
49	Completed	09/30/11	$ 0.00	$ 16,965.00	**$ 16,965.00**	$ -	$ 16,965.84	**$ 16,965.84**	$ 0.84	Over Run
50	Completed	04/30/11	$ 0.00	$ 6,764.00	**$ 6,764.00**	$ -	$ 6,763.29	**$ 6,763.29**	$ (0.71)	
51	Open	09/30/14	$ 2,435,634.00	$ 31,370,619.00	**$ 33,806,253.00**	$ 1,332,300.00	$ 30,225,860.01	**$ 31,558,160.01**	$ (2,248,092.99)	
52	Completed	12/09/11	$ -	$ 363,526.00	**$ 363,526.00**	$ -	$ 348,316.00	**$ 348,316.00**	$ (15,210.00)	
53	Completed	07/31/11	$ -	$ 57,671.00	**$ 57,671.00**	$ -	$ 57,450.00	**$ 57,450.00**	$ (221.00)	
54	Completed	06/30/12	$ (0.00)	$ 198,967.00	**$ 198,967.00**	$ -	$ 197,135.00	**$ 197,135.00**	$ (1,832.00)	
55	Completed	09/30/11	$ -	$ 58,137.00	**$ 58,137.00**	$ -	$ 61,437.00	**$ 61,437.00**	$ 3,300.00	Over Run
56	Open	09/30/14	$ -	$ 644,153.00	**$ 644,153.00**	$ 7,089.00	$ 374,099.02	**$ 381,188.02**	$ (262,964.98)	
57	Completed	06/15/12	$ -	$ 36,174.00	**$ 36,174.00**	$ -	$ 34,791.00	**$ 34,791.00**	$ (1,383.00)	
58	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
59	Completed	04/30/12	$ (0.00)	$ 137,739.00	**$ 137,739.00**	$ -	$ 136,469.00	**$ 136,469.00**	$ (1,270.00)	
60	Open	09/30/14	$ -	$ 1,227,376.00	**$ 1,227,376.00**	$ -	$ 933,315.00	**$ 933,315.00**	$ (294,061.00)	
61	Open	09/30/14	$ -	$ 135,887.00	**$ 135,887.00**	$ -	$ 100,421.03	**$ 100,421.03**	$ (35,465.97)	
62	Completed	02/29/12	$ (0.00)	$ 721,556.00	**$ 721,556.00**	$ -	$ 668,211.00	**$ 668,211.00**	$ (53,345.00)	
63	Open	09/30/14	$ -	$ 748,410.00	**$ 748,410.00**	$ -	$ 566,977.00	**$ 566,977.00**	$ (181,433.00)	
64	Open	03/31/15	$ -	$ 520,947.00	**$ 520,947.00**	$ -	$ 425,478.00	**$ 425,478.00**	$ (95,469.00)	
65	Completed	09/30/11	$ 0.00	$ 201,105.00	**$ 201,105.00**	$ -	$ 184,719.00	**$ 184,719.00**	$ (16,386.00)	
66	Completed	07/31/11	$ -	$ 211,839.00	**$ 211,839.00**	$ -	$ 170,588.00	**$ 170,588.00**	$ (41,251.00)	
67	Completed	03/31/13	$ 0.00	$ 189,586.00	**$ 189,586.00**	$ -	$ 186,182.00	**$ 186,182.00**	$ (3,404.00)	
68	Completed	09/30/11	$ -	$ 2,293.00	**$ 2,293.00**	$ -	$ 2,098.01	**$ 2,098.01**	$ (194.99)	
69	Open	09/30/14	$ -	$ 286,434.00	**$ 286,434.00**	$ -	$ 286,433.01	**$ 286,433.01**	$ (0.99)	
70	Completed	08/15/11	$ -	$ 6,685.00	**$ 6,685.00**	$ -	$ 6,664.00	**$ 6,664.00**	$ (21.00)	
71	Completed	09/30/11	$ -	$ 2,368,127.00	**$ 2,368,127.00**	$ -	$ 2,245,526.01	**$ 2,245,526.01**	$ (122,600.99)	
72	Completed	09/30/11	$ -	$ 59,034.00	**$ 59,034.00**	$ -	$ 52,731.00	**$ 52,731.00**	$ (6,303.00)	
73	Completed	09/30/12	$ -	$ 611,986.00	**$ 611,986.00**	$ -	$ 547,284.00	**$ 547,284.00**	$ (64,702.00)	
74	Open	02/29/16	$ -	$ 606,160.00	**$ 606,160.00**	$ -	$ 476,078.85	**$ 476,078.85**	$ (130,081.15)	
75	Open	02/29/16	$ -	$ 3,299,036.00	**$ 3,299,036.00**	$ -	$ 1,799,203.48	**$ 1,799,203.48**	$ (1,499,832.52)	
76	Completed	06/29/12	$ 0.00	$ 437,513.00	**$ 437,513.00**	$ -	$ 315,635.00	**$ 315,635.00**	$ (121,878.00)	
77	Completed	07/19/11	$ -	$ 25,425.00	**$ 25,425.00**	$ -	$ 21,276.00	**$ 21,276.00**	$ (4,149.00)	
78	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
79	Completed	04/15/13	$ 0.00	$ 71,212.00	**$ 71,212.00**	$ -	$ 67,414.00	**$ 67,414.00**	$ (3,798.00)	
80	Completed	10/31/11	$ -	$ 96,929.00	**$ 96,929.00**	$ -	$ 94,128.00	**$ 94,128.00**	$ (2,801.00)	
81	Completed	02/29/12	$ 0.00	$ 178,717.00	**$ 178,717.00**	$ -	$ 181,417.00	**$ 181,417.00**	$ 2,700.00	Over Run
82	Open	09/30/14	$ -	$ 1,126,128.00	**$ 1,126,128.00**	$ -	$ 821,550.00	**$ 821,550.00**	$ (304,578.00)	

Engineering Services Contract (ESC) NNK11EA08C - Attachment J-02 Task Order Summary

Mod 95

Task Order	Status	End Date	Value Change	Task Order Value (Estimated)		Obligated	Incremental Funding		Funding Balance	
				Changed From	Changed To		Changed From	Changed To		
83	Completed	08/30/13	$ -	$ 115,487.00	**$ 115,487.00**	$ -	$ 109,056.00	**$ 109,056.00**	$ (6,431.00)	
84	Completed	09/30/11	$ -	$ 127,792.00	**$ 127,792.00**	$ -	$ 118,536.00	**$ 118,536.00**	$ (9,256.00)	
85	Open	09/30/14	$ -	$ 3,566,033.00	**$ 3,566,033.00**	$ -	$ 3,023,940.00	**$ 3,023,940.00**	$ (542,093.00)	
86	Completed	11/02/12	$ -	$ 1,761,754.00	**$ 1,761,754.00**	$ -	$ 1,693,469.00	**$ 1,693,469.00**	$ (68,285.00)	
87	Completed	09/28/12	$ -	$ 104,499.00	**$ 104,499.00**	$ -	$ 98,652.00	**$ 98,652.00**	$ (5,847.00)	
88	Open	03/25/15	$ -	$ 144,943.00	**$ 144,943.00**	$ -	$ 123,285.00	**$ 123,285.00**	$ (21,658.00)	
89	Open	08/29/14	$ -	$ 306,133.00	**$ 306,133.00**	$ -	$ 251,000.00	**$ 251,000.00**	$ (55,133.00)	
90	Completed	08/23/13	$ -	$ 540,230.00	**$ 540,230.00**	$ (2,971.52)	$ 510,510.14	**$ 507,538.62**	$ (32,691.38)	
91	Open	09/30/14	$ -	$ 5,829,266.00	**$ 5,829,266.00**	$ -	$ 4,782,812.00	**$ 4,782,812.00**	$ (1,046,454.00)	
92	Open	09/30/15	$ -	$ 388,082.00	**$ 388,082.00**	$ -	$ 343,503.00	**$ 343,503.00**	$ (44,579.00)	
93	Open	09/30/15	$ -	$ 22,282,167.00	**$ 22,282,167.00**	$ -	$ 22,282,167.00	**$ 22,282,167.00**	$ -	
94	Open	12/30/15	$ -	$ 11,895,689.00	**$ 11,895,689.00**	$ -	$ 11,895,689.00	**$ 11,895,689.00**	$ -	
95	Completed	09/30/13	$ -	$ 553,975.00	**$ 553,975.00**	$ -	$ 495,315.00	**$ 495,315.00**	$ (58,660.00)	
96	Open	09/30/14	$ -	$ 1,200,735.00	**$ 1,200,735.00**	$ -	$ 1,200,735.00	**$ 1,200,735.00**	$ -	
97	Completed	07/13/12	$ -	$ 169,761.00	**$ 169,761.00**	$ -	$ 169,761.00	**$ 169,761.00**	$ -	
98	Open	09/30/14	$ -	$ 1,028,766.00	**$ 1,028,766.00**	$ -	$ 895,699.00	**$ 895,699.00**	$ (133,067.00)	
99	Completed	02/28/13	$ (0.00)	$ 106,408.00	**$ 106,408.00**	$ -	$ 104,416.01	**$ 104,416.01**	$ (1,991.99)	
100	Completed	09/30/12	$ -	$ 2,002,586.00	**$ 2,002,586.00**	$ -	$ 1,883,726.00	**$ 1,883,726.00**	$ (118,860.00)	
101	Completed	11/30/12	$ -	$ 407,694.00	**$ 407,694.00**	$ -	$ 387,605.00	**$ 387,605.00**	$ (20,089.00)	
102	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
103	Completed	09/30/13	$ -	$ 70,303.00	**$ 70,303.00**	$ -	$ 85,814.00	**$ 85,814.00**	$ 15,511.00	Over Run
104	Completed	09/21/12	$ -	$ 72,900.00	**$ 72,900.00**	$ -	$ 70,137.00	**$ 70,137.00**	$ (2,763.00)	
105	Completed	09/30/13	$ -	$ 8,556,836.00	**$ 8,556,836.00**	$ -	$ 7,595,319.00	**$ 7,595,319.00**	$ (961,517.00)	
106	Open	02/26/16	$ -	$ 10,850,987.00	**$ 10,850,987.00**	$ -	$ 10,850,987.00	**$ 10,850,987.00**	$ (0.00)	
107	Completed	09/30/12	$ -	$ 80,702.00	**$ 80,702.00**	$ -	$ 79,373.00	**$ 79,373.00**	$ (1,329.00)	
108	Open	09/30/14	$ -	$ 1,316,805.00	**$ 1,316,805.00**	$ 65,000.00	$ 1,213,388.00	**$ 1,278,388.00**	$ (38,417.00)	
109	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
110	Completed	09/30/12	$ -	$ 175,766.00	**$ 175,766.00**	$ -	$ 176,357.00	**$ 176,357.00**	$ 591.00	Over Run
111	Completed	04/26/14	$ -	$ 2,840,847.00	**$ 2,840,847.00**	$ -	$ 2,301,329.01	**$ 2,301,329.01**	$ (539,517.99)	
112	Completed	10/31/13	$ -	$ 2,698,119.00	**$ 2,698,119.00**	$ -	$ 2,407,737.00	**$ 2,407,737.00**	$ (290,382.00)	
113	Open	09/30/14	$ -	$ 6,224,159.00	**$ 6,224,159.00**	$ -	$ 5,979,729.00	**$ 5,979,729.00**	$ (244,430.00)	
114	Completed	11/30/12	$ -	$ 249,027.00	**$ 249,027.00**	$ -	$ 238,243.00	**$ 238,243.00**	$ (10,784.00)	
115	Completed	09/30/13	$ -	$ 993,867.00	**$ 993,867.00**	$ -	$ 862,564.00	**$ 862,564.00**	$ (131,303.00)	
116	Completed	03/30/13	$ -	$ 177,902.00	**$ 177,902.00**	$ -	$ 164,544.00	**$ 164,544.00**	$ (13,358.00)	
117	Completed	09/30/12	$ -	$ 57,720.00	**$ 57,720.00**	$ -	$ 45,152.00	**$ 45,152.00**	$ (12,568.00)	
118	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
119	Completed	09/28/12	$ -	$ 127,745.00	**$ 127,745.00**	$ -	$ 123,571.00	**$ 123,571.00**	$ (4,174.00)	
120	Completed	09/28/12	$ -	$ 125,455.00	**$ 125,455.00**	$ -	$ 121,474.01	**$ 121,474.01**	$ (3,980.99)	
121	Completed	10/31/12	$ -	$ 90,271.00	**$ 90,271.00**	$ -	$ 87,965.01	**$ 87,965.01**	$ (2,305.99)	
122	Completed	10/31/12	$ -	$ 156,225.00	**$ 156,225.00**	$ -	$ 146,734.00	**$ 146,734.00**	$ (9,491.00)	
123	Open	09/30/14	$ -	$ 1,393,035.00	**$ 1,393,035.00**	$ -	$ 1,325,583.00	**$ 1,325,583.00**	$ (67,452.00)	

Engineering Services Contract (ESC) NNK11EA08C - Attachment J-02 Task Order Summary

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Task Order	Status	End Date	Value Change	Task Order Value (Estimated)		Obligated	Incremental Funding		Funding Balance
				Changed From	Changed To		Changed From	Changed To	
124	Completed	11/30/12	$ -	$ 64,831.00	**$ 64,831.00**	$ -	$ 62,069.00	**$ 62,069.00**	$ (2,762.00)
125	Open	09/30/14	$ -	$ 2,955,611.00	**$ 2,955,611.00**	$ -	$ 2,691,569.00	**$ 2,691,569.00**	$ (264,042.00)
126	Open	09/30/14	$ -	$ 8,704,776.00	**$ 8,704,776.00**	$ -	$ 8,704,776.00	**$ 8,704,776.00**	$ -
127	Open	09/30/14	$ -	$ 4,067,723.00	**$ 4,067,723.00**	$ -	$ 3,630,427.00	**$ 3,630,427.00**	$ (437,296.00)
128	Open	09/30/14	$ -	$ 1,807,855.00	**$ 1,807,855.00**	$ -	$ 1,572,331.00	**$ 1,572,331.00**	$ (235,524.00)
129	Open	09/30/14	$ -	$ 3,950,607.00	**$ 3,950,607.00**	$ -	$ 2,578,936.00	**$ 2,578,936.00**	$ (1,371,671.00)
130	Open	09/30/15	$ -	$ 12,652,231.00	**$ 12,652,231.00**	$ -	$ 9,029,896.00	**$ 9,029,896.00**	$ (3,622,335.00)
131	Open	09/30/14	$ -	$ 12,573,897.00	**$ 12,573,897.00**	$ -	$ 12,538,722.00	**$ 12,538,722.00**	$ (35,175.00)
132	Open	09/30/14	$ -	$ 2,437,965.00	**$ 2,437,965.00**	$ -	$ 2,348,577.00	**$ 2,348,577.00**	$ (89,388.00)
133	Completed	12/13/13	$ -	$ 259,636.00	**$ 259,636.00**	$ -	$ 242,403.00	**$ 242,403.00**	$ (17,233.00)
134	Open	09/30/14	$ -	$ 1,092,230.00	**$ 1,092,230.00**	$ -	$ 1,009,306.00	**$ 1,009,306.00**	$ (82,924.00)
135	Open	09/30/14	$ -	$ 442,539.00	**$ 442,539.00**	$ -	$ 442,381.00	**$ 442,381.00**	$ (158.00)
136	Completed	11/29/13	$ -	$ 91,608.00	**$ 91,608.00**	$ -	$ 79,436.00	**$ 79,436.00**	$ (12,172.00)
137	Completed	02/07/14	$ (442,629.00)	$ 986,585.00	**$ 543,956.00**	$ -	$ 508,428.00	**$ 508,428.00**	$ (35,528.00)
138	Open	09/30/14	$ -	$ 240,556.00	**$ 240,556.00**	$ -	$ 224,053.00	**$ 224,053.00**	$ (16,503.00)
139	Completed	07/26/13	$ (0.00)	$ 290,763.00	**$ 290,763.00**	$ -	$ 269,532.00	**$ 269,532.00**	$ (21,231.00)
140	Open	09/30/14	$ -	$ 54,060.00	**$ 54,060.00**	$ -	$ 54,060.00	**$ 54,060.00**	$ -
141	Completed	11/30/12	$ -	$ 61,027.00	**$ 61,027.00**	$ -	$ 59,948.00	**$ 59,948.00**	$ (1,079.00)
142	Completed	05/31/13	$ -	$ 126,781.00	**$ 126,781.00**	$ -	$ 125,309.00	**$ 125,309.00**	$ (1,472.00)
143	Completed	08/01/13	$ -	$ 105,463.00	**$ 105,463.00**	$ -	$ 89,886.00	**$ 89,886.00**	$ (15,577.00)
144	Open	12/19/14	$ -	$ 3,509,994.00	**$ 3,509,994.00**	$ -	$ 3,024,259.00	**$ 3,024,259.00**	$ (485,735.00)
145	Completed	09/30/13	$ -	$ 1,786,353.00	**$ 1,786,353.00**	$ -	$ 1,363,406.01	**$ 1,363,406.01**	$ (422,946.99)
146	Completed	09/30/13	$ -	$ 637,717.00	**$ 637,717.00**	$ -	$ 576,867.00	**$ 576,867.00**	$ (60,850.00)
147	Completed	09/07/12	$ 0.00	$ 1,475.00	**$ 1,475.00**	$ -	$ 1,310.00	**$ 1,310.00**	$ (165.00)
148	Canceled	05/02/12	$ -	$ -	**$ -**	$ -	$ 0.01	**$ 0.01**	$ 0.01
149	Completed	06/30/14	$ -	$ 10,232,030.00	**$ 10,232,030.00**	$ -	$ 10,019,578.00	**$ 10,019,578.00**	$ (212,452.00)
150	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -
151	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -
152	Completed	10/31/13	$ -	$ 1,324,608.00	**$ 1,324,608.00**	$ -	$ 1,018,218.02	**$ 1,018,218.02**	$ (306,389.98)
153	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -
154	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -
155	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -
156	Open	09/30/14	$ -	$ 944,495.00	**$ 944,495.00**	$ -	$ 894,604.00	**$ 894,604.00**	$ (49,891.00)
157	Open	06/30/15	$ -	$ 859,802.00	**$ 859,802.00**	$ -	$ 685,683.00	**$ 685,683.00**	$ (174,119.00)
158	Open	09/30/14	$ -	$ 548,745.00	**$ 548,745.00**	$ -	$ 530,745.00	**$ 530,745.00**	$ (18,000.00)
159	Completed	08/31/13	$ -	$ 173,872.00	**$ 173,872.00**	$ -	$ 159,884.00	**$ 159,884.00**	$ (13,988.00)
160	Completed	06/30/13	$ -	$ 48,919.00	**$ 48,919.00**	$ -	$ 48,831.00	**$ 48,831.00**	$ (88.00)
161	Completed	04/30/13	$ -	$ 122,298.00	**$ 122,298.00**	$ -	$ 113,768.00	**$ 113,768.00**	$ (8,530.00)
162	Completed	04/22/14	$ -	$ 64,096.00	**$ 64,096.00**	$ -	$ 63,757.01	**$ 63,757.01**	$ (338.99)
163	Completed	04/22/14	$ -	$ 70,496.00	**$ 70,496.00**	$ (2,361.99)	$ 70,496.00	**$ 68,134.01**	$ (2,361.99)
164	Open	10/14/14	$ -	$ 91,970.00	**$ 91,970.00**	$ -	$ 91,970.00	**$ 91,970.00**	$ -

Engineering Services Contract (ESC) NNK11EA08C - Attachment J-02 Task Order Summary

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Task Order	Status	End Date	Value Change	Task Order Value (Estimated)		Obligated	Incremental Funding		Funding Balance	
				Changed From	Changed To		Changed From	Changed To		
165	Completed	04/15/14	$ -	$ 160,274.00	**$ 160,274.00**	$ -	$ 152,100.00	**$ 152,100.00**	$ (8,174.00)	
166	Open	06/30/15	$ -	$ 13,659,976.00	**$ 13,659,976.00**	$ -	$ 13,659,976.00	**$ 13,659,976.00**	$ (0.00)	
167	Completed	09/30/13	$ -	$ 70,516.00	**$ 70,516.00**	$ -	$ 73,787.00	**$ 73,787.00**	$ 3,271.00	Over Run
168	Open	09/30/14	$ -	$ 43,708,760.00	**$ 43,708,760.00**	$ -	$ 38,837,419.02	**$ 38,837,419.02**	$ (4,871,340.98)	
169	Open	06/30/15	$ -	$ 10,639,880.00	**$ 10,639,880.00**	$ -	$ 10,639,880.00	**$ 10,639,880.00**	$ -	
170	Open	02/26/16	$ -	$ 214,384.00	**$ 214,384.00**	$ -	$ 214,384.00	**$ 214,384.00**	$ -	
171	Open	09/30/15	$ -	$ 169,878.00	**$ 169,878.00**	$ -	$ 169,878.00	**$ 169,878.00**	$ 0.00	
172	Open	02/28/16	$ -	$ 403,709.00	**$ 403,709.00**	$ -	$ 403,709.00	**$ 403,709.00**	$ 0.00	
173	Completed	06/25/14	$ -	$ 500,133.00	**$ 500,133.00**	$ -	$ 485,000.00	**$ 485,000.00**	$ (15,133.00)	
174	Open	01/29/16	$ -	$ 1,659,327.00	**$ 1,659,327.00**	$ -	$ 1,659,327.00	**$ 1,659,327.00**	$ -	
175	Open	09/30/14	$ -	$ 2,243,949.00	**$ 2,243,949.00**	$ -	$ 2,243,949.00	**$ 2,243,949.00**	$ -	
176	Open	10/31/14	$ -	$ 51,087.00	**$ 51,087.00**	$ -	$ 51,087.00	**$ 51,087.00**	$ -	
177	Open	12/26/14	$ -	$ 677,334.00	**$ 677,334.00**	$ -	$ 575,463.00	**$ 575,463.00**	$ (101,871.00)	
178	Completed	06/30/13	$ -	$ 4,949.00	**$ 4,949.00**	$ -	$ 4,517.00	**$ 4,517.00**	$ (432.00)	
179	Open	01/29/16	$ -	$ 1,232,179.00	**$ 1,232,179.00**	$ -	$ 1,232,179.00	**$ 1,232,179.00**	$ -	
180	Completed	02/28/14	$ -	$ 1,038,680.00	**$ 1,038,680.00**	$ -	$ 916,783.02	**$ 916,783.02**	$ (121,896.98)	
181	Completed	07/26/13	$ -	$ 65,183.00	**$ 65,183.00**	$ -	$ 53,422.00	**$ 53,422.00**	$ (11,761.00)	
182	Open	09/30/14	$ (2,964,550.00)	$ 4,077,276.00	**$ 1,112,726.00**	$ -	$ 741,376.00	**$ 741,376.00**	$ (371,350.00)	
183	Open	09/30/14	$ -	$ 1,180,486.00	**$ 1,180,486.00**	$ -	$ 1,180,486.00	**$ 1,180,486.00**	$ (0.00)	
184	Completed	12/31/13	$ -	$ 64,286.00	**$ 64,286.00**	$ -	$ 64,286.00	**$ 64,286.00**	$ (0.00)	
185	Completed	09/30/13	$ -	$ 159,887.00	**$ 159,887.00**	$ (26,326.00)	$ 159,887.00	**$ 133,561.00**	$ (26,326.00)	
186	Open	09/30/14	$ -	$ 750,458.00	**$ 750,458.00**	$ -	$ 750,458.00	**$ 750,458.00**	$ -	
187	Completed	09/30/13	$ -	$ 423,059.00	**$ 423,059.00**	$ -	$ 411,957.00	**$ 411,957.00**	$ (11,102.00)	
188	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
189	Completed	04/30/14	$ -	$ 60,088.00	**$ 60,088.00**	$ -	$ 60,088.00	**$ 60,088.00**	$ (0.00)	
190	Open	09/26/14	$ -	$ 170,298.00	**$ 170,298.00**	$ -	$ 170,298.00	**$ 170,298.00**	$ -	
191	Open	09/30/14	$ -	$ 656,037.00	**$ 656,037.00**	$ -	$ 529,449.00	**$ 529,449.00**	$ (126,588.00)	
192	Open	09/30/14	$ -	$ 2,969,103.00	**$ 2,969,103.00**	$ -	$ 2,635,949.00	**$ 2,635,949.00**	$ (333,154.00)	
193	Completed	07/30/14	$ -	$ 257,463.00	**$ 257,463.00**	$ -	$ 257,463.00	**$ 257,463.00**	$ -	
194	Open	02/28/16	$ -	$ 331,485.00	**$ 331,485.00**	$ -	$ 190,627.00	**$ 190,627.00**	$ (140,858.00)	
195	Completed	02/28/14	$ -	$ 55,235.00	**$ 55,235.00**	$ -	$ 55,137.00	**$ 55,137.00**	$ (98.00)	
196	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
197	Open	03/27/15	$ -	$ 70,006.00	**$ 70,006.00**	$ -	$ 55,000.00	**$ 55,000.00**	$ (15,006.00)	
198	Open	08/29/14	$ -	$ 94,976.00	**$ 94,976.00**	$ -	$ 94,976.00	**$ 94,976.00**	$ -	
199	Open	01/30/15	$ -	$ 308,680.00	**$ 308,680.00**	$ -	$ 308,680.00	**$ 308,680.00**	$ -	
200	Completed	11/29/13	$ -	$ 42,755.00	**$ 42,755.00**	$ -	$ 42,755.00	**$ 42,755.00**	$ 0.00	
201	Open	12/31/14	$ -	$ 3,019,310.00	**$ 3,019,310.00**	$ -	$ 1,643,620.00	**$ 1,643,620.00**	$ (1,375,690.00)	
202	Open	02/26/16	$ -	$ 9,243,408.00	**$ 9,243,408.00**	$ 1,014,000.00	$ 4,892,321.00	**$ 5,906,321.00**	$ (3,337,087.00)	
203	Canceled		$ -	$ -	**$ -**	$ -	$ -	**$ -**	$ -	
204	Open	11/13/14	$ -	$ 6,323,976.00	**$ 6,323,976.00**	$ -	$ 6,323,276.00	**$ 6,323,276.00**	$ (700.00)	
205	Open	09/30/14	$ -	$ 400,154.00	**$ 400,154.00**	$ -	$ 338,900.00	**$ 338,900.00**	$ (61,254.00)	

Engineering Services Contract (ESC) NNK11EA08C - Attachment J-02 Task Order Summary

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Task Order	Status	End Date	Value Change	Task Order Value (Estimated)		Obligated	Incremental Funding		Funding Balance	
				Changed From	Changed To		Changed From	Changed To		
206	Completed	01/31/14	$ -	$ 37,382.00	**$ 37,382.00**	$ -	$ 29,651.01	**$ 29,651.01**	$ (7,730.99)	
207	Completed	05/30/14	$ -	$ 18,083.00	**$ 18,083.00**	$ -	$ 18,083.00	**$ 18,083.00**	$ -	
208	Completed	07/30/14	$ -	$ 194,955.00	**$ 194,955.00**	$ -	$ 194,955.00	**$ 194,955.00**	$ -	
209	Completed	06/16/14	$ -	$ 69,660.00	**$ 69,660.00**	$ -	$ 69,660.00	**$ 69,660.00**	$ -	
210	Open	09/30/14	$ -	$ 653,656.00	**$ 653,656.00**	$ -	$ 600,000.00	**$ 600,000.00**	$ (53,656.00)	
211	Completed	02/14/14	$ -	$ 20,729.00	**$ 20,729.00**	$ -	$ 16,469.00	**$ 16,469.00**	$ (4,260.00)	
212	Completed	05/30/14	$ -	$ 34,970.00	**$ 34,970.00**	$ -	$ 35,454.00	**$ 35,454.00**	$ 484.00	Over Run
213	Open	09/30/14	$ -	$ 4,065,300.00	**$ 4,065,300.00**	$ -	$ 3,971,436.01	**$ 3,971,436.01**	$ (93,863.99)	
214	Open	05/31/15	$ -	$ 35,662.00	**$ 35,662.00**	$ -	$ 32,789.00	**$ 32,789.00**	$ (2,873.00)	
215	Open	09/30/15	$ -	$ 6,643,989.00	**$ 6,643,989.00**	$ -	$ 3,713,665.00	**$ 3,713,665.00**	$ (2,930,324.00)	
216	Open	03/31/15	$ -	$ 96,098.00	**$ 96,098.00**	$ -	$ 30,000.00	**$ 30,000.00**	$ (66,098.00)	
217	Open	09/30/14	$ -	$ 189,996.00	**$ 189,996.00**	$ -	$ 189,996.00	**$ 189,996.00**	$ -	
218	Open	02/29/16	$ -	$ 51,967.00	**$ 51,967.00**	$ -	$ 51,882.00	**$ 51,882.00**	$ (85.00)	
219	Open	09/30/14	$ -	$ 299,191.00	**$ 299,191.00**	$ -	$ 250,000.00	**$ 250,000.00**	$ (49,191.00)	
221	Open	09/30/14	$ -	$ 130,097.00	**$ 130,097.00**	$ -	$ 126,786.00	**$ 126,786.00**	$ (3,311.00)	
222	Open	09/15/14	$ (568,320.00)	$ 749,204.00	**$ 180,884.00**	$ (319,116.00)	$ 500,000.00	**$ 180,884.00**	$ -	
223	Open	09/30/15	$ 62,956.00	$ 103,069.00	**$ 166,025.00**	$ 102,250.00	$ 24,900.00	**$ 127,150.00**	$ (38,875.00)	
224	Open	01/19/15	$ -	$ 100,000.00	**$ 100,000.00**	$ -	$ 100,000.00	**$ 100,000.00**	$ -	
225	Open	10/31/14	$ -	$ 85,021.00	**$ 85,021.00**	$ -	$ 85,021.00	**$ 85,021.00**	$ -	
226	Open	01/30/15	$ -	$ 95,001.00	**$ 95,001.00**	$ -	$ 95,001.00	**$ 95,001.00**	$ -	
227	Open	09/30/14	$ -	$ 180,122.00	**$ 180,122.00**	$ -	$ 145,113.00	**$ 145,113.00**	$ (35,009.00)	
229	Open	09/30/14	$ -	$ 74,997.00	**$ 74,997.00**	$ 23,997.00	$ 51,000.00	**$ 74,997.00**	$ -	
230	Open	09/30/14	$ -	$ 111,994.00	**$ 111,994.00**	$ -	$ 94,478.00	**$ 94,478.00**	$ (17,516.00)	
231	Open	09/30/14	$ -	$ 226,985.00	**$ 226,985.00**	$ -	$ 223,550.00	**$ 223,550.00**	$ (3,435.00)	
232	Open	04/30/15	$ -	$ 38,080.00	**$ 38,080.00**	$ -	$ 38,080.00	**$ 38,080.00**	$ -	
233	Open	03/27/15	$ -	$ 109,971.00	**$ 109,971.00**	$ -	$ 69,000.00	**$ 69,000.00**	$ (40,971.00)	
234	Open	03/27/15	$ -	$ 74,960.00	**$ 74,960.00**	$ -	$ 43,000.00	**$ 43,000.00**	$ (31,960.00)	
235	Open	04/30/15	$ -	$ 149,490.00	**$ 149,490.00**	$ -	$ 149,490.00	**$ 149,490.00**	$ -	
236	Open	03/27/15	$ -	$ 144,997.00	**$ 144,997.00**	$ -	$ 144,997.00	**$ 144,997.00**	$ -	
237	Open	01/31/16	$ -	$ 6,665,475.00	**$ 6,665,475.00**	$ -	$ 4,163,200.00	**$ 4,163,200.00**	$ (2,502,275.00)	
238	Open	09/30/14	$ -	$ 911,057.00	**$ 911,057.00**	$ -	$ 883,333.00	**$ 883,333.00**	$ (27,724.00)	
243	Open	06/30/15	$ -	$ 99,980.00	**$ 99,980.00**	$ -	$ 99,980.00	**$ 99,980.00**	$ -	
244	Open	12/31/14	$ -	$ 60,305.00	**$ 60,305.00**	$ -	$ 60,305.00	**$ 60,305.00**	$ -	
245	Open	06/30/15	$ -	$ 80,567.00	**$ 80,567.00**	$ -	$ 80,567.00	**$ 80,567.00**	$ -	
247	Open	09/30/14	$ -	$ 271,286.00	**$ 271,286.00**	$ -	$ 200,000.00	**$ 200,000.00**	$ (71,286.00)	
249	Open	07/31/15	$ 147,240.00	$ -	**$ 147,240.00**	$ 147,240.00	$ -	**$ 147,240.00**	$ -	
251	Open	06/30/15	$ -	$ 119,834.00	**$ 119,834.00**	$ -	$ 119,834.00	**$ 119,834.00**	$ -	
					$ -			**$ -**	$ -	
CLIN 002 - IDIQ			**$ (1,329,669.00)**	**$ 542,467,492.00**	**$ 541,137,823.00**	**$ 2,595,100.49**	**$ 473,210,167.56**	**$ 475,805,268.05**	**$ (65,332,554.95)**	

SIGNATURE PAGE

Submitted by :

Mary Kiss
Contracting Officer

Approval:

Robert D. Cabana
Director, John F. Kennedy Space Center
ESC Fee Determining Official

A. Purpose

The Award Fee Evaluation Plan defines the process by which the Government will encourage and reward the Contractor for safe, high quality, cost effective performance in fulfilling the requirements set forth in the Engineering Services Contract (ESC); demonstration of continuous improvement; and effective communications, flexibility, and customer service. The award fee process enables the Government to focus on successful outcomes, overall operational and cost performance, and to emphasize those aspects of critical milestone achievements essential to reach performance objectives. The award fee process includes subjective and objective assessments by the Government, and may include consideration of predetermined objective performance criteria in the award fee evaluation.

B. Evaluation Procedures

The award fee evaluation will'be determined annually in accordance with the KDP-KSC-P-2402, Award Fee Evaluation Process. The establishment of the initial Award Fee Board (AFB) membership for ESC is accomplished by following KDP-KSC-P-2402. Any changes to the AFB membership after approval of the initial AFB membership will be approved by the Fee Determination Official (FDO). The AFB will review and consider the award fee evaluation report, prepared by the ESC Contracting Officer's Technical Representative (COTR). The COTR will be the focal point for the accumulation and development of award fee evaluation reports, reviews, and presentations, as well as discussions with Contractor management on award fee matters.

Areas of Emphasis (AOEs), and any supporting performance metrics, as necessary, will be established for each evaluation period and communicated by the Contracting Officer (CO) to the Contractor at least 30 calendar days prior to the start of the evaluation period. The AOEs will identify the performance elements of particular importance which are deserving of special attention during the evaluation period. The AOEs, and any supporting performance metrics, will not detail the entire spectrum of performance that will be evaluated in determining the performance score and award fee. Other pertinent factors included under the contract and general factors bearing upon overall Contractor performance will be considered in the evaluation as the facts and circumstances of each period may require.

The award fee plan may be revised unilaterally by the Government prior to the beginning of any evaluation period as long as the CO notifies the Contractor, in writing, of any such changes 30 days prior to the start of the relevant evaluation period. Any changes occurring within the evaluation period shall require mutual agreement of the Government and Contractor.

The Contractor's performance for the baseline and ID/IQ portions of the contract will be continually assessed by Government technical monitors throughout the evaluation period. The Government may formally assess the Contractor's overall performance at the mid-point of each evaluation period. In this case, the COTR will communicate this assessment in writing to the Contractor and copies will be provided to AFB members.

Within 30 calendar days following each annual evaluation period, the COTR will prepare a summary report on the evaluation of the Contractor's performance based on all AOEs and any supporting metrics, Government surveillance data, and Contractor furnished data. The Contractor will be furnished a copy of the evaluation report for the period. Within 3 working days from receipt of the evaluation report, the Contractor may submit additional data relevant to the performance evaluation in writing to the COTR. The contractor may, at their option, submit a self-assessment report and/or provide a self-assessment presentation lasting no more than 10 minutes. The contractor's presentation should not repeat the contents of the Government's AF report, but should address other key aspects of the contractor's performance during the AF period which the contractor desires to add or emphasize to the AFB. Both the report and presentation will be provided to the AFB.

C. Evaluation Factors and Weighted Scoring System

The Government will use five factors – Safety, Technical Performance, Schedule Performance, Small Business Subcontracting, and Cost Control – to determine the Total Award Fee Score for each annual evaluation period. The Government will determine a score, 0-100, for each evaluation factor, based on the performance evaluation. Each factor's score will be weighted based on the following respective contribution to the Total Award Fee Score; Safety 15%, Technical Performance 35%, Schedule Performance 15%, Small Business Subcontracting 10%, and Cost Control 25%. The following sections describe each evaluation factor and the Total Award Fee Score calculations.

1. Safety Evaluation Factor: The Government's evaluation of the Contractor's safety performance will include an assessment of the overall effectiveness of the Contractor's safety program. The evaluation will consider safety performance affecting personnel, facilities, ground and flight hardware and other assets.

   Safety performance standards and metrics may be identified for specific award fee periods to support the evaluation of the Contractor's safety performance and will be communicated by the CO to the Contractor, at least 30 days prior to the start of the period.

2. Technical Performance Evaluation Factor: The Government's evaluation of the Contractor's technical performance will include an assessment of the Contractor's performance in areas such as management effectiveness (including relationships with the Government and other Contractors, as well as management of subcontractors), documented AOEs, process improvement, risk management (including mission success, safety, security, health, export control, and damage to the environment, as applicable), and customer satisfaction. The technical performance evaluation will consider the contractor's efforts in achieving the contract requirements, including the Contractor's effectiveness, quality, and flexibility.

   Technical performance standards and metrics may be identified for specific award fee periods to support the evaluation of the Contractors technical performance and will be communicated by the CO to the Contractor, at least 30 days prior to the start of the period.

3. Schedule Performance Evaluation Factor: The Government's evaluation of the Contractor's effectiveness in meeting contract milestones no later than target dates. The assessment will include contract deliverables, as well as, all identified Task Order milestones.

4. Small Business Subcontracting Evaluation Factor: The Government will evaluate the Contractor's performance in meeting subcontracting goals established for Small and Small Disadvantaged Businesses. The evaluation will include an assessment of both the complexity and quantity of work assigned to small and small disadvantaged subcontractors.

5. Cost Control Evaluation Factor: The Government will evaluate the Contractor's cost management, cost estimating accuracy, and ability to control costs. The predominant consideration of this factor will be a measurement of the Contractor's performance against the negotiated estimated cost of the contract for the evaluation period. This estimated cost will be adjusted to include the value of undefinitized change orders and may be adjusted to include the value for costs outside of the Contractor's control.

The sum of the weighted scores of the Safety, Technical Performance, Schedule Performance, and Small Business Subcontracting Evaluation Factors equals the Performance Evaluation Score (PES). The Contractor may earn up to the maximum cost score only if the Weighted Performance Evaluation Score (WPES) equals 76 or above. WPES falling within the range 50-75 will permit the Contractor to be rewarded for cost control as prescribed in Table 1 below, and not at the maximum available cost control weight, to the degree that the Contractor prudently managed costs while meeting contract requirements. The Contractor shall receive a score of zero (0) for cost control if the WPES is less than "50" or if the Contractor significantly overruns costs within its control. The Contractor may not receive a cost control score of zero (0) if overruns are insignificant; however, cost control scores will decrease sharply as overruns increase.

The following definitions and formulas will be used to determine the Total Award Fee Score:

Definitions

Safety Factor Score	=	SFS
Safety Factor Weight (15%)	=	SFW
Technical Performance Factor Score	=	TPFS
Technical Performance Factor Weight (35%)	=	TPFW
Schedule Performance Factor Score	=	SPFS
Schedule Performance Factor Weight (15%)	=	SPFW
Small Business Subcontracting Factor Score	=	SBFS
Small Business Subcontracting Factor Weight (10%)	=	SBFW
Performance Evaluation Score	=	PES
Weighted Performance Evaluation Score	=	WPES
Cost Control Evaluation Score	=	CES
Cost Control Weight (see below)	=	CCW

Formulas

PES = (SFS)*(SFW) + (TPFS)*(TPFW) + (SPFS)*(SPFW)+(SBFS)*(SBFW)

WPES = PES/75 * 100

If WPES ≥ 81, then CCW = 25%

If WPES between 61 and 80, then use values in Table 1 to adjust CCW

If WPES ≤ 60, then CCW = 0

Total Award Fee Score = (PES) + (CES)*(CCW)

Table 1 – Cost Control Weight Adjustments

WPES	CCW (%)		WPES	CCW (%)
80	24		70	14
79	23		69	13
78	22		68	12
77	21		67	11
76	20		66	10
75	19		65	9
74	18		64	8
73	17		63	7
72	16		62	6
71	15		61	5

An overall award fee performance determination of zero (0) shall be made for any evaluation period when there is a major breach of safety or security as defined in NFS 1852.223-75, “Major Breach of Safety or Security”.

D. Award Fee Performance Determination

After consulting with the COTR and the AFB, the FDO will make a final, unilateral award fee performance determination. The FDO will make the award fee performance determination within 40 calendar days from the end of the period being evaluated. The FDO's unilateral determination shall not be subject to the clause of this contract entitled "Disputes" and there are no provisions for additional appeal rights. After receipt of the FDO's Award Fee Performance Determination Letter, the CO will promptly prepare a contract modification reflecting the award fee adjective rating, weighted evaluation score, and award fee earned. Award fee which is not earned in an evaluation period cannot be reallocated to future evaluation periods.

E. Numerical Scores, Adjective Definitions and Award Fee Scale

1. Numerical Scores and Award Fee Scale. The FDO may award numerical scores from a range of zero (0) to 100. Total Award Fee scores of zero (0) to 49 earn

zero (0) percent of available award fee for that evaluation period. Total Award Fee scores of 50 and greater have a linear relationship to the percentage of award fee earned for that evaluation period. For example, a numerical score of 85 would earn 85% of available award fee for that evaluation period. Decimals of 0.5 and above will be rounded up to the nearest whole number. Decimals of 0.4 and below will be rounded down to the nearest whole number.

2. Adjective Rating, Definitions and Numerical Range. The following adjective ratings, definitions and numerical ranges shall be used to define the various levels of performance under the contract:

NUMERICAL RANGE	ADJECTIVE RATING	ADJECTIVE DEFINITION
91 – 100%	Excellent	Contractor has exceeded almost all of the significant award-fee criteria and has met overall cost, schedule, and technical performance requirements of the contract in the aggregate as defined and measured against the criteria in the award-fee plan for the award-fee evaluation period.
76 – 90%	Very Good	Contractor has exceeded many of the significant award-fee criteria and has met overall cost, schedule, and technical performance requirements of the contract in the aggregate as defined and measured against the criteria in the award-fee plan for the award-fee evaluation period.
51 – 75%	Good	Contractor has exceeded some of the significant award-fee criteria and has met overall cost, schedule, and technical performance requirements of the contract in the aggregate as defined and measured against the criteria in the award-fee plan for the award-fee evaluation period.
50%	Satisfactory	Contractor has met overall cost, schedule, and technical performance requirements of the contract in the aggregate as defined and measured against the criteria in the award-fee plan for the award-fee evaluation period.
below 50%	Unsatisfactory	Contractor has failed to meet overall cost, schedule, and technical performance requirements of the contract in the aggregate as defined and measured against the criteria in the award-fee plan for the award-fee evaluation period.

F. Award Fee Pool Earned Percentages

Award-Fee Adjectival Rating	Award-Fee Pool Available to Be Earned	Description
Excellent	91%-100%	Contractor has exceeded almost all of the significant award-fee criteria and has met overall cost, schedule, and technical performance requirements of the contract in the aggregate as defined and measured against the criteria in the awardfee plan for the award-fee evaluation period.
Very Good	76%-90%	Contractor has exceeded many of the significant award-fee criteria and has met overall cost, schedule, and technical performance requirements of the contract in the aggregate as defined and measured against the criteria in the award-fee plan for the award-fee evaluation period.
Good	51%-75%	Contractor has exceeded some of the significant award-fee criteria and has met overall cost, schedule, and technical performance requirements of the contract in the aggregate as defined and measured against the criteria in the award-fee plan for the award-fee evaluation period.
Satisfactory	No Greater Than 50%	Contractor has met overall cost, schedule, and technical performance requirements of the contract in the aggregate as defined and measured against the criteria in the award-fee plan for the award-fee evaluation period.
Unsatisfactory	0%	Contractor has failed to meet overall cost, schedule, and technical performance requirements of the contract in the aggregate as defined and measured against the criteria in the award-fee plan for the award-fee evaluation period.

G. Provisional Payment of Award Fee

Pending a determination of the amount of award fee earned for an evaluation period, a portion of the available award fee for that period will be provisionally paid to the contractor on a monthly basis in accordance with ESC Contract Clause G.8 NFS 1852.216-76.

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ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-04
TASK ORDER PRICING RATE SCHEDULE

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Attachment J-04A - T.O. Pricing Schedule - M&A Rates

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ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-05
GOVERNMENT FURNISHED FACILITIES

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ESC Government Provided Facilities				
KSC Area	Facility Number	Acronym	Title	Shared with other contractors
Industrial Area	M7-0409	EDL	Engineeering Development Laboratory & Trailers	X
Industrial Area	M7-0360	SSPF	Space Station Processing Facility	X
Industrial Area	M7-0355	O&C	Operations & Checkout Building	X
Industrial Area	M6-0399	HQ	KSC Headquarters Building	X
Industrial Area	M7-0305	LETF	Launch Equipment Test Facility	
Industrial Area	M6-1025	SLSL	Space Life Sciences Laboratory	
Industrial Area	M7-0557	CTF	Cryogenic Test Facility	
Industrial Area	M6-0342	CIF	Central Instrumentation Facility	X
Industrial Area	M7-0581	N/A	Prototype Shop	
Industrial Area	M6-0336	EML	Electromagnetic Laboratory	X
LC-39	K6-0848	VAB	Vehicle Assembly Building	X
LC-39	K6-1696	CRCA	Component Refurbishment and Chemical Analysis Facililty	
LC-39	K7-0569	CCOB	Converter/Compressor Operations Building	
LC-39	TRL-104	OSB II	Operations Support Building II Trailer 104	
LC-39	K6-1249	OSB II	Operations Support Building II	X
CCAFS	44625	N/A	Hangar N	
PAFB	961	PMEL	Precision Measurement Equipment Laboratory	
Other	K8-0237	BCTS	Beach Corrosion Test Site	

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ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-06
GOVERNMENT FURNISHED PRESSURE VESSELS/SYSTEMS

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Government Furnished Pressure Vessels/Systems

Contract Reference No.	Certification Report Number	KSC Bldg Location	Facility Name	Commodity	Design Pressure	Cert Due Date	System Description	Status	Transfer From
~~PVS-ESC 8~~	~~KSC-YA-5887~~	~~M7-557~~	~~Cryogenics Lab~~	~~Liquid Nitrogen~~	~~250 Psig~~	~~09/18/2023~~	~~900 Gallon LN2 Dewar at Cryogenics Test Lab~~	~~A~~	~~USTDC~~
~~PVS-ESC 9~~	~~KSC-YA-6351~~	~~M7-557~~	~~Cryogenics Lab~~	~~Liquid Nitrogen~~	~~250 Psig~~	~~08/22/2023~~	~~6K LN2 Dewar at Cryogenics Test Lab~~	~~A~~	~~USTDC~~
~~PVS-ESC 10~~	~~KSC-YA-7922~~	~~M7-557~~	~~Cryogenics Lab~~	~~Liquid Nitrogen~~	~~50 Psig~~	~~10/03/2025~~	~~Cryogenics Test Lab 5000 Gal Skid Mounted Dewar~~	~~A~~	~~USTDC~~
~~PVS-ESC 16~~	~~KSC-DM-3587~~	~~M7-505A~~	~~LETF~~	~~Hydraulic Oil~~	~~5000 Psig~~	~~12/01/2020~~	~~LETF 600 ton Test Fixture~~	~~A~~	~~USTDC~~
~~PVS-ESC 17~~	~~KSC-DM-3589~~	~~M7-505A~~	~~LETF~~	~~Hydraulic Oil~~	~~3980 Psig~~	~~12/01/2019~~	~~LETF Hold Down Post Test Fixture~~	~~A~~	~~USTDC~~
~~PVS-ESC 19~~	~~KSC-KT-9058~~	~~M7-557~~	~~Cryogenics Lab~~	~~Liquid Nitrogen~~	~~50 Psig~~	~~12/01/2028~~	~~Cryogenics Lab Nitrogen System~~	~~A~~	~~USTDC~~
~~PVS-ESC 24~~	~~KSC-KT-9056~~	~~M7-557~~	~~Cryogenics Lab~~	~~Gaseous Nitrogen~~	~~6000 Psig~~	~~12/01/2028~~	~~Cryogenics Test Lab GN2 Distribution System~~	~~A~~	~~USTDC~~
~~PVS-ESC 25~~	~~KSC-KT-9057~~	~~M7-557~~	~~Cryogenics Lab~~	~~Gaseous Helium~~	~~2400 Psig~~	~~12/01/2028~~	~~Cryogenics Test Lab GHe Distribution System~~	~~A~~	~~USTDC~~
~~PVS-ESC 29~~	~~KSC-KT-9055~~	~~M7-557~~	~~Cryogenics Lab~~	~~Liquid Helium~~	~~50 Psig~~	~~12/01/2028~~	~~Cryogenics Lab 4000 Liter Liquid Helium Dewar~~	~~A~~	~~USTDC~~
	~~KSC-YA-6353~~	~~M7-557~~	~~Cryogenics Lab~~	~~Liquid Helium~~	~~15 Psig~~	~~08/12/2023~~	~~Cryogenics Test Lab 500 Liter LHe Dewar~~	~~A~~	~~USTDC~~
	~~KSC-YA-5320~~	~~M7-505A~~	~~LETF~~	~~Hydraulic Oil~~	~~3000 Psig~~	~~04/18/2022~~	~~Hydraulic Charging Unit - LETF Pump House~~	~~A~~	~~USTDC~~

LETF = Launch Equipment Test Facility
A= Active
I= Inactive

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ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-07
GOVERNMENT FURNISHED SERVICES

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Engineering Services Contract (ESC) Government Furnished Services (GFS)

This listing represents the Government Furnished Services for on-site performance of the Engineering Services Contract. Unless approved by the Government, the Contractor shall not use alternate sources for any of the services listed. These services have limitations on volume or quantity of service. Applicable Government Furnished Services for off-site performance will be determined by the Government on a case-by-case basis.

			NASA Contracts								USAF Contracts	
Service	**Description**	**NASA**	**ISC**	**IMCS**	**MESC**	**Protective Svcs**	**Grounds**	**Mail**	**KISS**	**Cafeteria**	**Custodial**	**USAF**	**Refuse**
Support Services	- Utilities (Water, Sewage, Natural Gas, Electricity)	X											
	- Specialized Commodities	X											
	- Facility & Facility Systems O&M		X										
	- Remote Proof Loading		X										
	- General Purpose Heavy Equipment Maintenance & Sustaining Engineering		X										
	- Office Space/Work Area Space	X											
	- Basic Furniture out of KSC Furniture Inventory*	X											
	- Space Planning	X											
	- Food Services (during normal operation hours)									X			
	- Locksmith services					X							
	- Personal Property Management (N-Prop)	X											
	- Real Property Management	X											
	- Grounds and Landscape Maintenance						X						
	- Pest Control and Extermination (interior/exterior)						X						
	- Refuse Collection												X
	- Custodial Services										X		
	- Fire Protection Program and Emergency Services					X							
	- Fire Inspection and Prevention					X							
	- Security Services: Includes law enforcement, investigations, badging/identification and personnel security.					X							
	- Medical Clinic Services: Includes Certification Physicals, First Aid and Emergency Services. (Ref. KNPD 1810.1, *KSC Occupation Medicine Program*)				X								
	- Industrial Hygiene Consultation				X								
	- Public Health Services				X								
	- Hazardous and Controlled Waste Disposal				X								
	- Ordnance Services (Ref. JOP 15E-3-15/KCA-1290 Rev. A)											X	
	- Health Physics (Radiation Protection) Consultation				X								
	- Material Safety Data Sheet (MSDS) Repository				X								
	- Environmental Sampling and Analysis				X								
	- Mail Service							X					
	- Library (including serial and publication subscriptions)			X									
	- Forms Support (electronic and hardcopy)			X									
	- Area Paging System (including weather warnings)			X									
	- Cable Plant Services			X									
	- Data Transmission			X									
	- Timing and Countdown			X									
	- Voice and Video Conferencing: Includes operating VITS rooms and portable VITS equipment and access to local and toll free teleconferences.			X									
	- Secure Telephone Unit (STU) and Secure Terminal Equipment (STE): Includes device, installation and support.					X							
	- Classified Conference Room/Facility	X											
	- Life Support Services (SCAPE, ELSA, etc.)		X										
	- Railroad Operations		X										
	- Packing, shipping and receiving		X										
	- Warehouse storage and management of materials and		X										
	- Transportation of materials and equipment		X										

Engineering Services Contract (ESC) Government Furnished Services (GFS)

This listing represents the Government Furnished Services for on-site performance of the Engineering Services Contract. Unless approved by the Government, the Contractor shall not use alternate sources for any of the services listed. These services have limitations on volume or quantity of service. Applicable Government Furnished Services for off-site performance will be determined by the Government on a case-by-case basis.

				NASA Contracts								USAF Contracts	
Service	**Description**	**NASA**	**ISC**	**IMCS**	**MESC**	**Protective Svcs**	**Grounds**	**Mail**	**KISS**	**Cafeteria**	**Custodial**	**USAF**	**Refuse**
	- Port-o-let service		X										
	- Shredder service		X										
	- Bottled water service		X										
Technical Training	- Safety, health, environmental and operational area access training and certification.								X				
Job-Specific Medical Training	- CPR/First Aid and bloodborne pathogen training.				X								
LCS Maintenance Agreements	- Vendor maintenance agreements for LCS COTS hardware and software.	X											
Surveillance Television	- Closed video transmission (TV or Web) used to monitor launch vehicle, payloads operations and facility security.			X									
Cable TV Service (BDCS)	- In facilities with existing capabilities. (Does not include the TV)			X									
Photography	- Administrative photography, including passport, newsletter and special events.			X									
Graphic Services (NASA-Directed)	- Graphics used in illustrations and documents, including photo-retouching and editing of photos, web graphics and interactive media, posters, charts, badges, certificates, labels, dry mounting, laminating, framing, scanning. (Optional)			X									
Imaging Services	- KSC/NASA Digital Photo Services Support			X									
	- Provide document conversion			X									
	- Provide CD-ROM mastering and duplicating			X									
	- Institutional Computerized Archival System (ICAS)			X									
Audio/Visual and Presentation Support	- Operate Mission Briefing Room, OSB II 5th Floor Conference Room, and KSC Auditorium. Loaner equipment for viewgraph, motion picture, slide projector, and VCRs.			X									
Public Address Service	- Provide audio at events in various locations, including KARS I and KARS II.			X									
Radio Services	- Provide devices, distribute and train users.			X									
Operational Intercommunications System (OIS)	- Provide OIS in facilities with existing capabilities.			X									
Printing and Reproduction	- Printing and duplication of color and black and white documents, including micro-imaging.			X									
Laboratory	- Standards and Calibration**		X										
	- Chemical Analysis and Sampling**		X										
	- Component Cleaning**		X										
	- EG&G NDE Lab**		X										
	- Electromagnetic Interference and Testing***			X									
Industrial Hygiene	- Bulk asbestos sampling/analysis for Government provided facilities		X										
	- Asbestos contamination repair/clean up for Government provided facilities		X										
	Consultation support on design, baseline operations hazard assessment and emergency response				X								

*** Does not include special needs furniture required by the Contractor workforce (e.g., ADA requirements, special ergonomic requirements)**

**** Option for Transition to ESC FY14**

*****Option for Transition to ESC FY11**

Engineering Services Contract (ESC) Government Furnished Services			NASA Contracts	
This listing represents the Government Furnished IT Services for on-site performance of the Engineering Services Contract. Unless approved by the Government, the Contractor shall not use alternate sources for any of the services listed. These services have limitations on volume or quantity of service. Applicable Government Furnished Services for off-site performance will be determined by the Government on a case-by-case basis.				
Service	**Description**	**NASA**	**IMCS**	**ODIN**
IT Security Support	- Vulnerability scanning of all systems connected to KNET.	X		
	- Preliminary documentation review of Contractor IT System Security Plans (ITSSP).		X	
	- Certification of IT systems (via Agency procured service).	X		
	- NASA Security Assessment and Authorization Repository (NSARR): authoritative tool for developing and storing ITSSP documentation.	X		
	- Agency Security Update Service (ASUS): PatchLink tool to facilitate patch management and reporting.	X		
	- Encryption solutions: Public Key Infrastructure (PKI) and Data at Rest (DAR) tools for storage and sharing of data in a secure manner.	X		
Secure Remote Access	- Provide secure remote access capability (outside KSC logical perimeter) to computer resources at the Center by Virtual Private Network (VPN) or modem (dial-in).		X	
Telephones	- Instruments, voicemail and long distance service for facilities at KSC and KSC facilities located on CCAFS.		X	
Networks	- Access to the KSC computer networks, including the internet.		X	
End User Services	- Includes desktops, laptops and workstations (both general purpose and scientific & engineering computers), associated IT peripherals, cell and smart phones, pagers, printer and Multi-Function Device (MFD) services, e-mail, and domain account services. The provider is responsible for asset management, IT Security compliance and associated support services.			X
Data Center Services	- Managed housing services for resources providing for applications, databases, files, data and web sites.		X	
IT Systems and Support	- **Engineering Documentation Center (EDC):** Repository for drawings, records, microimaging and specifications.		X	
	- **CAD/CAE Tools**, provide services for distribution of installation and configuration files for engineering tools and vaulting of engineering data within the KDC.		X	
	- **Design Data Management System (DDMS):** KSC's installation of Windchill to house engineering and design data.	X		
	- Integrated Collaborative Environment (ICE): Suite of tools for sharing, collaborating, integrating, accessing and controlling information. Includes Windchill, Cradle, Primavera, Vignette, Active Risk Manager, Integrated Risk Manager Application, wInsight and ConfluenceWiki in support of the Constellation Program.	X		
	- **Mission Assurance System (MAS)**: Software tools to meet the information capture and analysis needs of SR&QA.	X		
	- **System for Administration, Training, and Educational Resources for NASA (SATERN)** Learning management system for completion and tracking of Area Access and Security Awareness (IT Security, SBU, etc.) courses.	X		
	- Maximo: Asset management system. Includes hosting of Maximo software modules, along with system operations and maintenance. (Optional)		X	
	- **Management Information Decision Analysis System (MIDAS):** Suite of automated administrative systems to manage project costs and planning. (Optional)	X		
	- **TechDoc:** Document management system.	X		

ESC Government Furnished Desktops: PC Standard Load			
Software	Vendor	Version	Functionality
Office 2007 - Excel	Microsoft	12.x	Spreadsheet
Office 2007 - Word	Microsoft	12.x	Word Processing
Office 2007 - PowerPoint	Microsoft	12.x	Presentation
Office 2007 - Access	Microsoft	12.x	Database
Office 2007- Outlook	Microsoft	12.x	E-Mail
AntiVirus	Symantec	10.x	System Utilities
Adobe Acrobat Reader	Adobe	7.x	Other
Flowcharter 2003	iGrafx	9.x	Diagramming
Windows Media Player	Microsoft	10.x	Multimedia
RealPlayer	Real Networks	10.x	Multimedia
Quick Time	Apple	7.x	Multimedia
WinZip 32	WinZip	10.x	System Utilities
Ws FTP LE	Ipswitch	7.x	Network Utilities
SMS Client	Microsoft		Network Utilities
Firefox	Mozilla	2.x	Internet
Internet Explorer	Microsoft	6.x SP2 w/128 bit encrypt	Internet
X.500 Search	OAO	Other	Other
Timbuktu Pro	Netopia	5.x	Network Utilities
Windows XP Pro	Microsoft	w/SP2	Operating System
Spy Sweeper	Webroot	3.x	System Utilities
Flash Player	Adobe	8.x	Other
Authorware	Adobe	7.x	Other
Java Runtime Environment (JRE)	Sun	1.4.x	System Utilities
Software Refresh Portal (SRP)	LMIT	2.x	Other
Desktop eForm	FileNet	4.x	Other
Patchlink Update	Patchlink	6.x	System Utilities
Entrust Entelligence with ICE	Entrust	7.x	Encryption

ESC Government Furnished Desktops: Mac Standard Load			
Software	Vendor	Version	Functionality
MacOS	Apple	10.x	Operating System
Network Utility	Apple	1.4.x	Network Utilities
Office 2008 - Word	Microsoft	12.x	Word Processing
Office 2008 - Excel	Microsoft	12.x	Spreadsheet
Office 2008 - PowerPoint	Microsoft	12.x	Presentation
Office 2008 - Entourage	Microsoft	12.x	E-Mail
Acrobat Reader	Adobe	8.x	Other
AntiVirus	Symantec	10.x	System Utilities
Timbuktu Pro	Netopia	8.6.x	Network Utilities
Software Refresh Portal (SRP)	LMIT	1.x	Network Utilities
QuickTime Player	Apple	7.x	Multimedia
Firefox	Mozilla	2.x	Internet
Safari	Apple	3.x	Internet
ICA Client	Citrix	10.x	Network Utilities
Flash Player	Adobe	9.x	Multimedia
Shockwave Player	Adobe	10.x	Multimedia
Authorware Player	Adobe	7.x	Multimedia
Fetch	Fetch Softworks	5.x	System Utilities
Java Runtime Environment (JRE)	Sun	1.5.x	System Utilities
Mail	Apple	2.1.x	E-Mail
Player	Flip4Mac	2.x	Multimedia
Entrust Entelligence	Entrust	6.2.x	Encryption
Desktop eForms	FileNet	4.2.x	Other
Patchlink Update	Patchlink	6.x	Network Utilities

ESC Government Furnished Services		
Software Name	**Software Description**	**Manufacturer**
AutoCAD	Design Software	Autodesk
Autocad LT 2005	CADD Software	Autodesk
Maya	Visualization	Autodesk
Microstation	CAD Modeling	Bentley
Microstation	Visualization	Bentley
Microstation V-8	CAD	Bentley
GIMP	Image Editor	GIMP
CMDS- PAC Project Pro	Display, Control, Utility Program for Opto22 Controllers	Opto22
Pro/E (includes MathCad and Windchill)	CAD Modeling	Parametric Technology Corp (PTC)
FlexPDE	Finite Element Analysis	PDE Solutions
MathCad	Engineering calculation software, Edition 14	PTC
Mathcad 13.0	Engineering calculation software	PTC
Pro/E suite - Wildfire 3.0	Engineering CAD	PTC
Pro/E	Design software	PTC
IDL	Image Analysis	RSI Inc
FEMAP	Pre-Processor for NASTRAN	Siemens
NX Add-Ons	Data Trans/Response Analys/Dynamic Response	Siemens
NX MasterFEM	Pre-Processor for NASTRAN	Siemens
NX NASTRAN	Finite Element Analysis	Siemens
NX Thermal	Thermal Finite Element Analysis	Siemens
Igor Pro	Plotting and graphing software Version 4.01	Wave Metrics, Inc.
Shape Studio	Creating shapes for use in MS Visio	Microsoft
Rapidform	Converts 3-D scan data to Pro-E models.	Rapidform Inc.

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ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-08
INSTALLATION ACCOUNTABLE GOVERNMENT PROPERTY

SEE N-PROP FOR MOST CURRENT LISTING (MOD 46)

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ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-09
ORGANIZATIONAL CONFLICT OF INTEREST AVOIDANCE PLAN

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ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-10
PERSONAL IDENTIFICATION VERIFICATION

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PERSONAL IDENTITY VERIFICATION (PIV)

PIV Card Issuance Procedures in accordance with FAR clause 52.204-9, Personal Identity Verification of Contractor Personnel

FIPS 201 Appendix A graphically displays the following procedure for the issuance of a PIV credential.

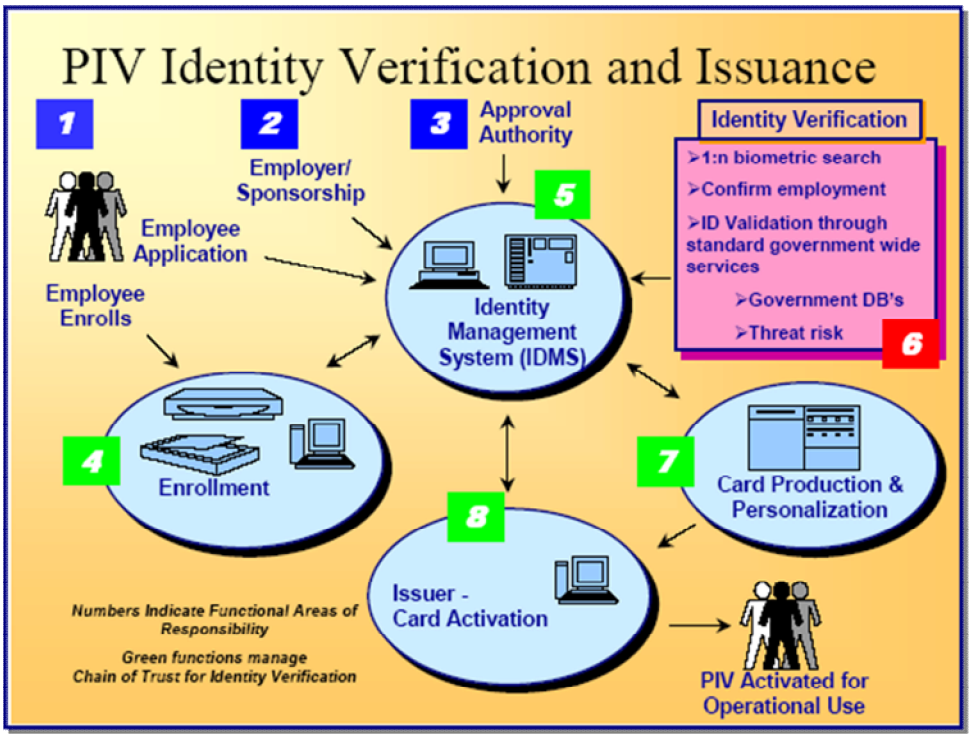

Figure A-1, FIPS 201, Appendix A

The following steps describe the procedures for the NASA Personal Identity Verification Card Issuance (PCI) of a PIV credential:

Step 1:
The Contractor's Corporate Security Officer (CSO), Program Manager (PM), or Facility Security Officer (FSO) submits a formal letter that provides a list of contract employees (applicant) names requesting access to the NASA Contracting Officer's Representative (COR). In the case of a foreign national applicant, approval through the NASA Foreign National Management System (NFNMS) must be obtained for the visit or assignment before any processing for a PIV credential can take place. Further, if the foreign national is not under a contract where a COR has been officially designated, the foreign national will provide the information directly to their visit/assignment host, and the host sponsor will fulfill the duties of the COR mentioned herein. In each case, the letter shall provide notification of the contract or foreign national employee's (hereafter the "applicant") full name (first, middle and last), social security number (SSN) or NASA Foreign National Management System Visitor Number if the foreign national does not have a SSN, and date of birth. If the contract employee has a current satisfactorily completed National Agency Check with Inquiries (NACI) or an equivalent or higher degree of background investigation, the letter shall indicate the type of investigation, the agency completing the

investigation, and date the investigation was completed. Further, the letter shall also acknowledge that contract employees may be denied access to NASA information or information systems based on an unsatisfactory background investigation/adjudication.

After reviewing the letter for completeness the COR/host must forward the letter to the Center Chief of Security (CCS). The CCS shall review the OPM databases (e.g., Defense Clearance Investigations Index (DCII), PIP, et al.), and take appropriate steps to validate the applicant's investigation status. Requirements for a NACI or other investigation shall be initiated only if necessary.

Applicants who do not currently possess the required level of background investigation shall be directed to the e-QIP web site to complete the necessary background investigation forms online. The CCS shall provide to the COR/host information and instructions on how to access the e-QIP for each contract or foreign national employee requiring access

Step 2:
Upon acceptance of the letter/background information, the applicant will be advised that in order to complete the investigative process, he or she must appear in-person before the authorized PIV registrar and submit two forms of identity source documents in original form. The identity source documents must come from the list of acceptable documents included in Form I-9, Employment Eligibility Verification, one which must be a Federal[1] or State issued picture identification. Fingerprints will be taken at this time. The applicant must appear **no later than** the entry on duty date.

When the applicant appears, the registrar will electronically scan the submitted documents; any document that appears invalid will be rejected by the registrar. The registrar will capture electronically both a facial image and fingerprints of the applicant. The information submitted by the applicant will be used to create or update the applicant identity record in the Identity Management System (IDMS).

Step 3:
Upon the applicant's completion of the investigative document, the CCS reviews the information, and resolves discrepancies with the applicant as necessary. When the applicant has appeared in person and completed fingerprints, the package is electronically submitted to initiate the NACI. The CCS includes a request for feedback on the NAC portion of the NACI at the time the request is submitted.

Step 4:
Prior to authorizing physical access of a contractor employee to a federally-controlled facility or access to a Federal information system, the CCS will ensure that a check has been performed with the National Crime Information Center (NCIC) and Interstate Identification Index. In the case of a foreign national, a national check of the Bureau of Immigration and Customs Enforcement (BICE) database will be performed for each applicant. If this process yields negative information, the CCS will immediately notify the COR/host of the determination regarding access made by the CCS.

Step 5:

[1] A non-PIV government identification badge, including the NASA Photo Identification Badge, MAY NOT BE USED for the original issuance of a PIV vetted credential

Upon receipt of the completed NAC, the CCS will update IDMS from the NAC portion of the NACI and indicate the result of the suitability determination. If an unsatisfactory suitability determination is rendered, the COR will advise the contractor that the employee is being denied physical access to all federally-controlled facilities and Federal information systems.

Based on a favorable NAC and NCIC/III or BICE check, the CCS will authorize the issuance of a PIV federal credential in the Physical Access Control System (PACS) database. The CCS, based on information provided by the COR/host, will determine what physical access the applicant should be granted once the PIV issues the credential.

Step 6:
Using the information provided by the applicant during his or her in-person appearance, the PIV card production facility creates and instantiates the approved PIV card for the applicant with an activation date commensurate with the applicant's start date.

Step 7:
The applicant proceeds to the credential issuance facility to begin processing for receipt of his/her federal credential.

The applicant provides to the credential issuing operator proof of identity with documentation that meets the requirements of FIPS 201 (DHS Employment Eligibility Verification (Form I-9)) documents. These documents **must** be the same documents submitted for registration.

The credential issuing operator will verify that the facial image, and optionally reference finger print, matches the enrollment data used to produce the card. Upon verification of identity, the operator will locate the employee's record in the PACS database, and modify the record to indicate the PIV card has been issued. The applicant will select a PIN for use with his or her new PIV card. Although root data is inaccessible to the operator, certain fields (hair color, eye color, et al.) may be modified to more accurately record the employee's information.

The applicant proceeds to a kiosk or other workstation to complete activation of the PIV card using the initial PIN entered at card issuance.

ALTERNATIVE FOR APPLICANTS WHO DO NOT HAVE A COMPLETED AND ADJUDICATED NAC AT THE TIME OF ENTRANCE ON DUTY

Steps 1 through 4 shall be accomplished for all applicants in accordance with the process described above. If the applicant is unable to appear in person until the time of entry on duty, or does not, for any other reason, have a completed and adjudicated NAC portion of the NACI at the time of entrance on duty, the following interim procedures shall apply.

1. If the documents required to submit the NACI have not been completed prior to EOD, the applicant will be instructed to complete all remaining requirements for submission of the investigation request. This includes presentation of I-9 documents and completion of fingerprints, if not already accomplished. If the applicant fails to complete these activities as prescribed in NPR 1600.1 (Chapters 3 & 4), it may be considered as failure to meet the conditions required for physical access to a federally-controlled facility or access to a Federal information system, and result in denial of such access.

2. Based on favorable results of the NCIC, the applicant shall be issued a temporary NASA identification card for a period not-to-exceed six months. If at the end of the six month period the NAC results have not been returned, the agency will at that time make a determination if an additional extension will be granted for the temporary identification card.

3. Upon return of the completed NAC, the process will continue from Step 5.

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ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-11
STATEMENT OF EQUIVALENT RATES
FOR FEDERAL HIRES

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NON-REPRESENTED EMPLOYEES
THIS INFORMATION IS FOR INFORMATION ONLY: IT IS **NOT** A WAGE DETERMINATION

Job Title	GS Level	Hourly Rate
Analyst I	GS09, Step 5	$ 25.32
Analyst II	GS12, Step 5	$ 36.72
Analyst III	GS14, Step 5	$ 51.60
Business Specialist I	GS09, Step 5	$ 25.32
Business Specialist II	GS12, Step 5	$ 36.72
Business Specialist III	GS14, Step 5	$ 51.60
Designer/Drafter I	GS09, Step 5	$ 25.32
Designer/Drafter II	GS11, Step 5	$ 30.63
Designer/Drafter III	GS13, Step 5	$ 43.66
Engineer I	GS11, Step 5	$ 30.63
Engineer II	GS12, Step 5	$ 36.72
Engineer III	GS14, Step 5	$ 51.60
Instructor/Trainer	GS12, Step 5	$ 36.72
IT Professional I	GS09, Step 5	$ 25.32
IT Professional II	GS12, Step 5	$ 36.72
IT Professional III	GS14, Step 5	$ 51.60
Manager	SES - Mid	$ 70.86
Prin. Investigator II	GS13, Step 5	$ 43.66
Prin. Investigator III	GS14, Step 5	$ 51.60
Program Manager	SES - Top	$ 85.10
Scientist I	GS11, Step 5	$ 30.63
Scientist II	GS12, Step 5	$ 36.72
Scientist III	GS14, Step 5	$ 51.60
Subject Matter Expert	SES - Mid	$ 70.86
Supervisor	GS15, Step 5	$ 60.69
Technician I	GS09, Step 5	$ 25.32
Technician II	GS11, Step 5	$ 30.63
Technician III	GS12, Step 5	$ 36.72

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ENGINEERING SERVICES

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ATTACHMENT J-12

SAFETY AND HEALTH PLAN

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ATTACHMENT J-13
MATERIALS AND CONSUMABLES

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Consumable Name	Consumable Type
pH meters and weighing supplies	Chemicals/Chem. Supplies (testers, acids, bases, etc.)
Flammability test igniters	Chemicals/Chem. Supplies (testers, acids, bases, etc.)
Sand Blast Media	Chemicals/Chem. Supplies (testers, acids, bases, etc.)
Lab Chemicals	Chemicals/Chem. Supplies (testers, acids, bases, etc.)
Solvents, Degreasers, Paints	Chemicals/Chem. Supplies (testers, acids, bases, etc.)
Mold impression solvents	Chemicals/Chem. Supplies (testers, acids, bases, etc.)
Glassware	Chemicals/Chem. Supplies (testers, acids, bases, etc.)
Paint booth filters	Cleaning Supplies (gloves, filters, contract, etc.)
Fiber Optic Cleaning Supplies	Cleaning Supplies (gloves, filters, contract, etc.)
Water filters	Cleaning Supplies (gloves, filters, contract, etc.)
Gloves, Filters	Cleaning Supplies (gloves, filters, contract, etc.)
Clean Room Bags, Tape, gloves	Cleaning Supplies (gloves, filters, contract, etc.)
Oxide, metal, fracture surface cleaners	Cleaning Supplies (gloves, filters, contract, etc.)
Misc D-Sub Connectors	Electrical/Electronic Components (wiring, batteries, etc.)
Electronic supplies	Electrical/Electronic Components (wiring, batteries, etc.)
Fiber Optic Cables/Spools	Electrical/Electronic Components (wiring, batteries, etc.)
Fiber Optic Connectors	Electrical/Electronic Components (wiring, batteries, etc.)
Fiber Optic Patch Cords	Electrical/Electronic Components (wiring, batteries, etc.)
Un-interruptible Power Supplies	Electrical/Electronic Components (wiring, batteries, etc.)
Misc PTSI Cables (SDAS)	Electrical/Electronic Components (wiring, batteries, etc.)
UV Bulb calibration	Electrical/Electronic Components (wiring, batteries, etc.)
Test Leads	Electrical/Electronic Components (wiring, batteries, etc.)
Flash Lamps, bulbs, Batteries, Wiring	Electrical/Electronic Components (wiring, batteries, etc.)
Reference electrodes and holders	Electrical/Electronic Components (wiring, batteries, etc.)
Optical Components (lenses, etc.)	Electrical/Electronic Components (wiring, batteries, etc.)
Specialty lighting for instruments	Electrical/Electronic Components (wiring, batteries, etc.)
Misc Test Leads (mini-grabber, j-lead, etc)	Electrical/Electronic Components (wiring, batteries, etc.)
Wiring, Power Switches, Batteries	Electrical/Electronic Components (wiring, batteries, etc.)
Cabling, connectors, UPS Batteries, wires, Etc.	Electrical/Electronic Components (wiring, batteries, etc.)
Oscilloscope Probes for LeCroy and Tektronix O-scopes	Electrical/Electronic Components (wiring, batteries, etc.)
ADC's, DSP's, etc.	Electrical/Electronic Components (wiring, batteries, etc.)
Electrical Supplies (Fuses, wire, tie-wraps, lugs, relays, etc.)	Electrical/Electronic Components (wiring, batteries, etc.)
Instrumentation repair kits (filaments)	Electrical/Electronic Components (wiring, batteries, etc.)
Circuit boards, drives, power supplies, etc., for QuVis Recorders	Electrical/Electronic Components (wiring, batteries, etc.)
Calibration Gases	Fluids (cryo or gases)
Liquid Nitrogen	Fluids (cryo or gases)
Salt fog chamber maintenance kit	General Maintenance Supplies
Cleaning materials and solutions	General Maintenance Supplies
Polishing Paper / cloth and solutions	General Maintenance Supplies
SECM Scanning Tips	General Maintenance Supplies
Water source maintenance	General Maintenance Supplies
Material Handling Equipment	General Maintenance Supplies
Microscope supplies	General Maintenance Supplies
Down Draft Unit (filters, maintenance)	General Maintenance Supplies
Adhesives, tapes, clamps	General Maintenance Supplies
Insulation Material	General Maintenance Supplies
Vacuum Oil	General Maintenance Supplies
Abrasive Media for Tumbler/De-Burring Machine	General Maintenance Supplies
Dielectric oil/filters/electrodes for die sinker EDM	General Maintenance Supplies
Wire Spools and filters/resin for the Wire EDM machine	General Maintenance Supplies

Misc ESD Hand Tools (cutters, screwdrivers, etc.)	Hand Tools & Components (drill bits, saw blades, etc.)
Hand Tools & Misc. Tool Consumables	Hand Tools & Components (drill bits, saw blades, etc.)
Tools	Hand Tools & Components (drill bits, saw blades, etc.)
Ultrasonic Transducers	Hand Tools & Components (drill bits, saw blades, etc.)
Wire Crimper/Strippers & Misc Hand Tools	Hand Tools & Components (drill bits, saw blades, etc.)
Clamps, Small Tools	Hand Tools & Components (drill bits, saw blades, etc.)
Tooling for machine tools	Hand Tools & Components (drill bits, saw blades, etc.)
Wrenches,Drivers	Hand Tools & Components (drill bits, saw blades, etc.)
Grinders, saw blades, dissection supplies	Hand Tools & Components (drill bits, saw blades, etc.)
Media supplies	IT Supplies and Components (cables, media, etc.)
Computer Accessories	IT Supplies and Components (cables, media, etc.)
Bulk Network Cable; Category 5e, 6, RG58, RG59, RG6	IT Supplies and Components (cables, media, etc.)
KVM switches	IT Supplies and Components (cables, media, etc.)
Solid State Drives, External Hard Drives, Data Cables	IT Supplies and Components (cables, media, etc.)
Jump Drives (40)	IT Supplies and Components (cables, media, etc.)
LTO4 Tapes	IT Supplies and Components (cables, media, etc.)
Facility IT Components	IT Supplies and Components (cables, media, etc.)
Tygon Hoses	Material Raw Stock (valves, pipe, hose, fittings, etc.)
PVC Sheet material	Material Raw Stock (valves, pipe, hose, fittings, etc.)
Stainless Steel Pipe, Fittings, Valves	Material Raw Stock (valves, pipe, hose, fittings, etc.)
K-Bottle Regulators/filters	Material Raw Stock (valves, pipe, hose, fittings, etc.)
Vacuum seals and grease	Material Raw Stock (valves, pipe, hose, fittings, etc.)
Vacuum chamber fittings	Material Raw Stock (valves, pipe, hose, fittings, etc.)
Stainless, Alum, Brass machine stock	Material Raw Stock (valves, pipe, hose, fittings, etc.)
Bolts and Screws	Material Raw Stock (valves, pipe, hose, fittings, etc.)
Unistrut and clamps	Material Raw Stock (valves, pipe, hose, fittings, etc.)
Stainless Steel Tubing	Material Raw Stock (valves, pipe, hose, fittings, etc.)
Flexible hoses and connections	Material Raw Stock (valves, pipe, hose, fittings, etc.)
Vacuum fittings	Material Raw Stock (valves, pipe, hose, fittings, etc.)
Vacuum chamber valves	Material Raw Stock (valves, pipe, hose, fittings, etc.)
Modeling Material for FDM Machine	Material Raw Stock (valves, pipe, hose, fittings, etc.)
Misc D38999 Type Connectors (SDAS)	Mechanical Components (hinges, switches, belts, etc.)
Test Targets	Photographic Supplies
Photography and photodocumentation supplies	Photographic Supplies
Digital archive	Photographic Supplies
Pressure Vessel Cert Compliance Materials	Safety Supplies
Safety Equipment	Safety Supplies

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ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-14
SMALL BUSINESS SUBCONTRACTING PLAN

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ATTACHMENT J-15

QUALITY MANAGEMENT PLAN

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ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-16

REGISTER OF DAVIS BACON WAGE DETERMINATION AND FRINGE BENEFITS

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General Decision Number: FL100017 04/23/2010 FL17

Superseded General Decision Number: FL20080017

State: Florida

Construction Types: Building, Heavy and Highway

County: Brevard County in Florida.

**CAPE CANAVERAL AIR STATION, PATRICK AIR FORCE BASE KENNEDY SPACE CENTER AND MALABAR RADAR SITE IN BREVARD COUNTY BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and partments up to and including 4 stories) HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/12/2010
1	04/23/2010

ASBE0067-001 07/01/2009

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems)	$ 24.87	10.10

ASBE0067-002 07/01/2009

	Rates	Fringes
HAZARDOUS MATERIAL HANDLER (Includes preparation, wetting, stripping, removal, scrapping, vacuuming,bagging, and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not)	$ 24.87	10.10

BOIL0199-001 01/01/2009

	Rates	Fringes
BOILERMAKER	$ 27.63	13.96
All other work	$ 25.13	13.96

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* BRFL0001-001 01/01/2010

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                                  Rates          Fringes

BRICKLAYER
     BRICKLAYERS, BLOCKLAYERS,
     PLASTERERS, TERRAZZO
     WORKERS, TILE SETTERS AND
     CEMENT MASONS:.............$ 23.15             7.85

  INDUSTRIAL work includes:  Bulk plants, power houses,
  chemical plants, missile sites including all work at Cape
  Canaveral Air Force Station and Kennedy Space Flight Center
  but excluding work performed at Patrick Air Force Base and
  Malabar Radar Site, oil refineries, etc., and such other
  work which is related to and considered a part of the above
  type projects.
----------------------------------------------------------------
 CARP1000-001 07/01/2008

                                  Rates          Fringes

MILLWRIGHT.......................$ 26.93            10.49
----------------------------------------------------------------
* CARP1765-001 05/01/2008

                                  Rates          Fringes

Carpenters:
     *INDUSTRIAL:
      CARPENTERS.................$ 23.96             7.21
      PILEDRIVERMEN..............$ 21.75             8.65
     COMMERCIAL:
      CARPENTERS.................$ 22.46             7.21
      PILEDRIVERMEN..............$ 21.75             8.65
----------------------------------------------------------------
 ELEC0222-001 09/01/2009

                                  Rates          Fringes

Line Construction:
     CABLE SPLICER..............$ 33.86         4.75+23%
     GROUNDMAN..................$ 18.38         4.75+23%
     LINEMAN; HEAVY EQUIPMENT
     OPERATOR...................$ 32.25         4.75+23%
----------------------------------------------------------------
 ELEC0756-001 09/01/2009

                                  Rates          Fringes

Electricians:
     Cable Splicer..............$ 27.00        6.45+4.4%
     Wireman....................$ 27.00        6.45+4.4%
----------------------------------------------------------------
 ELEV0139-001 01/01/2010

                                  Rates          Fringes

ELEVATOR MECHANIC................$ 35.08         20.235+A
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FOOTNOTE:
A. Employer contributions 8% of regular hourly rate to vacation pay credit for employee who has worked in business more than 5 years; Employer contributions 6% of regular hourly rate to vacation pay credit for employee who has worked in business less than 5 years.

Paid Holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; The Day After Thanksgiving and Christmas Day.

ENGI0673-001 05/01/2008

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 22.50	8.55
GROUP 2	$ 21.95	8.30
GROUP 3	$ 20.41	8.30
GROUP 4	$ 18.77	8.30

POWER EQUIPMENT OPERATORS

CLASSIFICATIONS GROUP 1: Tower Crane, Locomotive Crane, Crawler Crane, Truck Crane, Hydro Crane, Piledriver (incluidng auger and boring machine)

GROUP 2: Mechanic/Welder and operators of: Gantry Crane, Bridge Crane, Clam Shell, Dragline, Backhoe, Gradeall, Grader, Sideboom Cat, Hulti-Drum Hoist, Highlift (10' or higher), Locomotive Engineer, Tugboat Captain (150 hp or more), Concrete Pump with boom

GROUP 3: Bulddozers, Forklifts, Straddle Buggy, Single Drum Hoist, Winch Truck, Trenching Machine, Concrete Paver, Scraper, Loader, Asphalt Paving Machine, Lubricating Engineer, Fireman, Concrete Breaking Machine, Concrete Mixer

GROUP 4: Tractors, Wellpoint System Operator and Installer, Air Compressor, Pulver Mixer, Motor boat, Power Boat, Power Sweeper, Welding Machine, Oiler, Mechanic's Helper, Pump, Conveyor, Roller, Watertruck, Asphalt distributor, Concrete Pump (trailer type), Utility Operator

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IRON0808-001 07/01/2009

	Rates	Fringes
IRONWORKER	$ 24.28	9.95

LABO0517-001 05/01/2008

	Rates	Fringes
Laborers:		
Asbestos Abatement,		

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     Hazardous and Toxic Waste
     Removal Laborers; (On all
     mechaincal systems: Lead
     Base  Paint Removal;pipes,
     boilers, ducts,  flues,
     breechings, ect.; that are
      going to be scrapped, the
     removal of  all insulating
     materials  whether they
     contain asbestos or not
     shall be the exclusive
     work of the laborers;.......$ 17.50            5.47
     Carpenter Tender, Cement
     Mason Tender, Block/
     Bricklayer Tender
     Plasterer Tender............$ 17.50            5.47
     Demolition Laborers.........$ 17.50            5.47
     General Laborer.............$ 17.35            5.47
     Pipelayer Laborer, Laborer
     engaged in the pouring of
     concrete, mortar mixers,
     masonry forklift operator,
     and operation of power
     tools.......................$ 16.32            5.47
-----------------------------------------------------------------
 PAIN0078-001 01/01/2010

                                  Rates          Fringes

GLAZIER.........................$ 19.50            7.65
-----------------------------------------------------------------
 PAIN0078-002 01/01/2010

                                  Rates          Fringes

PAINTER.........................$ 23.25            9.95
-----------------------------------------------------------------
 PLUM0295-001 01/01/2010

                                  Rates          Fringes

Plumber/Pipefitter/Steamfitter
     INDUSTRIAL:    Bulk
     Plants, Power-houses,
     Chemical Plants, Missile
     Sites, (Including all Work
     at Cape Canaveral Air
     Force Station and Kennedy
     Space Flight Center but
     excluding work performed
     at Patrick Air Force Base
     and Malabar Radar Site),
     Oil Refineries, etc., and
     such other wirk which is
     related to and considered
     a part of the above type
     projects....................$ 30.80           14.87
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     Schools, Hospitals,
     Shopping Centers, and work
     not listed as Industrial....$ 30.80            14.87
----------------------------------------------------------------
 ROOF0103-001 02/01/2003

                                  Rates          Fringes

ROOFER, Including Built Up,
Composition and Single Ply
Roofs...........................$ 14.50             5.10
----------------------------------------------------------------
 SFFL0821-002 01/01/2010

                                  Rates          Fringes

SPRINKLER FITTER
     Commercial..................$ 26.80            14.30
     Industrial..................$ 29.00            14.30
----------------------------------------------------------------
 SHEE0015-001 07/01/2009

                                  Rates          Fringes

SHEETMETAL WORKER................$ 25.41            12.78
----------------------------------------------------------------
 TEAM0385-001 05/01/1990

                                  Rates          Fringes

TRUCK DRIVER.....................$ 13.00              .80
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WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.
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Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

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In the listing above, the "SU" designation means that rates
listed under the identifier do not reflect collectively
bargained wage and fringe benefit rates.  Other designations
indicate unions whose rates have been determined to be
prevailing.

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                    WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can
be:
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* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

NNK11EA08C

ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-17
REGISTER OF WAGE DETERMINATIONS
UNDER THE
SERVICE CONTRACT ACT

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WD 05-2117 (Rev.-13) was first posted on www.wdol.gov on 06/19/2012
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REGISTER OF WAGE DETERMINATIONS UNDER THE SERVICE CONTRACT ACT By direction of the Secretary of Labor	U.S. DEPARTMENT OF LABOR EMPLOYMENT STANDARDS ADMINISTRATION WAGE AND HOUR DIVISION WASHINGTON D.C. 20210
Diane C. Koplewski Division of Director Wage Determinations	Wage Determination No.: 2005-2117 Revision No.: 13 Date Of Revision: 06/13/2012

State: Florida

Area: Florida Counties of Brevard, Indian River

Fringe Benefits Required Follow the Occupational Listing

OCCUPATION CODE - TITLE	FOOTNOTE	RATE
01000 - Administrative Support And Clerical Occupations		
01011 - Accounting Clerk I		13.56
01012 - Accounting Clerk II		15.22
01013 - Accounting Clerk III		18.43
01020 - Administrative Assistant		19.20
01040 - Court Reporter		16.31
01051 - Data Entry Operator I		11.69
01052 - Data Entry Operator II		13.31
01060 - Dispatcher, Motor Vehicle		16.31
01070 - Document Preparation Clerk		13.60
01090 - Duplicating Machine Operator		13.60
01111 - General Clerk I		12.38
01112 - General Clerk II		13.39
01113 - General Clerk III		14.93
01120 - Housing Referral Assistant		17.64
01141 - Messenger Courier		12.16
01191 - Order Clerk I		11.55
01192 - Order Clerk II		13.60
01261 - Personnel Assistant (Employment) I		14.66
01262 - Personnel Assistant (Employment) II		16.40
01263 - Personnel Assistant (Employment) III		18.29
01270 - Production Control Clerk		19.41
01280 - Receptionist		11.39
01290 - Rental Clerk		12.83
01300 - Scheduler, Maintenance		14.20
01311 - Secretary I		14.20
01312 - Secretary II		15.82
01313 - Secretary III		17.64
01320 - Service Order Dispatcher		14.82
01410 - Supply Technician		19.60
01420 - Survey Worker		16.31
01531 - Travel Clerk I		11.33
01532 - Travel Clerk II		12.24
01533 - Travel Clerk III		13.11
01611 - Word Processor I		12.21
01612 - Word Processor II		13.16
01613 - Word Processor III		16.23

05000 - Automotive Service Occupations	
05005 - Automobile Body Repairer, Fiberglass	19.32
05010 - Automotive Electrician	18.15
05040 - Automotive Glass Installer	17.17
05070 - Automotive Worker	17.17
05110 - Mobile Equipment Servicer	15.50
05130 - Motor Equipment Metal Mechanic	18.88
05160 - Motor Equipment Metal Worker	17.17
05190 - Motor Vehicle Mechanic	18.80
05220 - Motor Vehicle Mechanic Helper	14.58
05250 - Motor Vehicle Upholstery Worker	16.58
05280 - Motor Vehicle Wrecker	17.17
05310 - Painter, Automotive	18.04
05340 - Radiator Repair Specialist	17.17
05370 - Tire Repairer	13.08
05400 - Transmission Repair Specialist	18.88
07000 - Food Preparation And Service Occupations	
07010 - Baker	12.08
07041 - Cook I	11.12
07042 - Cook II	12.08
07070 - Dishwasher	8.13
07130 - Food Service Worker	10.11
07210 - Meat Cutter	14.83
07260 - Waiter/Waitress	9.64
09000 - Furniture Maintenance And Repair Occupations	
09010 - Electrostatic Spray Painter	17.93
09040 - Furniture Handler	13.01
09080 - Furniture Refinisher	16.55
09090 - Furniture Refinisher Helper	13.38
09110 - Furniture Repairer, Minor	14.99
09130 - Upholsterer	16.55
11000 - General Services And Support Occupations	
11030 - Cleaner, Vehicles	10.09
11060 - Elevator Operator	10.09
11090 - Gardener	13.52
11122 - Housekeeping Aide	11.47
11150 - Janitor	11.47
11210 - Laborer, Grounds Maintenance	11.33
11240 - Maid or Houseman	9.03
11260 - Pruner	10.31
11270 - Tractor Operator	13.20
11330 - Trail Maintenance Worker	11.33
11360 - Window Cleaner	12.61
12000 - Health Occupations	
12010 - Ambulance Driver	15.51
12011 - Breath Alcohol Technician	17.75
12012 - Certified Occupational Therapist Assistant	27.42
12015 - Certified Physical Therapist Assistant	24.67
12020 - Dental Assistant	15.36
12025 - Dental Hygienist	28.81
12030 - EKG Technician	17.76
12035 - Electroneurodiagnostic Technologist	17.76
12040 - Emergency Medical Technician	15.51
12071 - Licensed Practical Nurse I	16.45
12072 - Licensed Practical Nurse II	18.40
12073 - Licensed Practical Nurse III	20.52
12100 - Medical Assistant	12.83

12130 - Medical Laboratory Technician		18.67
12160 - Medical Record Clerk		14.62
12190 - Medical Record Technician		15.17
12195 - Medical Transcriptionist		14.93
12210 - Nuclear Medicine Technologist		30.91
12221 - Nursing Assistant I		11.00
12222 - Nursing Assistant II		12.37
12223 - Nursing Assistant III		13.50
12224 - Nursing Assistant IV		15.14
12235 - Optical Dispenser		17.68
12236 - Optical Technician		13.58
12250 - Pharmacy Technician		12.47
12280 - Phlebotomist		15.14
12305 - Radiologic Technologist		24.10
12311 - Registered Nurse I		22.67
12312 - Registered Nurse II		27.73
12313 - Registered Nurse II, Specialist		27.73
12314 - Registered Nurse III		33.55
12315 - Registered Nurse III, Anesthetist		33.55
12316 - Registered Nurse IV		40.22
12317 - Scheduler (Drug and Alcohol Testing)		22.80
13000 - Information And Arts Occupations		
13011 - Exhibits Specialist I		17.52
13012 - Exhibits Specialist II		20.85
13013 - Exhibits Specialist III		23.88
13041 - Illustrator I		16.29
13042 - Illustrator II		19.52
13043 - Illustrator III		23.31
13047 - Librarian		22.41
13050 - Library Aide/Clerk		11.99
13054 - Library Information Technology Systems Administrator		20.85
13058 - Library Technician		15.75
13061 - Media Specialist I		15.05
13062 - Media Specialist II		16.55
13063 - Media Specialist III		17.57
13071 - Photographer I		15.22
13072 - Photographer II		17.02
13073 - Photographer III		21.09
13074 - Photographer IV		24.68
13075 - Photographer V		27.29
13110 - Video Teleconference Technician		15.74
14000 - Information Technology Occupations		
14041 - Computer Operator I		16.15
14042 - Computer Operator II		18.06
14043 - Computer Operator III		20.14
14044 - Computer Operator IV		22.37
14045 - Computer Operator V		24.79
14071 - Computer Programmer I	(see 1)	23.18
14072 - Computer Programmer II	(see 1)	27.62
14073 - Computer Programmer III	(see 1)	
14074 - Computer Programmer IV	(see 1)	
14101 - Computer Systems Analyst I	(see 1)	
14102 - Computer Systems Analyst II	(see 1)	
14103 - Computer Systems Analyst III	(see 1)	
14150 - Peripheral Equipment Operator		16.15
14160 - Personal Computer Support Technician		22.37

15000 - Instructional Occupations	
15010 - Aircrew Training Devices Instructor (Non-Rated)	29.98
15020 - Aircrew Training Devices Instructor (Rated)	33.63
15030 - Air Crew Training Devices Instructor (Pilot)	35.42
15050 - Computer Based Training Specialist / Instructor	29.98
15060 - Educational Technologist	25.26
15070 - Flight Instructor (Pilot)	35.42
15080 - Graphic Artist	20.58
15090 - Technical Instructor	21.82
15095 - Technical Instructor/Course Developer	25.91
15110 - Test Proctor	17.90
15120 - Tutor	17.90
16000 - Laundry, Dry-Cleaning, Pressing And Related Occupations	
16010 - Assembler	8.37
16030 - Counter Attendant	8.37
16040 - Dry Cleaner	10.44
16070 - Finisher, Flatwork, Machine	8.37
16090 - Presser, Hand	8.37
16110 - Presser, Machine, Drycleaning	8.37
16130 - Presser, Machine, Shirts	8.37
16160 - Presser, Machine, Wearing Apparel, Laundry	8.37
16190 - Sewing Machine Operator	11.12
16220 - Tailor	11.82
16250 - Washer, Machine	9.06
19000 - Machine Tool Operation And Repair Occupations	
19010 - Machine-Tool Operator (Tool Room)	17.55
19040 - Tool And Die Maker	20.86
21000 - Materials Handling And Packing Occupations	
21020 - Forklift Operator	13.08
21030 - Material Coordinator	19.41
21040 - Material Expediter	19.41
21050 - Material Handling Laborer	11.56
21071 - Order Filler	11.67
21080 - Production Line Worker (Food Processing)	13.84
21110 - Shipping Packer	13.52
21130 - Shipping/Receiving Clerk	13.52
21140 - Store Worker I	11.88
21150 - Stock Clerk	15.84
21210 - Tools And Parts Attendant	14.66
21410 - Warehouse Specialist	14.58
23000 - Mechanics And Maintenance And Repair Occupations	
23010 - Aerospace Structural Welder	23.29
23021 - Aircraft Mechanic I	22.18
23022 - Aircraft Mechanic II	23.29
23023 - Aircraft Mechanic III	24.46
23040 - Aircraft Mechanic Helper	15.59
23050 - Aircraft, Painter	19.14
23060 - Aircraft Servicer	17.47
23080 - Aircraft Worker	18.35
23110 - Appliance Mechanic	18.95
23120 - Bicycle Repairer	13.08
23125 - Cable Splicer	24.84
23130 - Carpenter, Maintenance	18.77
23140 - Carpet Layer	17.82
23160 - Electrician, Maintenance	22.10
23181 - Electronics Technician Maintenance I	22.65
23182 - Electronics Technician Maintenance II	24.25

23183 - Electronics Technician Maintenance III	25.73
23260 - Fabric Worker	16.67
23290 - Fire Alarm System Mechanic	17.54
23310 - Fire Extinguisher Repairer	15.49
23311 - Fuel Distribution System Mechanic	20.11
23312 - Fuel Distribution System Operator	16.75
23370 - General Maintenance Worker	17.61
23380 - Ground Support Equipment Mechanic	22.18
23381 - Ground Support Equipment Servicer	17.47
23382 - Ground Support Equipment Worker	18.35
23391 - Gunsmith I	17.56
23392 - Gunsmith II	20.20
23393 - Gunsmith III	22.75
23410 - Heating, Ventilation And Air-Conditioning Mechanic	18.49
23411 - Heating, Ventilation And Air Conditioning Mechanic (Research Facility)	19.55
23430 - Heavy Equipment Mechanic	20.74
23440 - Heavy Equipment Operator	16.89
23460 - Instrument Mechanic	20.11
23465 - Laboratory/Shelter Mechanic	20.21
23470 - Laborer	12.14
23510 - Locksmith	16.96
23530 - Machinery Maintenance Mechanic	23.76
23550 - Machinist, Maintenance	20.27
23580 - Maintenance Trades Helper	15.08
23591 - Metrology Technician I	20.11
23592 - Metrology Technician II	21.26
23593 - Metrology Technician III	22.06
23640 - Millwright	20.21
23710 - Office Appliance Repairer	18.22
23760 - Painter, Maintenance	17.34
23790 - Pipefitter, Maintenance	19.44
23810 - Plumber, Maintenance	18.59
23820 - Pneudraulic Systems Mechanic	20.11
23850 - Rigger	19.60
23870 - Scale Mechanic	17.82
23890 - Sheet-Metal Worker, Maintenance	19.20
23910 - Small Engine Mechanic	16.50
23931 - Telecommunications Mechanic I	24.15
23932 - Telecommunications Mechanic II	25.23
23950 - Telephone Lineman	21.31
23960 - Welder, Combination, Maintenance	18.14
23965 - Well Driller	20.11
23970 - Woodcraft Worker	20.11
23980 - Woodworker	14.58
24000 - Personal Needs Occupations	
24570 - Child Care Attendant	10.25
24580 - Child Care Center Clerk	13.34
24610 - Chore Aide	10.53
24620 - Family Readiness And Support Services Coordinator	13.26
24630 - Homemaker	16.32
25000 - Plant And System Operations Occupations	
25010 - Boiler Tender	19.20
25040 - Sewage Plant Operator	18.79
25070 - Stationary Engineer	19.20
25190 - Ventilation Equipment Tender	14.23
25210 - Water Treatment Plant Operator	18.79

27000 - Protective Service Occupations	
27004 - Alarm Monitor	14.87
27007 - Baggage Inspector	12.42
27008 - Corrections Officer	18.77
27010 - Court Security Officer	18.77
27030 - Detection Dog Handler	17.09
27040 - Detention Officer	18.77
27070 - Firefighter	19.22
27101 - Guard I	12.42
27102 - Guard II	17.09
27131 - Police Officer I	20.43
27132 - Police Officer II	22.70
28000 - Recreation Occupations	
28041 - Carnival Equipment Operator	13.12
28042 - Carnival Equipment Repairer	13.43
28043 - Carnival Equpment Worker	9.04
28210 - Gate Attendant/Gate Tender	13.56
28310 - Lifeguard	12.08
28350 - Park Attendant (Aide)	15.16
28510 - Recreation Aide/Health Facility Attendant	11.07
28515 - Recreation Specialist	18.79
28630 - Sports Official	12.08
28690 - Swimming Pool Operator	14.79
29000 - Stevedoring/Longshoremen Occupational Services	
29010 - Blocker And Bracer	17.91
29020 - Hatch Tender	17.91
29030 - Line Handler	17.91
29041 - Stevedore I	17.02
29042 - Stevedore II	20.11
30000 - Technical Occupations	
30010 - Air Traffic Control Specialist, Center (HFO) (see 2)	37.80
30011 - Air Traffic Control Specialist, Station (HFO) (see 2)	24.66
30012 - Air Traffic Control Specialist, Terminal (HFO) (see 2)	27.16
30021 - Archeological Technician I	14.56
30022 - Archeological Technician II	16.54
30023 - Archeological Technician III	20.23
30030 - Cartographic Technician	19.71
30040 - Civil Engineering Technician	20.89
30061 - Drafter/CAD Operator I	13.92
30062 - Drafter/CAD Operator II	15.57
30063 - Drafter/CAD Operator III	18.21
30064 - Drafter/CAD Operator IV	21.36
30081 - Engineering Technician I	15.41
30082 - Engineering Technician II	17.30
30083 - Engineering Technician III	19.35
30084 - Engineering Technician IV	23.98
30085 - Engineering Technician V	29.33
30086 - Engineering Technician VI	35.49
30090 - Environmental Technician	18.78
30210 - Laboratory Technician	22.77
30240 - Mathematical Technician	19.29
30361 - Paralegal/Legal Assistant I	15.19
30362 - Paralegal/Legal Assistant II	20.55
30363 - Paralegal/Legal Assistant III	25.12
30364 - Paralegal/Legal Assistant IV	30.43
30390 - Photo-Optics Technician	19.71
30461 - Technical Writer I	19.86

30462 - Technical Writer II		24.29
30463 - Technical Writer III		29.39
30491 - Unexploded Ordnance (UXO) Technician I		22.74
30492 - Unexploded Ordnance (UXO) Technician II		27.51
30493 - Unexploded Ordnance (UXO) Technician III		32.97
30494 - Unexploded (UXO) Safety Escort		22.74
30495 - Unexploded (UXO) Sweep Personnel		22.74
30620 - Weather Observer, Combined Upper Air Or Surface Programs	(see 2)	18.21
30621 - Weather Observer, Senior	(see 2)	19.59
31000 - Transportation/Mobile Equipment Operation Occupations		
31020 - Bus Aide		11.22
31030 - Bus Driver		12.82
31043 - Driver Courier		15.56
31260 - Parking and Lot Attendant		11.35
31290 - Shuttle Bus Driver		13.22
31310 - Taxi Driver		13.42
31361 - Truckdriver, Light		14.77
31362 - Truckdriver, Medium		15.11
31363 - Truckdriver, Heavy		15.38
31364 - Truckdriver, Tractor-Trailer		15.38
99000 - Miscellaneous Occupations		
99030 - Cashier		9.59
99050 - Desk Clerk		10.15
99095 - Embalmer		23.84
99251 - Laboratory Animal Caretaker I		10.25
99252 - Laboratory Animal Caretaker II		11.13
99310 - Mortician		23.84
99410 - Pest Controller		14.24
99510 - Photofinishing Worker		10.82
99710 - Recycling Laborer		13.25
99711 - Recycling Specialist		15.71
99730 - Refuse Collector		12.05
99810 - Sales Clerk		11.66
99820 - School Crossing Guard		10.86
99830 - Survey Party Chief		17.08
99831 - Surveying Aide		11.32
99832 - Surveying Technician		15.53
99840 - Vending Machine Attendant		13.23
99841 - Vending Machine Repairer		15.49
99842 - Vending Machine Repairer Helper		13.23

ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:

HEALTH & WELFARE: $3.71 per hour or $148.40 per week or $643.07 per month

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 5 years, 4 weeks after 15 years, and 5 weeks after 20 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

HOLIDAYS: A minimum of ten paid holidays per year, New Year's Day, Martin Luther King Jr's Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4174)

THE OCCUPATIONS WHICH HAVE NUMBERED FOOTNOTES IN PARENTHESES RECEIVE THE FOLLOWING:

1) COMPUTER EMPLOYEES: Under the SCA at section 8(b), this wage determination does not apply to any employee who individually qualifies as a bona fide executive, administrative, or professional employee as defined in 29 C.F.R. Part 541. Because most Computer System Analysts and Computer Programmers who are compensated at a rate not less than $27.63 (or on a salary or fee basis at a rate not less than $455 per week) an hour would likely qualify as exempt computer professionals, (29 C.F.R. 541. 400) wage rates may not be listed on this wage determination for all occupations within those job families. In addition, because this wage determination may not list a wage rate for some or all occupations within those job families if the survey data indicates that the prevailing wage rate for the occupation equals or exceeds $27.63 per hour conformances may be necessary for certain nonexempt employees. For example, if an individual employee is nonexempt but nevertheless performs duties within the scope of one of the Computer Systems Analyst or Computer Programmer occupations for which this wage determination does not specify an SCA wage rate, then the wage rate for that employee must be conformed in accordance with the conformance procedures described in the conformance note included on this wage determination.

Additionally, because job titles vary widely and change quickly in the computer industry, job titles are not determinative of the application of the computer professional exemption. Therefore, the exemption applies only to computer employees who satisfy the compensation requirements and whose primary duty consists of:

(1) The application of systems analysis techniques and procedures, including consulting with users, to determine hardware, software or system functional specifications;
(2) The design, development, documentation, analysis, creation, testing or modification of computer systems or programs, including prototypes, based on and related to user or system design specifications;
(3) The design, documentation, testing, creation or modification of computer programs related to machine operating systems; or
(4) A combination of the aforementioned duties, the performance of which requires the same level of skills. (29 C.F.R. 541.400).

2) AIR TRAFFIC CONTROLLERS AND WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY: If you work at night as part of a regular tour of duty, you will earn a night differential and receive an additional 10% of basic pay for any hours worked between 6pm and 6am. If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

HAZARDOUS PAY DIFFERENTIAL: An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordinance, explosives, and incendiary materials. This includes work such as screening, blending, dying, mixing, and pressing of sensitive ordance, explosives, and pyrotechnic compositions such as lead azide, black powder and photoflash powder. All dry-house activities involving propellants or explosives. Demilitarization, modification, renovation, demolition, and maintenance operations on sensitive ordnance, explosives and incendiary materials. All operations involving regrading and cleaning of artillery ranges.

A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with, or in close proximity to ordance, (or employees possibly adjacent to) explosives and incendiary materials

which involves potential injury such as laceration of hands, face, or arms of the employee engaged in the operation, irritation of the skin, minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving, unloading, storage, and hauling of ordance, explosive, and incendiary ordnance material other than small arms ammunition. These differentials are only applicable to work that has been specifically designated by the agency for ordance, explosives, and incendiary material differential pay.

** UNIFORM ALLOWANCE **

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of $3.35 per week (or $.67 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations", Fifth Edition, April 2006, unless otherwise indicated. Copies of the Directory are available on the Internet. A links to the Directory may be found on the WHD home page at http://www.dol.gov/esa/whd/ or through the Wage Determinations On-Line (WDOL) Web site at http://wdol.gov/.

REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE {Standard Form 1444 (SF 1444)}

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. {See Section 4.6 (C)(vi)} When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

1) When preparing the bid, the contractor identifies the need for a conformed occupation(s) and computes a proposed rate(s).

2) After contract award, the contractor prepares a written report listing in order proposed classification title(s), a Federal grade equivalency (FGE) for each proposed classification(s), job description(s), and rationale for proposed wage rate(s), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.

3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6(b)(2) of Regulations 29 CFR Part 4).

4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.

5) The contracting officer transmits the Wage and Hour decision to the contractor.

6) The contractor informs the affected employees.

Information required by the Regulations must be submitted on SF 1444 or bond paper.

When preparing a conformance request, the "Service Contract Act Directory of Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.

NNK11EA08C

ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-18
GLOSSARY AND ACRONYMS

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GLOSSARY

ABANDONED (Facility): There are no plans for future reactivation. A condition in which a facility has been "walked away from" or maintenance of any part of the property has ceased. Facility systems and collateral equipment should be considered for excess and/or identified for use at other NASA locations where feasible and cost-effective. Note: facility integrity is lost at 90 days in abandoned status. All utilities have been secured and disconnected at the first service equipment location outside the facility. Facility has been secured to prevent pilfering of economically salvageable materials until the facility is demolished; it may be necessary to maintain the exterior of the facility in a minimally aesthetically acceptable condition. In coordination with the Center Environmental Office, environmental surveys have been completed and any remediation required has been identified and programmed. All personal property and controlled equipment have been removed and accounted for. Plans have been made to demolish or declare the facility excess at the earliest practical date. (See NPR 8800.15 Para 3.9)

ACCREDITATION: The official management decision given by a senior agency official to authorize operation of an information system and to explicitly accept the risk to agency operations (including mission, functions, image, or reputation), agency assets, or individuals, based on the implementation of an agreed-upon set of criteria.

ACTIVE (Facility): Any facility that has a specific and present, or near-term, program or institutional requirement. Space utilization would normally be 50% and/or the usage levels exceed 50% of the available time for use. (See NPR 8800.15 Para 3.9)

ANOMALY: An unexpected event, hardware or software damage, a departure from established procedures or performance, or a deviation of system, subsystem, and/or hardware or software performance outside certified design/performance specification limits.

ASSESSMENT: An appraisal including qualitative judgments about an item such as the importance of analysis results, design criticality, and failure effect.

ASSOCIATE CONTRACTOR AGREEMENT (ACA): A documented mutual understanding between two or more contractors that enables support from one to the other or working together to meet a common objective and requiring minimal (if any) Government involvement.

AVAILABILITY: The probability that an item is in an operable and committable state when called for at an unknown (random) time.

B

BACKLOG OF MAINTENANCE AND REPAIR (BMAR): Facilities, Systems, Equipment, and Utilities (FSEU) maintenance work that is unfunded and deferred beyond the original need date and is required to bring facilities and collateral equipment to a condition that meets acceptable facilities maintenance standards or specified operating requirements.

BASELINE (Engineering): The defined and approved end-item configuration that is documented by drawings, specifications, and/or other technical documents. A reference for program and project planning and a point of departure for change control.

BENCHSTOCK: A stock of 30 day, low-cost, repetitively used consumption type supplies, and repair parts, established at or near points of consumption/use to ensure continuous and uninterrupted operations. Bench stocks are generally restricted to maintenance, repair, and fabrication type activities.

C

CAPE CANAVERAL AIR FORCE STATION (CCAFS): The geographic area of the Station encompasses approximately 24.7 square miles (15,804 acres) and is located on the Atlantic coast between Port Canaveral, Florida and the National Aeronautics and Space Administration (NASA), Kennedy Space Center (KSC). It includes Air Force, NASA, Naval Ordinance Test Unit (NOTU), and other tenants/customers.

CAPITALIZED PROPERTY (Government): Individual items of Property, Plant, and Equipment (PP&E) that has an acquisition cost of $5,000 or more, an estimated useful life of two years or more, is not intended for sale in the ordinary course of operations, and is acquired or constructed with the intention of being used or available for use.

CARGO: Unless otherwise stated, reference to cargo includes Portable Equipment, Payloads and Cargo (PEPC) placed in the Orion spacecraft and unpressurized items placed in the Service Module.

CERTIFICATION: The process of determining and attesting to a required level of value, performance and readiness.

CHIT: A Chit is a Space Shuttle Program term for requesting performance of a special test, maintenance or inspection on flight hardware or ground systems. A Chit may not be used for permanent configuration changes. CHITs are requested through KSC, JSC, or MFSC. Examples of some the uses of a Chit are: Cannibalization requests, removal and replacement of LRU's, and requests to ship flight hardware or ground systems to another facility.

CLOSE CALL: See definition under *Mishap*.

COMPATIBILITY (Materials): The ability of two or more materials or substances to come in contact without altering their structure or causing an unwanted reaction in terms such as permeability, flammability, ignition, combustion, functional or material degradation, contamination, toxicity, pressure, temperature, shock, oxidation, or corrosion.

COMPONENT: A combination of parts, devices, and structures, usually self-contained that performs a distinctive function in the operations of the overall equipment; e.g., cryogenic pump, filter assembly, power supply, or transmitter.

CONFIGURATION CONTROL: The formal system for identifying, evaluating for impact, documenting, and processing proposed changes to the current configuration baseline. Any Facilities, Systems, Equipment, and Utilities (FSEU) or any of its discrete portions that satisfies an end-use function may be designated to be under configuration control.

CONFIGURATION MANAGEMENT DATA SYSTEM (CMDS): A centralized computer data system for maintaining the design configuration identification and change tracking for ground support facilities, systems, and equipment end-items.

"CONSISTENT WITH"(as used in the PWS): The Contractor has flexibility to develop/apply an approach, but the approach must meet the intent of the applicable document.

CONSTRAINT: Any technical or operational limiting factor (except parts, material, equipment, or tools) that would prohibit performance of an activity, invalidate a portion of a work authorization document (sequence or step), or cause personal injury or equipment damage if not resolved satisfactorily before the start of the work sequence or step.

CONSTRUCTION OF FACILITIES (CoF): NASA's capital investment program for facility projects with estimated cost of greater than $500,000/project. CoF projects are approved by NASA Headquarters and require Congressional approval.

CONTRACT EFFECTIVE DATE: ESC start date

CONTRACTOR: The term "Contractor" as used herein refers to both the prime ESC Contractor and any ESC subcontractors.

CONTRACTOR (lower case "c"): The term "contractor" as used herein refers to contractor(s) other than the ESC Contractor and ESC subcontractors.

CONTRACTOR ACQUIRED PROPERTY (CAP) (sometimes referred to as Contractor Acquired Equipment): Property acquired or otherwise provided by the contractor for performing a contract and to which the Government has title. (See FAR 45.101)

CONTRACTOR PROPERTY: Property of a capital nature, provided by the Contractor that is depreciated for use on the Contract and not titled to the Government.

CORRECTIVE ACTION: Action taken to correct or prevent the recurrence of a nonconformance.

COMMERCIAL OFF THE SHELF (COTS) SOFTWARE: Software that is commercially available and maintained by a vendor. Custom software maintained by the Government or the contractor is not COTS software.

COUNTDOWN DEMONSTRATION TEST (CDDT): A mock (dry run) launch countdown demonstration (simulation) performed to exercise crew loading and final countdown procedures. Activities surrounding the CDDT include End-to-End testing of flight vehicle and Mobile Launcher (ML) systems, a mission sequence test and final fit-check and stowage of flight crew systems, including Flight Crew Equipment (FCE) and other late-stow Portable Equipment, Payloads and Cargo (PEPC) (or simulators).

CRITICAL: The categorization based on the worst case potential effect of failure (loss of function or inadvertent operation), that could result in loss of life, loss of vehicle, or damage to a vehicle systems. (See KNPR 8700.2)

CRITICAL ITEMS LIST (CIL): A listing comprised of all critical items, meeting the requirements of KNPR 8700.2, identified as a result of performing the Failure Modes and Effects Analysis (FMEA).

CRITICAL ITEM: A Category 1, 1S, or 2 single failure point.

a. **Category 1:** Single Failure point that could result in loss of vehicle or loss of flight or ground personnel.

b. **Category 1S**: A single failure point of the system component designed to provide safety or protection capability against a potentially hazardous event, or a single failure point in a hazard or safety monitoring system that causes the system to fail to detect, or operate when needed during the existence of a hazardous condition that could lead to a loss of flight or ground personnel or vehicle.

c. **Category 2:** A single failure point that could result in loss of a critical mission support capability

CURRENT REPLACEMENT VALUE (CRV): Approximate cost to replace an existing facility in its present form. NASA calculates facility CRV by escalating facility and collateral equipment acquisition cost, and any incremental book value changes of $5,000 or more to present-year dollars using the Engineering News Record (ENR) Building Cost Index (BCI). The NASA Real Property Data System program or NASA Headquarters-approved equivalent is used in performing the required calculations. (See NPR 8830.1)

CRITICAL PROCESS: A process whereby proper conduct is essential to ensuring the integrity of the final product, and for which an accurate determination of the adequacy of the process cannot be made by inspection following completion of the process.

CRITICAL SKILLS: Any ability that is used effectively, competently, and readily in safe execution or performance of the Program that could pose risk if dispositioned. Such risks include: cost risk-the cost to reinstate a dispositioned asset (includes procurement, installation, training, etc.), and schedule risk-the schedule delay due to procurement of a dispositioned asset. (See NSTS 60576)

CUSTOMER: The entity receiving direct benefit from the product or services by the Contractor.

D

DAMAGE ASSESSMENT and RECOVERY TEAM (DART): This team is comprised of personnel called back to assist the Ride-Out Team and continue the recovery effort, bring up infrastructure, establish operations, and open KSC/CCAFS. The team consists of personnel with trades and skills necessary to restore the infrastructure, relieve existing Ride-Out Team, perform damage assessment, sustain the recovery effort, and safe any hazardous substance releases. DART will also include managers of critical facilities or high-value mission critical equipment necessary for immediate operations.

DAYS: Calendar days unless otherwise noted.

DESIGN DATA MANAGEMENT SYSTEM (DDMS): The current Product Data Management System (PDMS) established to provide design coupled with configuration and data management tool support to the KSC Institutional engineering and technical communities. DDMS is utilized to develop and control product definition data involving the various products' technical specifications/requirements, specifications and detailed information (CAD/CAE models, drawings, etc.) for design, development, test/evaluation, operation/maintenance, and sustaining information required for the products entire lifecycle. Specific tasks and capabilities within DDMS include: product / data collaboration, access control, product structure, workflows (processes flows), configuration and change management, project planning, and resource tracking. DDMS serves as the central knowledge repository for process and product history, and promotes integration and data exchange among all institutional users who interact with the products — including project managers, engineers, procurement/buyers, logistics, operations, and safety / quality assurance teams. DDMS is being developed to be part of / support various agency and institutional product life cycle management initiatives as they evolve.

DESIGN, DEVELOPMENT, TEST AND EVALUATION (DDT&E; also DDTE): The first phase of a program that extends until Initial Operational Capability (IOC).

"DEVELOP, IMPLEMENT, AND MAINTAIN" (as used in the PWS): The Contractor is required to develop or provide an approach/product and provide the necessary resources to apply/sustain/update/revise that approach/product as required.

DOCUMENT RELEASE AUTHORIZATION (DRA): A means for authorizing release and distribution of engineering and associated documentation.

E

ELECTRONIC INFORMATION: Any data and information, except for limited-rights data or restricted software that is processed, managed, accessed or stored on an IT system in the performance of the contract.

EQUIPMENT: A tangible asset that is functionally complete for its intended purpose, durable, nonexpendable, and needed for the performance of a contract. Equipment is not intended for sale, and does not ordinarily lose its identity or become a component part of another article when put into use. (See FAR 45.101)

EXCESS: A classification assigned to government property for which there is no requirement at a particular operational level.

F

FAILURE: The inability of a system, subsystem, component, or part to perform the required function within specified limits, under specified conditions, for a specified duration.

FAILURE ANALYSIS: The effort of physical inspections, test (destructive or nondestructive), and/or analytical processes required to determine the failure modes and causes.

FAILURE MODE: The functional description of the manner in which a failure occurs and the operating condition of the equipment at the time of failure.

FAILURE MODES AND EFFECTS ANALYSIS (FMEA): The analysis of the potential failure modes in a system to determine effects on system operation, personnel safety, and flight hardware; and to classify each failure mode according to severity.

FLIGHT ELEMENT INTEGRATION TEST (FEIT): An integration test between the new or significantly modified systems being assembled into an integrated launch vehicle.

FOREIGN OBJECT DEBRIS (FOD): A substance, debris, or article alien to a vehicle or system, which could potentially cause damage.

FULL ACCESS (read only): Capability to obtain on-line, network accessible interface with the Contractor's computer system or software application to view data.

FULL ACCESS (read/write): Capability to obtain on-line, network accessible, interactive interface with the Contractor's computer system or software application to view and data entry.

FULL OPERATIONAL CAPABILITY (FOC) (as related to Constellation flight systems): The successful completion of the first crewed flight of the Orion vehicle with full functionality to dock with the ISS with Constellation systems capable of supporting a nominal stay of approximately six months at the ISS and rotation of crew members.

G

GEOGRAPHIC INFORMATION SYSTEM (GIS): A computerized relational database management system for capture, storage, retrieval, analysis, and display of spatial (locationally defined) data. GIS software applications allow users to develop linkages between graphical and non-graphical data.

GENERAL PURPOSE VEHICLES: Any vehicles required beyond what the Government provides. Examples include transportation for the purpose of personnel, equipment, and materials movement such as sedans, light trucks, trailers, and tankers not specifically designed for application at the installation.

GIDEP ALERT: GIDEP document for reporting a problem with parts, components, materials, specifications, software, facilities, manufacturing processes, or test equipment that can cause a functional failure.

GIDEP AGENCY ACTION NOTICE: A GIDEP document for redistributing problem information issued by a Government Agency to GIDEP participants.

GIDEP SAFE-ALERT: A GIDEP document for reporting a nonconforming item, product, or situation that creates a safety hazard for personnel or equipment.

GOVERNMENT PROPERTY: All property owned or leased by the Government. Government property includes both Government-furnished property and contractor-acquired property. (See FAR 45.101)

GOVERNMENT-FURNISHED PROPERTY (GFP): Property in the possession of, or directly acquired by, the Government and subsequently made available to the contractor. (See FAR 45.101)

GOVERNMENT-FURNISHED SERVICES (GFS): Services directly acquired by the Government and subsequently made available to the contractor.

GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM (GIDEP): A cooperative effort to exchange research, development, design, testing, acquisition, and logistics information among Government and industry participants. Used to notify GIDEP participants of actual or potential problems on discrete parts, components, materials, manufacturing processes, test equipment, or safety conditions. The goal of GIDEP is to ensure that only reliable and conforming parts are in use on all Government programs and operations. Includes the use of GIDEP ALERT and GIDEP SAFE-ALERT Reports.

GOVERNMENT MANDATORY INSPECTION POINT (GMIP): Specific points during a process when an inspection by a Government representative is required before the process can proceed. GMIPs are identified by the Government to mitigate safety, mission, cost, or schedule risk to the Government by assuring contractor compliance to requirements or verifying that specific actions have occurred. They are not a substitute for contractor inspections.

GROUND OPERATIONS PROCESSING REQUIREMENTS (GOPR): Test and Verification Requirements generated to support the assembly and checkout phases that are associated with the integrating flight elements and systems following acceptance in preparation for flight. When satisfied, these test and verification requirements confirm readiness to proceed to the next integration phase of mission integration. This encompasses, but is not limited to assembly and checkout activities historically referred to as "operational requirements" documented within the KSC Operations and Maintenance Requirements and Specifications Document (OMRSD) database system. This phase also includes Multi Element Integrated Test (MEIT) and Flight Element Integration Test (FEIT) for validation testing performed at the launch site.

GROUND SYSTEMS (GS): System hardware, software, and firmware used to process or test flight hardware during ground processing, including unique facility systems, ground support equipment, and flight hardware special test equipment.

H

HAZARD: The presence of a potential risk situation whereby environment, personnel errors, design characteristics, procedural deficiencies, or subsystem malfunctions may result in loss of personnel capability, loss of system, or loss of life. (See NSTS 5300.4)

HAZARDOUS OPERATION (HAZARDOUS TASKS): Any operation involving materials or equipment that has a high potential to result in loss of life, serious injury to personnel, or damage to systems, equipment or facilities. (See KNPR 8715.3)

HAZARDOUS WASTES: Any waste or combination of wastes of a solid, liquid, contained gaseous or semisolid form that requires special management in waste handling, processing, and disposal for the protection of human health or the environment. Including, but not limited to, wastes containing substances that are corrosive, flammable, reactive, or toxic. (See 40 CFR 261)

HIGHLY SPECIALIZED INFORMATION TECHNOLOGY (IT): Highly specialized IT is a part of, internal to, or embedded in a mission platform. The platform's function (e.g., avionics, guidance, navigation, flight controls, simulation, radar, etc.) is enabled by IT but not driven by IT itself (e.g., computer hardware and software to automate internal functions of a spacecraft or spacecraft support system such as spacecraft control and status, sensor signal and data processing, and operational tasking.) Highly specialized IT acquisitions may include full development (where the information technology is a primary issue) to modification of existing systems (information architecture is firm and demonstrated in an operational environment) where information technology is not an issue. Real time is often critical - and few opportunities exist to use Commercial Off The Shelf (COTS) or Government Off The Shelf (GOTS) beyond microprocessors and operating systems because these systems are largely unprecedented or largely unique applications. Certain IT are considered mission critical because the loss would cause the stoppage of mission operations supporting real-time on-orbit mission operations and are identified as "highly specialized" by the Directorate Associate Administrator. Highly specialized IT is largely custom, as opposed to COTS or commodity IT systems or applications, and includes coding/applications that are integral parts of the research or science requirements, e.g., avionics upgrade. Common engineering IT tools such as Product Lifecycle Management (PLM) systems, Computer-Aided Design (CAD) systems, and collaborative engineering systems and environments are not highly specialized IT. ***Representative examples of highly specialized IT include:*** avionics software, real-time control systems, onboard processors, Deep Space Network, spacecraft instrumentation software, wind tunnel control system, human physiology monitoring systems, ground support environment, experiment simulators, Mission Control Center, Launch Control System and launch cameras. (See NPR 7120.7)

HYPERGOLS: Certain rocket fuels and oxidizers (fuels such as hydrazine (N2H4), monomethylhydrazine (MMH), and unsymmetrical dimethylhydrazine (UDMH)) and the oxidizer nitrogen tetroxide (N2O4)) that ignite spontaneously when the two components come in contact without an external ignition source. MMH can also be used as a monopropellant, utilizing a stationary catalyst to replace the complementary N2O4.

I

IMMEDIATE RESPONSE: The contractor expected response time to a technical issue varies depending on items such as allotted resolution time, technical feasibility, impact, and visibility. Immediate response is a term used to indicate that the minimal time it takes to respond to a query, technical issue, or task is in line with scope and established expectations of the query, technical issue, or task.

IN ACCORDANCE WITH (IAW) (as used in the PWS): The Contractor shall comply with all aspects (requirements, guidelines, specifications, etc) of the associated compliance document.

INACTIVE (Facility): Any facility that has no specific and present, or near-term, program or institutional requirement. The inactive facility may be placed in a "Standby", "Mothballed", or "Abandoned" status. The following generally applies to all levels of inactive facilities. No personnel occupy the facility. Utilities are curtailed, other than as required for fire, security, or safety. Facility is secured to prevent unauthorized access and injury to personnel. Facility does not receive funding for renewal or other significant improvement. The Current Replacement Value (CRV) of inactive facilities should be removed from the Center's total (NPR 8800.15 Para 3.9).

INFORMATION SYSTEM COMPONENTS: These include, for example, mainframes, workstations, servers (e.g., database, electronic mail, authentication, web, proxy, file, domain name), network components (e.g., firewalls, routers, gateways, voice, and data switches, wireless access points, network appliances, sensors), operating systems, middleware, and applications.

INSIGHT: A process of gathering product or process data that provide adequate visibility into the integrity of the product or process and evaluating the data for compliance. It does not constitute control, management, or final acceptance of the product or process.

INSTITUTION: KSC organizations, other than ESC, providing support services.

INTEGRATED VEHICLE PROCESSING: Critical path Ground Operations from integration of the flight vehicle elements until vehicle launch.

INTERFACE: The point or area where a relationship exists between two or more parts, systems, programs, functions, persons, or procedures where physical and/or functional compatibility is required.

INTERFACE VERIFICATION TEST: Integration test to validate the interface requirements and verify functionality between elements (flight to flight, flight to ground, and ground to ground)

INITIAL OPERATIONAL CAPABILITY (IOC) (as related to Constellation flight systems): The successful completion of the first crewed flight of the Orion vehicle to dock with the ISS with Constellation systems capable of supporting an abbreviated stay of approximately two weeks at the ISS.

IT RESOURCES: Any hardware or software or interconnected system or subsystem of equipment that is used to process, manage, access or store electronic information.

J

K

KIT or KITTING: An assembly, or act of assembling, of hardware, equipment, or consumables placed in suitable containers for control and issue.

KSC INTEGRATED CONTROL SCHEDULE (KICS): The implementing schedule for operations that occur for all missions. Published Monday through Friday (weekends as required) in a 96-hour/11-day format to include, but not be limited to, all work in the following categories: hazardous tasks, current and near term flow critical path activities, tasks requiring non-dedicated support, tasks requiring Launch Control System (LCS) support, and management visibility items as specified by ESC/NASA management.

L

LARGE-ELEMENT (Flight): One of the large flight hardware segments involved in launch operations at KSC (e.g. Orion Command Module, Service Module, Spacecraft Adaptor, Upper Stage or Core Stage, First Stage or the booster segments, or any cargo module)

LAUNCH CRITICAL SPARE (LCS): A Line Replacement Unit (LRU) that can be removed and replaced as a unit in a critical/mission essential equipment to prevent failure or restore its operation and allow continuation of the vehicle processing, launch, or landing mission.

LAUNCH TEAM: The launch team consists of a highly organized and disciplined group of individuals responsible for the test, checkout and monitoring of the flight hardware and ground systems to ensure all system parameters meet the criteria to commit the vehicle to launch. The team is comprised of both Government and Contractor personnel who work together seamlessly to ensure safety and mission success. The Government is responsible for launch commitment.

LIFE CYCLE: A projects or systems life cycle from formulation through implementation including all aspects of design, development, deployment, operation and maintenance, and excess.

LIFE SAFETY (System): See NFPA 101, *Life Safety Code.*

LINE REPLACEABLE UNIT (LRU): Any maintenance significant item that can be accessed, removed, replaced, and operationally validated at the Organizational Level of Maintenance and its replacement corrects or mitigates a credible failure or extends system life.

M

"DEVELOP AND MAINTAIN" (as used in the PWS): The Contractor is required to develop or provide an approach/product and provide the necessary resources to sustain/update/revise that approach/product as required.

MAINTAINABILITY: The measure of the ability of an item to be retained in, or restored to, a specified condition when the maintenance is performed by personnel having specified skill levels, using prescribed procedures and resources, at each prescribed level of maintenance and repair. A characteristic of design that permits hardware to be serviced, inspected, and repaired with a minimum expenditure of maintenance resources.

MAINTAIN/MAINTENANCE (Documentation): The process of ensuring that a document is configuration-controlled and changes are made to the document in a timely manner to reflect the most current data.

MAINTAIN/MAINTENANCE (Equipment): The recurring day-to-day work required to preserve facilities, systems, structures, GSE, and collateral equipment in such a condition that they may be used for their designated purpose over an intended service life. Maintenance minimizes or corrects wear and tear and thereby forestalls major repairs. Maintenance includes: Preventive Maintenance, Recurring Maintenance, Scheduled Maintenance, Corrective Maintenance, Programmed Maintenance, Proactive Maintenance, Predictive Testing & Inspection, Reactive Maintenance, Repair, Planned Repair, Emergency Repair, Rehabilitation, and Replacement of Obsolete Items.

MAJOR SUBCONTRACTOR: All subcontractors providing continuous support throughout the contract performance period and with an annual subcontract value greater than or equal to $1,000,000.

MATERIAL: Property that may be consumed or expended during the performance of a contract, component parts of a higher assembly, or items that lose their individual identity through incorporation into an end-item. Material does not include equipment, special tooling, and special test equipment. (See FAR 45.101)

MATERIAL SAFETY DATA SHEET (MSDS): Written or printed material that provides the health and safety information about a specific item; i.e., chemical composition, physical properties, fire and explosion hazards, health hazards, reactivity data, spill or leak procedures, occupational protective measures, special precautions, and transportation data. As a minimum, contains all information required by the Occupational Safety and Health Administration (OSHA).

METADATA: Data describing context, content and structure of records and their management through time.

MISHAP: An unplanned event involving (or potentially involving) injury or death to persons, damage to or loss of property or equipment, or mission failure; categorized (in accordance with NPR 8621.1) as follows:

a. **Close Call.** An undesirable and unexpected event resulting in no personal injury or illness, personal injury or illness requiring only first aid, and/or minor damage (of less than $1,000) but with potential for causing a more serious mishap (see below) or negative mission impact.

b. **Type A Mishap:** A mishap causing death, hospitalization (within 30 days from the same mishap) of three or more persons for other than observation, and/or damage to equipment or property resulting in a loss of $1,000,000 or more*.

c. **Type B Mishap:** A mishap resulting in permanent disability to one or more persons, inpatient hospitalization of one or two persons, and/or property damage or mission failure resulting in a loss of $250,000 or more but less than $1,000,000*.

d. **Type C Mishap:** A mishap causing occupational injury or illness that results in a case involving day(s) away from work and/or damage to equipment or property or mission failure resulting in loss of $25,000 or more but less than $250,000*.

e. **Type D Mishap:** A mishap consisting of personal injury requiring medical treatment of more than first aid but without any property damage or mission failure costing $1,000 or more but less than $25,000. (Personal occupational hearing loss in excess of 25 decibels in either ear is classified as an incident.)

*Mishaps resulting in damage to aircraft, space hardware, or ground support equipment that meet these criteria are included, as are test failures in which the damage was unanticipated.

MISSION ESSENTIAL: A function whose loss or improper performance could result in loss, deferment or unrecoverable delay of a mission.

MOTHBALL (Facility): A condition where a facility has been deactivated and appropriate maintenance have been taken to prevent deterioration of its vital or essential systems or placed in protective storage. Higher first year costs would be expected because of preparations for mothballing, but future annual costs should be significantly lower due to reduced maintenance and repair requirements. Total time to deactivate and then reactivate the facility, including the mothballed period, is expected to exceed 12 months. Utility systems and collateral equipment have been shut down and property prepared for long-term inactivation without significant deterioration. Selected systems should be kept in operation and inspected, such as cathodic protection systems. Facility interior has appropriate environmental control to prevent significant deterioration. The facility exterior envelope is inspected on a planned basis and work is accomplished as required to maintain the integrity of the exterior shell from the elements. The exterior of the facility shall also be kept in an aesthetically acceptable condition (NPR 8800.15 Para 3.9).

N

N-PROP: The NASA Property Management System, N-PROP is the web based front end for the Integrated Asset Management (IAM) property, plant, and equipment system. The IAM is used throughout the Agency to identify, control, and account for Government-owned equipment acquired by or in use by NASA and it's onsite NASA contractors under the NASA FAR supplement clause 1852.245-71 (Installation Accountable Government Property).

NASA Advisory: A NASA document for exchanging significant parts, materials, and safety problems or concerns among NASA activities.

NON-DESTRUCTIVE EVALUATION (NDE): Test and inspection methods used to determine the integrity of equipment that does not involve destruction of the test object. Examples include ultrasonic, magnetic particle, x-ray, eddy current, and dye-penetrant.

NONCONFORMANCE: A condition of any article or material or service in which one or more characteristics do not conform to requirements. Includes failures, discrepancies, defects and malfunctions.

O

OFF-SHIFT: Any shift other than a "normal business hours" shift.

OFFICE OF PRIMARY RESPONSIBILITY (OPR): An organization with overall responsibility for the development of, and subsequent changes to, a designated document or function.

OFFLINE OPERATIONS/PROCESSING: (Also "standalone operations") refer to non-critical path processing activities that occur as part of Ground Operations prior to integration of the vehicle on the Mobile Launcher (ML). Processing activities that take place following launch are also considered OFFLINE operations, such as Recovery, post-flight processing, refurbishment, ground system, and turnaround operations.

OMEU MATRIX: The OMEU matrix defines all NASA and USAF facilities and subsystems and the associated Operations, Maintenance, Engineering, User responsibilities of the Contractor and others.

OPERABILITY: The ability of a system to be operated for a specified duration under specified operating conditions at a specified capability with specified resources.

OPERATIONAL CHECK: The process by which a unit of instrumentation is tested to determine whether the unit operates and performs the intended function without regard to accuracy requirements (not a substitute for calibration).

OPERATIONS AND MAINTENANCE INSTRUCTION (OMI): A step-by-step instruction that provides the sequence and method of accomplishing the operation/maintenance of an end-item, or any portion thereof.

OPERATIONS AND MAINTENANCE REQUIREMENTS SPECIFICATION DOCUMENT (OMRSD): The single authoritative source for Shuttle and Space Station for non-drawing organizational level operations, maintenance, data and analysis requirements and specifications. (See NSTS 08171, File I)

ORBITAL REPLACEMENT UNIT (ORU): A module or component for on-orbit ISS operations or science.

OUTAGE: A stoppage or interruption of service due to the shutdown or test of a utility, equipment, or a support facility that will affect the continued operations of systems, facilities, or functions. Categorized as follows:

a. **Scheduled:** A planned outage that has been submitted 14 days before outage start to allow time for determining impact to affected contractors and systems.

b. **Unscheduled:** When a system or piece of equipment becomes inoperative unexpectedly.

OVERSIGHT: Surveillance mode that is in line with the supplier's processes, where the customer retains and exercises the right to concur or nonconcur with the supplier's decisions and any nonconcurrence is resolved before the supplier proceeds. Oversight is a continuum that can range from low intensity, such as customer concurrence in reviews (e.g., PDR, CDR), to high intensity oversight, in which the customer has day-to-day involvement in the supplier's decision making process (e.g., hardware inspections).

P

PAYLOAD: Crew, instruments, equipment, satellites or research vehicles which the primary space vehicle is designed to transport under specified conditions of operation, in addition to its unladed weight.

PERSONAL PROPERTY: Property of any kind including equipment, materials, and supplies, but excluding real property. Property of any kind or any interest therein, except real property acquired by NASA, including property in transit in Government conveyances or common carriers; storage for stock or disposal; undergoing maintenance, repair, modification ro service test; acquired by donations or any other method.

PHASE-IN (ESC): Period of time from contract award date up to contract effective start date.

PORTABLE EQUIPMENT, PAYLOADS AND CARGO (PEPC): All pressurized ORUs, payloads, cargo, science and Flight Crew Equipment (FCE) transported to and from the International Space Station (ISS) and for other CxP missions, including lunar, trans-lunar, and Mars. PEPC is installed inside the CM. For additional clarity, "PEPC/FCE" is used regularly in CxP documentation.

PRESSURE SYSTEM: An assembly of components under pressure, including vessels, piping, valves, pumps, relief devices, expansion joints, and gauges.

PRESSURE VESSEL: Any vessel used for storage or handling of gas or liquid under positive pressure, including components of systems.

PREVENTIVE MAINTENANCE (PM): Planned, scheduled periodic inspection (including safety), adjustment, cleaning, lubrication, parts replacement, and minor (no larger than Trouble Call scope) repair of equipment and systems for which a specific operator is not assigned. PM consists of many checkpoint activities on items that, if disabled, would interfere with an essential operations, endanger life or property, or involve high cost or long lead time for replacement. This is synonymous with Recurring or Schedule Maintenance.

PRIMARY ENGINEERING FUNCTION: Any engineering effort or task in which the Contractor leads in its entirety to meet the requirements set forth by the Government.

PROBLEM: Any nonconformance or anomaly on design, project or operational hardware, software, facilities, systems, procedures, or processes. An event that is occurring or has occurred, as opposed to a "risk" that is a future event that has a likelihood and consequence.

PROBLEM REPORTING, ANALYSIS AND CORRECTIVE ACTION (PRACA): A process for identifying, reporting, analyzing for cause, remedying, and preventing recurrence of problems on critical and mission essential systems.

PROGRAM (NASA): A strategic investment by a Mission Directorate or Mission Support Office that has a defined architecture, and/or technical approach, requirements, funding level, and a management structure that initiates and directs one or more projects. A *program* defines a strategic direction that the Agency has identified as critical. (See NPR 7120.5 D)

PROGRAM MILESTONE: A designated point in flight or ground hardware development and processing, uniquely defined by each NASA Program, in which a set of critical objectives has been completed. The Program will conduct a review at a milestone event to ensure that all supporting elements are ready to proceed with activities to achieve the next milestone in the schedule (e.g. launch).

PROGRAM PLAN (NASA): The document that establishes the Project's baseline for implementation, signed by the Mission Directorate Associate Administrator, Center Director(s), and Program Manager.

PROJECT (NASA): A specific investment identified in a *Program Plan* having defined requirements, a life-cycle cost, a beginning, and an end. A project yields new or revised products that directly address NASA's strategic needs. (See NPR 7120.5 D)

PROJECT SPECIFIC ENGINEERING TEST (PSET): An integration test between the elements and subsystems within a flight system during the assembly of the launch vehicle for the first time (e.g. during launch processing of the flight test vehicles) for the purpose of performing intra-system verification and validation that requires a vehicle configuration only found at KSC (e.g. first stage to upper stage).

Q

QUALITY PLAN: Document that sets forth practices and sequences of activities to implement an organization's quality policy into operational results, or conformance to standards and requirements.

R

READY TO PRODUCE: The preservation and maintenance of the lab/shop technical infrastructure base at a sufficient level to respond to customer-funded requirements. This includes administration and management of the lab/shop, ensuring that software licenses, hardware, maintenance and calibrations are kept up to date, consumables are procured and available, and technical skills are ready to provide basic lab/shop services.

REAL PROPERTY: Land, buildings, structures, utilities, systems, improvements, and appurtenances thereto permanently annexed to land. Includes the collateral equipment or systems. (See NPR 8830.1)

RECEIVE/RECEIVING: Includes documentation transfer and receiving inspections to identify and annotate any damage or abnormalities that may have occurred during transit from one facility/site to another.

RECYCLE PROCEDURES: Procedures implemented during launch countdown beginning with initial safing and securing of the launch vehicle/spacecraft and ground systems immediately following a launch countdown termination; these procedures will provide the capability to either continue to de-energize the flight elements and launch control systems for troubleshooting and/or corrective actions, or to define the vehicle and ground system reconfigurations in order to resume the Launch Countdown procedure.

RELIABILITY: The probability that an item, system, subsystem, component, or part will perform the intended and required function under specified conditions at a designated time for a specified interval.

RELIABILITY CENTERED MAINTENANCE (RCM): A process that is used to determine the most effective approach to maintenance. RCM involves identifying actions that, when taken, will reduce the probability of failure and which are the most cost effective. RCM seeks the optimal mix of Preventive Testing & Inspection (PT&I), Condition-Based Actions, other Time-or Cycle-Based actions, and Run-to-Failure approaches.

RIDE OUT TEAM: This team is assembled of essential personnel, both contractor and Government, with special skills, who have volunteered to remain on site to ride-out a hurricane or tropical storm in a designated facility on KSC/CCAFS. They keep mission essential systems and infrastructure up and running, as well as protect flight hardware and flight vehicles. The Ride Out Team is relieved by the Damage Assessment and Recovery Team (DART) after the storm has passed. Based on the category of storm and risk assessment, the Center Director, or a designated representative, may make the determination to release the Ride Out Team personnel.

RISK: The probability, severity, and uncertainties of experiencing an undesired event.

RISK ASSESSMENT: An engineering or operational analysis which identifies, safety, technical, schedule or cost risks, and associated consequences and likelihood.

RISK REVIEW BOARD: A board that reviews changes with potential technical, schedule, and cost risk, whose chairperson makes recommendations to the appropriate Configuration Control Board (CCB) chairperson prior to disposition.

ROOT CAUSE: A fundamental deficiency that results in a nonconformance and must be corrected to prevent recurrence of the same or a similar nonconformance.

ROUGH ORDER OF MAGNITUDE (ROM): An estimate to accomplish a configuration change or a project or task(s) based on minimal available data.

RUN-TO-FAILURE (RTF): A maintenance approach where no action is taken (time or cycle based actions), following installation, to prevent failure. Candidate systems or machines for run-to-failure are usually low cost, easily repaired, and non-critical.

S

SAFETY CRITICAL ITEM: A part, assembly, installation equipment, launch equipment, ground support equipment, recovery equipment, or support equipment for an aircraft, launch vehicle, or space vehicle if the part, equipment, or assembly contains a characteristic whose failure, malfunction, or absence could cause a catastrophic or critical failure resulting in the loss of or serious damage to the craft/vehicle, an unacceptable risk of personal injury, or loss of life.

SAFING: Activities that include relieving pressure within pressurized systems, de-energizing electrical systems, removing hazardous commodities, and removing and/or decontaminating equipment exposed to hazardous commodities.

SENSITIVE INFORMATION: Unclassified information that requires protection due to the risk and magnitude of loss or harm that could result from the inadvertent or deliberate disclosure, alteration, or destruction of information. This includes information for which improper use or disclosure could adversely affect the ability of an agency to accomplish its mission, proprietary information, records about individuals requiring protection under the Privacy Act, and information not releasable under the Freedom of Information Act. This is not the same as the National Security Agency (NSA) term "Sensitive, But Unclassified Information."

SHIP-SHORT: Portable Equipment, Payloads and Cargo (PEPC) and Flight Crew Equipment (FCE) packages that are delivered incomplete to the KSC FCE Lab from the customer (e.g. JSC).

SIGNIFICANT PROBLEM: Any problem which is of the highest category of significance by virtue of the problem's impact on personnel safety or mission accomplishment (schedule and objectives). (See NPR 8735.1)

SPECIAL TEST EQUIPMENT (STE): Either single or multipurpose integrated test units engineered, designed, fabricated, or modified to accomplish special purpose testing in performing a contract. It consists of items or assemblies of equipment including standard or general purpose items or components that are interconnected and interdependent so as to become a new functional entity for special testing purposes. It does not include material, special tooling, facilities (except foundations and similar improvements necessary for installing special test equipment), and plant equipment items used for general plant testing purposes. (See FAR 45.101)

STANDBY (Facility): A facility that is temporarily not in use and appropriate maintenance measures have been taken to maintain its vital or essential operating systems in a state of readiness or availability for future use. Selective life cycle, cost-effective facilities maintenance and repair is required. Total time to deactivate and then to reactivate the facility, including standby period, is expected to be less than 12 months. Utility systems and collateral equipment have been secured as may be appropriate, and equipment is cycled in operation on a planned basis to prevent deterioration. Facility interior has appropriate environmental control to prevent deterioration. (See NPR 8800.15 Para 3.9)

SUPPORTABILITY ASSESSMENT: Supportability analyses are a wide range of related analyses that are conducted within the systems engineering process. The goals of supportability analyses are to ensure that supportability is included as a system performance requirement, ensure that the system is concurrently developed or acquired with the optimal support system and infrastructure, and to ensure continuous supportability throughout the lifecycle of a system. The integrated analyses can include any number of tools, practices, or techniques to realize the goals. For example, commonality and standardization analyzes, repair level analysis, life cycle cost analysis, etc., can all be categorized as supportability analyses. (See MIL-HDBK-502: Acquisition Logistics)

SUPPORT ENGINEERING FUNCTION: Any effort or task in which the Contractor provides engineering products and services to the Government as the Government leads an engineering effort/task.

SURVEILLANCE: Audit, inspection or review(s) performed for verification of conditions, methods, procedures, and products, and analysis of associated records to ensure that the established requirements are in compliance.

SYSTEM: The combination of components, assemblies, or sets that function together to produce the capability required to meet a need. Includes all hardware, software, equipment, facilities, personnel, processes, and procedures needed for this purpose.

SYSTEM ASSURANCE ANALYSIS (SAA): An integrated reliability and safety analysis that combines criticality assessment, Failure Modes and Effects Analysis (FMEA), Single Failure Point Analysis (SFPA), Critical Items List (CIL), and Hazard Analysis (HA) into one document.

T

TEST EQUIPMENT (OR MEASURING DEVICES): Gauges; instruments; tools; fixtures; transducers; and measuring, monitoring, analysis, and diagnostic equipment used to measure static or transient phenomena to determine the characteristics or conformance to specifications of an article, material, system, process, or environment.

TECHNICAL EXCELLENCE: Strong foundational competencies in technical leadership, planning, and execution which are institutionalized across a company or contract. Values, norms, and practices are geared to achieving goals, while maintaining a strong safety focus. Capability is centered on the development, implementation, and dissemination of industry "best practices" and lessons learned within the technical community at large.

TIMELY: Occurring in a timeframe consistent with the expectations of a task and suitable for the application of a task's deliverables.

TRANSITION AND RETIREMENT (T&R): Refers to Space Station Program (SSP) and International Space Station Program (ISSP) closeout phase activities.

TRANSPORTATION (Flight): The means by which a large flight element is moved to or from KSC in one of four modes of transportation (e.g. air, sea, rail, or road).

TURNOVER: Point in time at which transfer of a ground system takes place from the element Original Equipment Manufacturer (OEM) to the Government. The Government serves as a transfer agent for the documentation and becomes owner of the hardware, but the responsibility/accountability of documentation transfers between the element contractor and ESC, or vice versa, at this point.

U

UNINTERRUPTIBLE POWER SUPPLY (UPS): A system designed to provide temporary redundant power upon loss of instrumentation power, so that an orderly power down may be accomplished without loss of data.

UNIVERSAL DOCUMENTATION SYSTEM: The UDS is the mechanism used for formally documenting customer (requesting agency) program support requirements to the 45SW (support agency) and the capabilities and commitments to support those requirements by the 45 SW.

"UPDATE AND MAINTAIN" (as used in the PWS): An existing approach/product that the Contractor is required to review, update, utilize and sustain.

V

VALIDATION: Proof that the product accomplishes the intended purpose based on stakeholder expectations. May be determined by a combination of test, analysis, demonstrations, and inspection. (See 7120.5 D)

VENDOR DATA PACKAGE: A compilation of documentation provided to the Contractor by outside vendors to provide the user with the status and data essential for operations and maintenance.

VERIFICATION: Proof of compliance with design solution specifications and descriptive documents. May be determined by a combination of test, analysis, demonstration, and inspection. (See 7120.5 D) For ground systems projects, all activities associated with initial operational activation and testing of a system, subsystem, or component.

W

WEEK DAYS: Monday through Friday, excluding Holidays.

WITNESS: To perform a real time observation of a test or process to assure that correct procedures and processes are followed for a specific action.

WORK INSTRUCTIONS (WI): A detailed instruction on how to perform specific tasks necessary to ensure consistent working methods and conformance to required quality standards. WIs may be forms, flowcharts, assembly or inspection procedures, detailed process instructions, manuals, specifications, standards, etc.

WORK YEAR EQUIVALENT (WYE): Productive hours in a contract year that a Contractor employee is available to work, not including holidays and paid leave.

X

Y

Z

ACRONYMS

3D	Three Dimensional
45 CES	45th Civil Engineering Squadron
45 SW	45th Space Wing
ABIH	American Board of Industrial Hygiene
ACA	Associate Contractor Agreement
ACM	Asbestos Containing Material
ACM	Area Control Monitor
ACOMC	Assembly, Checkout, Operations Maintenance and Configuration
ADA	Americans with Disabilities Act
ADP	Acceptance Data Package
AFB	Award Fee Board
AFSPCM	Air Force Space Command Manual
AHJ	Authority Having Jurisdiction
AHP	Aerospace and High Performance
AIS	Avionics Instrumentation Systems
AIT	Analysis and Integration Team
ANSI	American National Standards Institute
AO	Authorizing Official
AOE	Area(s) of Emphasis
AOP	Annual Operating Plan
APAS	Androgynous Peripheral Attach System
ARF	Assembly and Refurbishment Facility
ASCS	Agency Security Configuration Standards

ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASIL	Ares System Integration Laboratory
ASME	American Society of Mechanical Engineers
ASQ	American Society for Quality
ASTM	American Society for Testing Materials
ATLAS	APAS (Androgynous Peripheral Attach System) To LIDS (Low Impact Docking System) Adapter System
ATP	Acceptance Test Procedure
ATP	Authority to Proceed
ATV	Autonomous Transfer Vehicle
BAIR	Breathing Air
BCI	Building Cost Index
BCTS	Beach Corrosion Test Site
BMAR	Backlog of Maintenance and Repair
C&A	Certification and Accreditation
CAD	Computer-Aided Design
CAE	Computer-Aided Engineering
CAIL	Crew Exploration Vehicle (CEV) Avionics Integration Laboratory
CAIR	Compressed Air
CaLV	Cargo Launch Vehicle (expired -replace with Ares V)
CAM	Computer-Aided Manufacturing
CAP	Contractor Acquired Property
CAPPS	Checkout Assembly and Payload Processing Services
CARD	Constellation Architecture Requirements Document

CAU	Cargo Avionics Upgrade
CBA	Collective Bargaining Agreement
CBL	Contractor Bill of Lading
CCAFS	Cape Canaveral Air Force Station
CCB	Configuration Control Board
CCC	Complex Control Center
CCCE	Command, Control and Communications Element
CCR	Contractor Cost Reporting
CDDT	Countdown Demonstration Test
CDR	Critical Design Review
CEA	Center Export Administrator
CEF	COMSEC Equipment Facility
CEIT	Crew Equipment Interface Test
CEMP	Comprehensive Emergency Management Plan
CEO	Chief Executive Officer
CEPP	Comprehensive Emergency Preparedness Plan
CEV	Crew Exploration Vehicle (expired – replace with Orion)
CFD	Computational Fluid Dynamics
CFE	Contractor Furnished Equipment
CFO	Chief Financial Officer
CFR	Code of Federal Regulations
Chit	Special Request (See definition in glossary)
CI	Counterintelligence

CIL	Critical Items List
CIO	Chief Information Officer
CLIN	Contract Line Item Number
CLV	Crew Launch Vehicle (expired – replace with Ares I)
CM	Configuration Management
CM	Crew Module
CMDS	Configuration Management Data System
CO	Contracting Officer
CoF	Construction of Facilities
CoFR	Certification of Flight Readiness
COMSEC	Communications Security
COOP	Continuity of Operations Plan
COR	Contracting Officer's Representative
COTS	Commercial Off The Shelf
CP	Contractor Property
CPAF	Cost Plus Award Fee
CR	Change Request
CRCA	Component Refurbishment and Chemical Analysis
CRE	Contractor Replaced Equipment
CRF	Canister Rotation Facility
CRS	Commercial Resupply Service
CRV	Current Replacement Value
CS	Core Stage

CSC	Cargo Support System
CSERP	Constellation Safety Engineering Review Panel
CSP	Part of Alpha-numeric designation for OSHA instruction for Voluntary Protection Program: CSP 03-01-003
CSTP	Constellation Space Transportation Planning
CT	Counterterrorism
CT	Crawler Transporters
CV	Contract Value
Cx	Constellation
CxP	Constellation Program
DART	Damage Assessment and Recovery Team
DCMA	Defense Contract Management Agency
DCR	Design Certification Review
DDMS	Design Data Management System
DDTE	Design, Development, Test and Evaluation
DEE	Development External Enclave
DFRC	Dryden Flight Research Center
DIMS	Digital Imagery Management System
DoD	Department of Defense
DOL	Department of Labor
DOT	Department of Transportation
DR	Data Requirement
DRA	Document Release Authorization
DRD	Data Requirements Descriptions

DRL	Data Requirements List
DSSR	Daily Space Station Review
E3	Electromagnetic Environmental Effects
EAC	Estimate at Completion
EAR	Export Administration Regulations
EC	Estimated Completion
ECD	Estimated Completion Date
ECN	Equipment Control Number
ECP	Export Control Plan
ECP	Engineering Change Proposal
ECR	Engineering Change Request
ECWG	Export Control Working Group
EDC	Engineering Documentation Center
EDS	Earth Departure Stage
EELV	Evolved Expendable Launch Vehicle
ELSA	Emergency Life Support Apparatus
ELV	Expendable Launch Vehicle
ELVIS	Enhanced Launch Vehicle Imagery System
EMC	Electromagnetic Compatibility
EME	Electromagnetic Effects
EMI	Electromagnetic Interference
EMS	Emergency Medical System
EMS	Environmental Management System

ENR	Engineering News Record
EO	Engineering Order
EPA	Environmental Protection Act
ERD	Engineering Requirements Document
ESA	European Space Agency
ESC	Engineering Services Contract
ESC	Exploration Ground Launch Services
ESOHMS	Environmental Safety and Occupational Health Management System
ESR	Engineering Support Request
EST	Estimate
ET	External Tank
F/A	Failure Analysis
FAA	Federal Aviation Administration
FAR	Federal Acquisition Regulation
FAST	Federal Automotive Statistical Tool
FBI	Federal Bureau of Investigation
FCE	Flight Crew Equipment
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FEC	Florida East Coast
FEC	Field Engineering Change
FEIT	Flight Element Integration Test
FEMP	Federal Energy Management Program

FEU	Flight Equivalent Unit
FICA	Federal Insurance Contribution Act
FIPS	Federal Information Processing Standard
FISMA	Federal Information Security Management Act
FMEA	Failure Modes and Effects Analyses
FOC	Full Operational Capability
FOD	Foreign Object Debris
FR	Firing Room
FRCS	Forward Reaction Control System
FRF	Flight Readiness Firing
FRM	Fleet Resource Management
FRR	Flight Readiness Review
FS	First Stage
FS&E	Facilities Systems and Equipment
FSE	Flight Support Equipment
FSEU	Facilities, Systems, Equipment, and Utilities
FSUA	Facility Space Utilization Application
FSW	Flight Software
FUO	Facility Utilization Officer
FY	Fiscal Year
G&A	General and Administrative
GAO	Government Accountability Office
GBL	Government Bills of Landing

GEIT	Ground Element Integration Testing
GFE	Government Furnished Equipment
GFP	Government Furnished Property
GFS	Government Furnished Services
GFY	Government Fiscal Year
GH&C	Guidance, Navigation and Control
GHe	Gaseous Helium
GIDEP	Government/Industry Data Exchange Program
GIS	Geographic Information System
GMIP	Government Mandatory Inspection Point
GN2	Gaseous Nitrogen
GO2	Gaseous Oxygen
GOP	Ground Operations Project
GOPD	Ground Operations Planning Document
GOPR	Ground Operations Processing Requirements
GOWG	Ground Operations Working Group
GP	General Publication
GPS	Global Positioning System
GS	Ground Systems
GS-OCD	Ground System Operational Concept Document
GSA	General Services Administration
GSE	Ground Support Equipment
GSI	Government Source Inspection

GOTS	Government Off The Shelf
GUI	Graphical User Interface
HA	Hazard Analyses
HAZMAT	Hazardous Materials
HMF	Hypergolic Maintenance Facility
HQ	Headquarters
HR	Hour
HTV	H II Transfer Vehicle (JAXA)
HVAC	Heating, Ventilation and Air Conditioning
I^3P	IT Integration Infrastructure Integration Program
IAM	Integrated Asset Management
IAW	in accordance with
ICAS	Institutional Computerized Archival System
ICD	Interface Control Document
ICE	Integrated Collaborative Environment
IDIQ	Indefinite Delivery/Indefinite Quantity
IDMM	Intermediate and Depot Maintenance Manuals
IEEE	Institute of Electrical and Electronics Engineers
IFA	In-Flight Anomaly
IG	Inspector General
ILSP	Integrated Logistics Support Plan
IM	Information Management
IMCS	Information Management and Communication Support

IMS	Inventory Management System
IOC	Initial Operations Capability
IOMS	Infrastructure Operations and Maintenance Services
IOP	Internal Operating Procedure
IPT	Integrated Product Team
IRN	Interface Revision Notice
IS	Interstage
ISC	Institutional Service Contract
ISI	In-Service Inspection
ISO	International Organization for Standardization
ISS	International Space Station
ISSP	International Space Station Program
IT	Information Technology
ITD	Inception to Date
ITAR	International Traffic in Arms Regulations
ITSM	Information Technology Security Manager
ITSSP	Information Technology System Security Plan
IVT	Interface Verification Test
IVG	Imagery Working Group
IVGVT	Integrated Vehicle Ground Vibration Test
IWG	Imagery Working Group
JAXA	Japan Aerospace Exploration Agency
JOCAS	Job Ordered Cost Accounting System

JSC	Johnson Space Center
KCCS	Kennedy Complex Control System
KDP	Kennedy Documented Procedure
KGCS	Kennedy Ground Control System
KICS	KSC Integrated Console Schedule
KISS	Kennedy Institutional Support Services
KNPD	Kennedy NASA Policy Directive
KNPR	Kennedy NASA Procedural Requirement
KPRD	Kennedy Program Requirements Document
KSC	Kennedy Space Center
kV	kilo-Volt
kVA	kilo-Volt Ampere
KY	Contract Year
LA	Local Authority
LAir	Liquid Air
LAP	Liquid Air Pack
LAS	Launch Abort System
LC	Launch Complex
LCC	Launch Commit Criteria
LCCWG	Launch Commit Criteria Working Group
LCC	Launch Control Center
LCH4	Liquid Methane
LCS	Launch Critical Spares
LCS	Launch Control System

LCN	Launch Change Notice
LETF	Launch Equipment Test Facility
LHe	Liquid Helium
LIDS	Low Impact Docking System
LLIS	Lessons Learned Information System
LMRT	Logistics Management Responsibility Transfer
LN2	Liquid Nitrogen
LO2	Liquid Oxygen
LO2A	Liquid Oxygen, Propellant Grade
LO2F	Liquid Oxygen High Purity
LOLI	Limited Operational Life Items
LRR	Launch Readiness Review
LRU	Line Replaceable Unit
LS	Life Support
LSA	Logistics Support Analyses
LSP	Launch Services Program
LSSP	Launch Site Support Plan
M&P	Materials and Processes
M&Q	Monthly and Quarterly
M/SAT	Multiflow/Space Allocation Team
MAF	Michoud Assembly Facility
MAP	Measurement Assurance Program
MAWP	Maximum Allowable Working Pressure

MDD	Mate/Demate Device
ME	Mission Essential
MEIT	Multi Element Integrated Test
MEOP	Maximum Expected Operating Pressure
MESC	Medical and Environmental Support Contract
MFD	Main Flame Deflector
MIDAS	Management Information Decision Analysis System
MILA	Merritt Island Launch Area
MIS	Management Information System
MIVP	Master Integration and Verification Plan
ML	Mobile Launcher (Constellation Program)
MLP	Mobile Launcher Platform (Space Shuttle Program)
MMH	Monomethyl Hydrazine
MMT	Mission Management Team
MOA	Memorandum of Agreement
MOSB	Multi-Operations Support Building
MOU	Memorandum of Understanding
MPPF	Multi-Purpose Processing Facility
MPS	Main Propulsion System
MRB	Material Review Board
MRR	Milestone Readiness Review
MSC	Material Service Center
MSDS	Material Safety Data Sheets

MSE	Maintenance Support Equipment
MSFC	Marshall Space Flight Center
MVP	Master Verification Plan
MW	Mega-Watt
N-Prop	NASA Property Management System
N2H4	Hydrazine
N2O4	Nitrogen Tetroxide
NACE	National Association of Corrosion Engineers
NADCAP	National Aerospace and Defense Contractors Accreditation Program
NaOH	Sodium Hydroxide
NASA	National Aeronautics and Space Administration
NASIRC	NASA Incident Response Center
NDE	Non-Destructive Evaluation
NDT	Non-Destructive Testing
NEDC	NASA Enterprise Data Center
NEPA	National Environmental Policy Act
NETS	NASA Environmental Tracking System
NF	NASA Form
NFPA	National Fire Protection Association
NFS	NASA Federal Acquisition Regulation Supplement
NH3	Ammonia
NIOSH	National Institute of Occupational Safety and Health
NIST	National Institute of Standards and Technology

NO	Nitrogen Oxide
NODIS	NASA Online Directives Information System
NOTU	Naval Ordinance Test Unit
NPD	NASA Policy Directive
NPDMS	NASA Property Disposal Management System
NPR	NASA Procedural Requirement
NPSC	NASA Protective Services Contract
NRC	Nuclear Regulatory Commission
NSA	National Security Agency
NSLD	NASA Shuttle Logistics Depot
NSS	NASA Safety Standard
NSSD	NASA Spacecraft Services Depot
NSTS	National Space Transportation System
NTD	NASA Test Director
NVR	Non-Volatile Residue
O&C	Operations and Checkout
O&M	Operations & Maintenance
O&SHA	Operating and Support Hazard Analysis
O/H	Overhead
OCD	Operational Concepts Document
OD	Operations Directives
ODC	Other Direct Costs
ODIN	Outsourcing Desktop Initiative for NASA

OEM	Original Equipment Manufacturer
OHF	Occupational Health Facility
OIG	Office of the Inspector General
OM&E	Operations, Maintenance, and Engineering
OMB	Office of Management and Budget
OMD	Operations and Maintenance Documentation
OMEU	Operations, Maintenance, Engineering, User
OMI	Operations and Maintenance Instruction
OMRS	Operational Maintenance Requirements Specification
OMRSD	Operational Maintenance Requirements and Specifications Document
OMS	Operations Management System
OMS	Orbital Maneuvering System
OPF	Orbiter Processing Facility
OR	Operations Requirements
ORD	Operational Readiness Date
ORR	Operational Readiness Review
ORU	Orbital Replacement Unit
OSE	Operations Support Element
OSHA	Occupational Safety and Health Administration
OT	Overtime
P&LS	Propellants and Life Support
PACAS	Personnel Access Control Accountability System
PAD	Launch Pad

PAFB	Patrick Air Force Base
PCC	Processing Control Center
PCMMU	Pulse Code Modulation Master Unit
PDL	Payload Data Library
PDMS	Product Data Management System
PDO	Property Disposal Officer
PDR	Preliminary Design Review
PEPC	Portable Equipment, Payloads and Cargo
PHA	Preliminary Hazard Analysis
PHSF	Payload Hazardous Servicing Facility
PIRN	Preliminary Interface Revision Notice
PIT	Payload Integration Tool
PKI	Public Key Infrastructure
PLC	Programmable Logic Controller
PLM	Product Lifecycle Management
PM	Preventive Maintenance
PMEL	Precision Measurement Equipment List
PMI	Periodic Maintenance Instructions
PMRB	Primary Material Review Board
PMS	Performance Management System
POC	Point Of Contact
POL	Petroleum, Oils, and Lubricants
POSS	Payload Operations Support Schedule

POST	Payload Operations Support Team
PP&E	Property, Plant and Equipment
PPBE	Planning, Programming, Budgeting and Execution
PPE	Personal Protective Equipment
PPF	Payload Processing Facility
PPSP	Post Production Support Property
PRACA	Problem Reporting, Analysis and Corrective Action
PRCU	Payload Rack Checkout Unit
PRD	Payload Requirements Document
PRD	Program Requirements Document
PRF	Parachute Refurbishment Facility
PRR	Payload Readiness Review
PS	Performance Standard
PS	Propellants Systems
PSET	Project Specific Engineering Tests
PSRD	Program Support Requirements Document
PT&I	Preventive Testing & Inspection
psi	Pounds Per Square Inch
PSM	Process Safety Management
PSP	Payload Support Plan
PV/S	Pressure Vessel/System
PWS	Performance Work Statement
QA	Quality Assurance

QMS	Quality Management Systems
QPR	Quarterly Program Review
R&M	Reliability and Maintainability
RAC	Risk Assessment Code
RC	Reporting Category
RCM	Reliability Centered Maintenance
RCN	Requirements Change Notice
RF	Radio Frequency
RID	Review Item Discrepancy
RMRS	Repeatable Maintenance Recall System
RMAS	Reliability, Maintainability, Availability and Supportability
ROCC	Range Operations Control Center
ROM	Rough Order of Magnitude
RP	Real Property
RP	Rocket Propellant
RPI	Real Property Inventory
RPO	Real Property Officer
RPSF	Rotation, Processing and Surge Facility
RRMF	Recycle, Reutilization, and Marketing Facility
RSA	Russian Space Agency
RSRB	Reusable Solid Rocket Booster
RTF	Run To Failure
RTGF	Radioisotope Thermoelectric Generator Facility

RVM	Requirements Verification Management
S&MA	Safety and Mission Assurance
SA	Spacecraft Adapter
SAA	System Assurance Analysis
SAE	Society of Automotive Engineers
SAE AS	Society of Automotive Engineers Aerospace Standard
SBU	Sensitive But Unclassified
SCA	System Criticality Analysis
SCADA	Supervisory Control and Data Acquisition
SCAPE	Self-Contained Atmospheric Protective Ensemble
SCM	Supply Chain Management
SCN	Software Change Notice
SDL	System Documentation List
SDLC	System Developmental Life Cycle
SDLP	System Development Lifecycle Plan
SDR	System Design Review
SDR	Shared Data Repository
SEWP	Solutions for Enterprise Wide Procurement
SESHL	Shuttle End State Hardware Listing
SFPA	Single Failure Point Analysis
SJRWMD	St. Johns River Water Management District
SLF	Shuttle Landing Facility
SLT	Support Launch Team

SM	Service Module
SMA	Safety and Mission Assurance
SP	Special Publication
SPA	Spare Parts Analysis
SPICE	Space Program Integrated Contract Environment
SPOC	Space Program Operations Contract
SR	State Road
SR&QA	Safety, Reliability and Quality Assurance
SRB	Solid Rocket Booster
SRD	System Requirements Document
SRM	Solid Rocket Motor
SRP	Standard Repair Procedure
SRR	System Requirements Review
SRU	Shop Replaceable Unit
SS	Social Security
SSM	Subsystem Manager
SSME	Space Shuttle Main Engine
SSMT	Self Service Management Tool
SSP	Space Shuttle Program
SSPF	Space Station Processing Facility
SSR	Safety Statistics Record
ST	Standard Time
STD	Standard

STE	Secure Terminal Equipment
STE	Special Test Equipment
STS	Space Transportation System
STU	Secure Telephone Unit
STU-III	Secure Telephone Unit Version III
SW	Space Wing
T&R	Transition and Retirement
T&V	Test and Verification
TAIR	Test, Assembly, and Inspection Record
TALS	Transatlantic Abort Landing Site
TAWS	Tornado Area Warning System
TBD	To Be Determined
TCRS	Training Certification Record System
TDRSS	Tracking and Data Relay Satellite System
TDRSS/CTN	Tracking and Data Relay Satellite System/Commercial Technology Network
TDY	Temporary Duty
TechDoc	Technical Documentation
Tel-4	Central Telemetry Facility
TGHR	Time-critical Ground Handling Requirements
TIM	Technical Interchange Meeting
TMDE	Test, Measurement and Diagnostic Equipment
TPSF	Thermal Protection System Facility
TRI	Toxic Release Inventory

TRL	Technical Readiness Level
TT&E	Test, Teardown, and Evaluation
TV	Television
TVR	Test Verification Requirement
TVR-O	Test Verification Requirement – Operations
U.S.	United States
UA	Utility Annex
UDMH	Unsymmetrical Dimethyl Hydrazine
UDS	Universal Documentation System
UL	Underwriter's Laboratory
UPS	Uninterruptible Power Supply
US	Upper Stage
USAF	United States Air Force
USE	Upper Stage Engine
USOS	United States Operational Segment
V	Volt
V&V	Verification and Validation
VAB	Vehicle Assembly Building
VAFB	Vandenberg Air Force Base
VCF	Vapor Containment Facility
Vdc	Volts direct current
VEBA	Voluntary Employee Benefit Association
VPP	Voluntary Protection Program

VR	Validation Requirement
WAD	Work Authorization Document
WARN	Workforce Adjustment and Retaining Notification
WBS	Work Breakdown Structure
WCS	Work Control System
WG	Working Group
WI	Work Instructions
WLI	WorkLoad Indicators
WSTF	White Sands Test Facility
WYE	Work Year Equivalent
YTD	Year to Date

NNK11EA08C

ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-19

DD FORM 254

DEPARTMENT OF DEFENSE
CONTRACT SECURITY CLASSIFICATION
SPECIFICATION

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DEPARTMENT OF DEFENSE

CONTRACT SECURITY CLASSIFICATION SPECIFICATION

(The requirements of the DoD Industrial Security Manual apply to all security aspects of this effort.)

1. CLEARANCE AND SAFEGUARDING

a. FACILITY CLEARANCE REQUIRED: Secret

b. LEVEL OF SAFEGUARDING REQUIRED: None

2. THIS SPECIFICATION IS FOR: *(x and complete as applicable)*

☒	a. PRIME CONTRACT NUMBER: NNK11EA08C	
☐	b. SUBCONTRACT NUMBER	
☐	c. SOLICITATION OR OTHER NUMBER	DUE DATE *(YYMMDD)*

3. THIS SPECIFICATION IS: *(x and complete as applicable)*

☐	a. ORIGINAL (Complete date in all cases)		DATE *(YYMMDD)*
☒	b. REVISED (Supersedes all previous specs)	Revision No. REV: Rev 1	DATE *(YYMMDD)*: 130212
☐	c. FINAL (Complete Item 5 in all cases)		DATE *(YYMMDD)*

4. THIS IS A FOLLOW-ON CONTRACT? ☐ YES ☒ NO. If Yes, complete the following:

Classified material received or generated under _____ *(Preceding Contract Number)* is transferred to this follow-on contract.

5. IS THIS A FINAL DD FORM 254? ☐ YES ☒ NO. If Yes, complete the following:

In response to the contractor's request dated _____, retention of the identified classified material is authorized for the period of _____

6. CONTRACTOR *(Include Commercial and Government Entity (CAGE) Code)*

a. NAME, ADDRESS, AND ZIP CODE		
QINETIQ NORTH AMERICA, INC. 7918 Jones Branch Dr. Suite 350 McLean, VA 22102	4CGE4	Defense Security Service (IOFCC2) 14428 Albemarle Point Pl., Suite 140 Chantilly, VA 20151

7. SUBCONTRACTOR

a. NAME, ADDRESS, AND ZIP CODE	b. CAGE CODE	c. COGNIZANT SECURITY OFFICE *(Name, Address, and Zip code)*

8. ACTUAL PERFORMANCE

a. LOCATION	b. CAGE CODE	c. COGNIZANT SECURITY OFFICE *(Name, Address, and Zip Code)*
QINETIQ NORTH AMERICA, INC. Services and Solutions Group-Fairfax, VA 11091 Sunset Hills Rd., Suite 200 Reston, VA 20190	57SH7	Defense Security Service (IOFCC2) 14428 Albemarle Point Pl., Suite 140 Chantilly, VA 20151

9. GENERAL IDENTIFICATION OF THIS PROCUREMENT

Engineering Services Contract personnel working in the Electromagnetic Laboratory will require access to areas where NASA and fCape Canaveral Air Force Station Payload customers perform classified payload operations.

10. THIS CONTRACT WILL REQUIRE ACCESS TO:	YES	NO
a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION	☒	☐
b. RESTRICTED DATA	☐	☒
c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION	☐	☒
d. FORMERLY RESTRICTED DATA	☐	☒
e. INTELLIGENCE INFORMATION:		
(1) Sensitive Compartmented information (SCI)	☐	☒
(2) Non-SCI	☐	☒
f. SPECIAL ACCESS INFORMATION	☐	☒
g. NATO INFORMATION	☐	☒
h. FOREIGN GOVERNMENT INFORMATION	☐	☒
i. LIMITED DISSEMINATION INFORMATION	☐	☒
j. FOR OFFICIAL USE ONLY INFORMATION	☒	☐
k. OTHER *(Specify)*	☐	☒

11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:	YES	NO
a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY	☒	☐
b. RECEIVE CLASSIFIED DOCUMENTS ONLY	☐	☒
c. RECEIVE AND GENERATE CLASSIFIED MATERIAL	☐	☒
d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE	☐	☒
e. PERFORM SERVICES ONLY	☐	☒
f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES	☐	☒
g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER	☐	☒
h. REQUIRE A COMSEC ACCOUNT	☐	☒
i. HAVE TEMPEST REQUIREMENTS	☐	☒
j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS	☐	☒
k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE	☐	☒
l. OTHER *(Specify)*		

DD FORM 254 Front

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12. PUBLIC RELEASE. Any information *(classified or unclassified)* pertaining to this contract shall not be released for public dissemination except as provided by the iNISPOM or unless it has been approved for public release by appropriate U.S. Government authority. Proposed public releases shall be submitted for approval prior to release

☐ Direct ☒ Through *(Specify)*:

JOHN F. KENNEDY SPACE CENTER (KSC)
ATTN: XA, PUBLIC AFFAIRS
KSC, FL 32899

"To the Office of Public Affairs, National Aeronautics and Space Administration, Washington, DC 20546, for review."

13. SECURITY GUIDANCE. The security classification guidance needed for this classified effort is identified below. If any difficulty is encountered in applying this guidance or if any other contributing factor indicates a need for changes in this guidance, the contractor is authorized and encouraged to provide recommended changes; to challenge the guidance or the classification assigned to any information or material furnished or generated under this contract; and to submit any questions for interpretation of this guidance to the official identified below. Pending final decision, the information involved shall be handled and protected at the highest level of classification assigned or recommended. *(Fill in as appropriate for the classified effort. Attach, or forward under separate correspondence, any documents/guides/extracts referenced herein. Add additional pages as needed to provide complete guidance.)*

1. Actual Performance of Work will be at NASA Kennedy Space Center, FL and Cape Canaveral AFS, FL.
2. Contractor will be a long-term visitor to KSC and Cape Canaveral AFS, FL.
3. Classification guidance will be provided under separate cover as required.
4. Contracting Officer's Technical (COTR) is Nancy Hoffman.
5. Contracting Officers (CO) are Ellen Lamp/Tara M. Francisco.

14. ADDITIONAL SECURITY REQUIREMENTS. Requirements, in addition to NISPOM requirements, are established for this contract. *(If Yes, identify the pertinent contractual clauses in the contract document itself, or provide any appropriate statement which identifies the additional requirements. Provide a copy of the requirements to the cognizant security office. Use Item 13 if additional space is needed.)* ☒ Yes ☐ No

As a long term visitor, the contractor shall comply with all applicable KSC Security issuances.

15. INSPECTIONS. Elements of this contract are outside the inspection responsibility of the cognizant security office. *(If Yes, explain and identify specific areas or elements carved out and the activity responsible for inspections. Use Item 13 if additional space is needed.)* ☒ Yes ☐ No

Inspection of contractor activities on KSC is the responsibility of NASA KSC Protective Services Office.

16. CERTIFICATION AND SIGNATURE. Security requirements stated herein are complete and adequate for safeguarding the classified information to be released or generated under this classified effort. All questions shall be referred to the official named below.

a. TYPED NAME OF CERTIFYING OFFICIAL	b. TITLE	c. TELEPHONE *(Include Area Code)*
Jo Ann Brophy	Industrial Security Manager	(321) 867-2453

d. ADDRESS *(Include Zip Code)*

NASA
ATTN: TA-A2
Kennedy Space Center, FL 32899

e. SIGNATURE

Jo Ann Brophy 2/12/13

17. REQUIRED DISTRIBUTION

- ☒ a. CONTRACTOR
- ☐ b. SUBCONTRACTOR
- ☒ c. COGNIZANT SECURITY OFFICE FOR PRIME AND SUBCONTRACTOR
- ☐ d. U.S. ACTIVITY RESPONSIBLE FOR OVERSEAS SECURITY ADMINISTRATION
- ☒ e. ADMINSTRATIVE CONTRACTING OFFICER
- ☒ f. OTHERS AS NECESSARY : XA

DD FORM 254 Reverse

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ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-20

MENTOR PROTÉGÉ AGREEMENT

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National Aeronautics and Space Administration (NASA)

Mentor-Protégé Program

QinetiQ North America/Enterprise Advisory Services, Inc (QNA/Easi) Agreement

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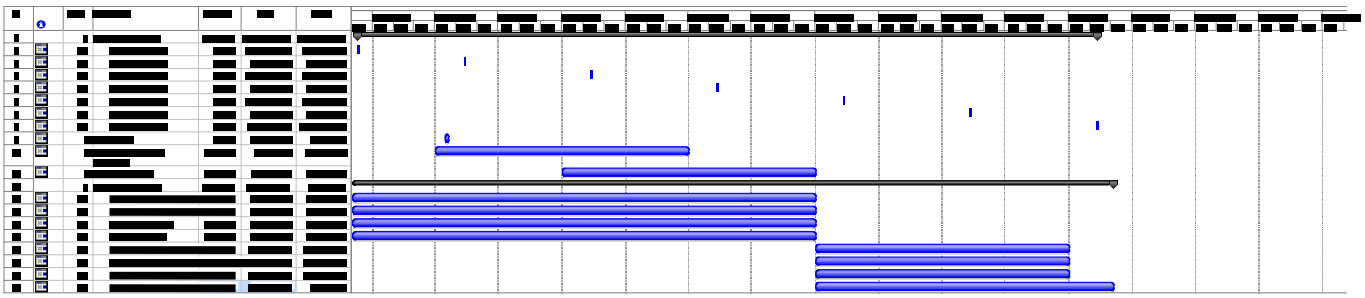

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ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-21

INFORMATIONAL INSTRUCTIONS REGARDING THE PROCESS FOR ACCOMPLISHING CONTRACTOR 3RD PARTY WORK (C3PW) ON KENNEDY SPACE CENTER (KSC)

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Informational Instructions Regarding

The Process For Accomplishing

Contractor 3RD-Party Work (C3PW) on KSC

(MARCH 2013)

A. Purpose

The purpose of this instruction is to inform the contractor regarding the process that must be followed if the contractor wishes to perform work for third parties on KSC. This process shall be effective immediately. C3PW is defined as work performed by the contractor on KSC and paid for via any agreement other than this contract. The guidance provided herein applies only to C3PW the contractor wishes to perform and where contractor personnel performing the C3PW are resident on KSC when doing so.

B. Background

C3PW performed by the contractor and its subcontractors on KSC will utilize or benefit from Government resources and services, and most likely will also involve use of Government Property (GP) identified in this contract. The contractor's workforce's mere presence on KSC benefits from the installation's resources (housing, roads, grounds, utilities, communications, emergency services, equipment, installation management and administrative support, etc.), the costs of which are paid by the Government but which would otherwise be a part of the contractor's costs of doing business if located offsite. These benefits are considered "special benefits to an identifiable recipient above and beyond those which accrue to the public at large" and others in the commercial market place would have to pay for such costs of doing business. NASA policy requires that, when such benefits are existent in a circumstance where a contractor is performing C3PW, a charge shall be imposed to recover the full cost for the service, goods, or resource provided. In such circumstances, an agreement independent of this contract must be executed between the contractor and NASA KSC under which al1 the costs of such Government resources, as may be utilized, or benefit a particular instance of C3PW, are defined and the contractor agrees to pay, in addition to other applicable conditions and requirements. This agreement will be in the form of a Reimbursable Space Act Agreement (RSAA). RSAA's are entirely independent of this contract. The requirements as to the data required to enter into such agreements, the terms of the agreements, issues related to the administration of the agreements, and resolution of all issues related thereto shall be addressed with the Contracting Officer's Representative (COR), as applicable, responsible for administering the RSAA.

C. Use of GP Identified in the Contract

Contractor-accountable Government Property (CAGP) and Installation-accountable Government Property (IAGP) identified in the lists in the contract shall be used only for performance of the contract unless approval for other use is provided by the Contracting Officer for CAGP or the Supply and Equipment Management Officer (SEMO) for IAGP. The conditions for such use are specified with each approval. For C3PW that will require an RSAA and where the work will utilize CAGP or IAGP identified in the lists in the contract, NASA will determine if use fees will apply. If it is determined that use fees apply, then approval for use of the specified CAGP or IAGP will be provided by the Contracting Officer or SEMO, as applicable, in each RSAA Annex, the applicable use fees will be specified therein, and the RSAA Annex will constitute the establishment of use fees pursuant to the contract's Use and Charges clause. If use fees will not apply, the cognizant Contracting Officer and/or the SEMO, as applicable, shall sign the annex indicating that other adequate consideration is being received in lieu of use fees. In addition, the COR's signature will be included in each RSAA Annex, per the standard SAA process.

D. Use of All Other Government Resources

Before the contractor performs any instance of C3PW on KSC, the contractor shall ascertain the need for Government resources, enter into an RSAA for any such Government resources that will be utilized or benefit each instance of C3PW, and comply with the requirements specified therein. If the work to be performed outside this contract involves work under another federal agency's prime contract, including a subcontract thereto, the contractor shall coordinate with the Contracting Officer or COR on this contract to identify the applicable documentation requirements, and shall not assume an RSAA is or is not required. In such instances, regardless of whether or not an RSAA would be required, the contractor must obtain the Contracting Officer's approval for use of GP when performing as a prime or subcontract under any other Government contract(s).

E. Point of Contact for C3PW and RSAAs

The point of contact regarding C3PW and entering into an RSAA is the COR.

If the work is performed as a subcontractor (at any tier) to a cost-type NASA prime contract, this is not C3PW work and an RSAA is not required, but use of GP must be approved by the Contracting Officer. In this circumstance, a request for rent-free use should be sent to the Contracting Officer.

(End of instructions)

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ENGINEERING SERVICES

CONTRACT

ATTACHMENT J-22

CLAUSE I.157.1 – NFS 1852.215-85

PROPOSAL ADEQUACY CHECKLIST

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As prescribed in 1815.408-70(c), use the following provision:

The offeror shall complete the following checklist, providing location of requested information, or an explanation of why the requested information is not provided. In preparation of the offeror's checklist, offerors may elect to have their prospective subcontractors use the same or similar checklist as appropriate.

PROPOSAL ADEQUACY CHECKLIST (MARCH 2014)				
	REFERENCES	SUBMISSION ITEM	PROPOSAL PAGE No.	If not provided EXPLAIN (may use continuation pages traceable to this checklist)
GENERAL INSTRUCTIONS				
1.	FAR 15.408, Table 15-2, Section I Paragraph A	Is there a properly completed first page of the proposal per FAR 15.408 Table 15-2 I.A or as specified in the solicitation?		
2.	FAR 15.408, Table 15-2, Section I Paragraph A(7)	Does the proposal identify the need for Government-furnished material/ tooling/test equipment? Include the accountable contract number and contracting officer contact information if known.		
3.	FAR 15.408, Table 15-2, Section I Paragraph A(8)	If your organization is subject to Cost Accounting Standards (CAS), does the proposal identify the current status of your CAS Disclosure Statement? Does the proposal identify and explain notifications of noncompliance with Cost Accounting Standards Board or Cost Accounting Standards (CAS); any proposal inconsistencies with your disclosed practices or applicable CAS; and inconsistencies with your established estimating and accounting principles and procedures?		

PROPOSAL ADEQUACY CHECKLIST (MARCH 2014)				
	REFERENCES	SUBMISSION ITEM	PROPOSAL PAGE No.	If not provided EXPLAIN (may use continuation pages traceable to this checklist)
4.	FAR 15.408, Table 15-2, Section I, Paragraph C(1) FAR 2.101, "Cost or pricing data"	Does the proposal disclose any other known activity that could materially impact the costs? This may include, but is not limited to, such factors as— (1) Vendor quotations; (2) Nonrecurring costs; (3) Information on changes in production methods and in production or purchasing volume; (4) Data supporting projections of business prospects and objectives and related operations costs; (5) Unit-cost trends such as those associated with labor efficiency; (6) Make-or-buy decisions; (7) Estimated resources to attain business goals; and (8) Information on management decisions that could have a significant bearing on costs.		
5.	FAR 15.408, Table 15-2, Section I Paragraph B	Is an Index of all certified cost or pricing data and information accompanying or identified in the proposal provided and appropriately referenced?		
6.	FAR 15.403-1(b)	Are there any exceptions to submission of certified cost or pricing data pursuant to FAR 15.403-1(b)? If so, is supporting documentation included in the proposal? (Note questions 18-20.)		

PROPOSAL ADEQUACY CHECKLIST (MARCH 2014)				
	REFERENCES	SUBMISSION ITEM	PROPOSAL PAGE No.	If not provided EXPLAIN (may use continuation pages traceable to this checklist)
7.	FAR 15.408, Table 15-2, Section I Paragraph C(2)(i)	Does the proposal disclose the judgmental factors applied and the mathematical or other methods used in the estimate, including those used in projecting from known data?		
8.	FAR 15.408, Table 15-2, Section I Paragraph C(2)(ii)	Does the proposal disclose the nature and amount of any contingencies included in the proposed price?		
9.	FAR 15.408 Table 15-2, Section II, Paragraph A or B	Does the proposal explain the basis of all cost estimating relationships (labor hours or material) proposed on other than a discrete basis?		
10.	FAR 15.408, Table 15-2, Section I Paragraphs D and E	Is there a summary of total cost by element of cost and are the elements of cost cross-referenced to the supporting cost or pricing data? (Breakdowns for each cost element must be consistent with your cost accounting system, including breakdown by year.)		
11.	FAR 15.408, Table 15-2, Section I Paragraphs D and E	If more than one Contract Line Item Number (CLIN) or sub Contract Line Item Number (sub-CLIN) is proposed as required by the RFP, are there summary total amounts covering all line items for each element of cost and is it cross-referenced to the supporting cost or pricing data?		
12.	FAR 15.408, Table 15-2, Section I Paragraph F	Does the proposal identify any incurred costs for work performed before the submission of the proposal?		

PROPOSAL ADEQUACY CHECKLIST (MARCH 2014)				
	REFERENCES	SUBMISSION ITEM	PROPOSAL PAGE No.	If not provided EXPLAIN (may use continuation pages traceable to this checklist)
13.	FAR 15.408, Table 15-2, Section I Paragraph G	Is there a Government forward pricing rate agreement (FPRA)? If so, the offeror shall identify the official submittal of such rate and factor data. If not, does the proposal include all rates and factors by year that are utilized in the development of the proposal and the basis for those rates and factors?		
COST ELEMENTS				
MATERIALS AND SERVICES				
14.	FAR 15.408, Table 15-2, Section II Paragraph A	Does the proposal include a consolidated summary of individual material and services, frequently referred to as a Consolidated Bill of Material (CBOM), to include the basis for pricing? The offeror's consolidated summary shall include raw materials, parts, components, assemblies, subcontracts and services to be produced or performed by others, identifying as a minimum the item, source, quantity, and price.		

PROPOSAL ADEQUACY CHECKLIST (MARCH 2014)				
	REFERENCES	SUBMISSION ITEM	PROPOSAL PAGE No.	If not provided EXPLAIN (may use continuation pages traceable to this checklist)
SUBCONTRACTS (Purchased materials or services)				
15.	FAR 15.404-3(c) FAR 52.244-2	Per the thresholds of FAR 15.404-3(c), Subcontract Pricing Considerations, does the proposal include a copy of the applicable subcontractor's certified cost or pricing data?		
16.	FAR 15.408, Table 15-2, Note 1; Section II Paragraph A	Is there a price/cost analysis establishing the reasonableness of each of the proposed subcontracts included with the proposal? If the offeror's price/cost analyses are not provided with the proposal, does the proposal include a matrix identifying dates for receipt of subcontractor proposal, completion of fact finding for purposes of price/cost analysis, and submission of the price/cost analysis?		
EXCEPTIONS TO CERTIFIED COST OR PRICING DATA				
17.	FAR 52.215-20 FAR 2.101, "commercial item"	Has the offeror submitted an exception to the submission of certified cost or pricing data for commercial items proposed either at the prime or subcontractor level, in accordance with provision 52.215-20? a. Has the offeror specifically identified the type of commercial item claim (FAR 2.101 commercial item definition, paragraphs (1) through (8)), and the basis on which the item meets the definition?		

PROPOSAL ADEQUACY CHECKLIST (MARCH 2014)				
	REFERENCES	SUBMISSION ITEM	PROPOSAL PAGE No.	If not provided EXPLAIN (may use continuation pages traceable to this checklist)
		b. For modified commercial items (FAR 2.101 commercial item definition paragraph (3)); did the offeror classify the modification(s) as either— i. A modification of a type customarily available in the commercial marketplace (paragraph (3)(i)); or ii. A minor modification (paragraph (3)(ii)) of a type not customarily available in the commercial marketplace made to meet Federal Government requirements not exceeding the thresholds in FAR 15.403-1(c)(3)(iii)(B)? c. For proposed commercial items "of a type", or "evolved" or modified (FAR 2.101 commercial item definition paragraphs (1) through (3)), did the contractor provide a technical description of the differences between the proposed item and the comparison item(s)?		
18.	FAR 15.408, Table 15-2, Section II Paragraph A(1)	Does the proposal support the degree of competition and the basis for establishing the source and reasonableness of price for each subcontract or purchase order priced on a competitive basis exceeding the threshold for certified cost or pricing data?		

PROPOSAL ADEQUACY CHECKLIST (MARCH 2014)				
	REFERENCES	SUBMISSION ITEM	PROPOSAL PAGE No.	If not provided EXPLAIN (may use continuation pages traceable to this checklist)
INTERORGANIZATIONAL TRANSFERS				
19.	FAR 15.408, Table 15-2, Section II Paragraph A.(2)	For inter-organizational transfers proposed at cost, does the proposal include a complete cost proposal in compliance with Table 15-2?		
20.	FAR 15.408, Table 15-2, Section II Paragraph A(1)	For inter-organizational transfers proposed at price in accordance with FAR 31.205-26(e), does the proposal provide an analysis by the prime that supports the exception from certified cost or pricing data in accordance with FAR 15.403-1?		
DIRECT LABOR				
21.	FAR 15.408, Table 15-2, Section II Paragraph B	Does the proposal include a time phased (i.e.; monthly, quarterly) breakdown of labor hours, rates and costs by category or skill level? If labor is the allocation base for indirect costs, the labor cost must be summarized in order that the applicable overhead rate can be applied.		
22.	FAR 15.408, Table 15-2, Section II Paragraph B	For labor Basis of Estimates (BOEs), does the proposal include labor categories, labor hours, and task descriptions~~,~~ (e.g.; Statement of Work reference, applicable CLIN, Work Breakdown Structure, rationale for estimate, applicable history, and time-phasing)?		

PROPOSAL ADEQUACY CHECKLIST (MARCH 2014)				
	REFERENCES	SUBMISSION ITEM	PROPOSAL PAGE No.	If not provided EXPLAIN (may use continuation pages traceable to this checklist)
23.	FAR subpart 22.10	If covered by the Service Contract Labor Standards statute (41 U.S.C. chapter 67), are the rates in the proposal in compliance with the minimum rates specified in the statute?		
INDIRECT COSTS				
24.	FAR 15.408, Table 15-2, Section II Paragraph C	Does the proposal indicate the basis of estimate for proposed indirect costs and how they are applied? (Support for the indirect rates could consist of cost breakdowns, trends, and budgetary data.)		
OTHER COSTS				
25.	FAR 15.408, Table 15-2, Section II Paragraph D	Does the proposal include other direct costs and the basis for pricing? If travel is included does the proposal include number of trips, number of people, number of days per trip, locations, and rates (e.g. airfare, per diem, hotel, car rental, etc)?		
26.	FAR 15.408, Table 15-2, Section II Paragraph E	If royalties exceed $1,500 does the proposal provide the information/data identified by Table 15-2?		
27.	FAR 15.408, Table 15-2, Section II Paragraph F	When facilities capital cost of money is proposed, does the proposal include submission of Form CASB-CMF or reference to an FPRA/FPRP and show the calculation of the proposed amount?		

PROPOSAL ADEQUACY CHECKLIST (MARCH 2014)				
	REFERENCES	SUBMISSION ITEM	PROPOSAL PAGE No.	If not provided EXPLAIN (may use continuation pages traceable to this checklist)
FORMATS FOR SUBMISSION OF LINE ITEM SUMMARIES				
28.	FAR 15.408, Table 15-2, Section III	Are all cost element breakdowns provided using the applicable format prescribed in FAR 15.408, Table 15-2 III? (or alternative format if specified in the request for proposal)		
29.	FAR 15.408, Table 15-2, Section III Paragraph B	If the proposal is for a modification or change order, have cost of work deleted (credits) and cost of work added (debits) been provided in the format described in FAR 15.408, Table 15-2.III.B?		
30.	FAR 15.408, Table 15-2, Section III Paragraph C	For price revisions/redeterminations, does the proposal follow the format in FAR 15.408, Table 15-2.III.C?		
OTHER				
31.	FAR 16.4	If an incentive contract type, does the proposal include offeror proposed target cost, target profit or fee, share ratio, and, when applicable, minimum/maximum fee, ceiling price?		
32.	FAR 16.203-4 and FAR 15.408 Table 15-2, Section II, Paragraphs A, B, C, & D	If Economic Price Adjustments are being proposed, does the proposal show the rationale and application for the economic price adjustment?		

PROPOSAL ADEQUACY CHECKLIST (MARCH 2014)				
	REFERENCES	SUBMISSION ITEM	PROPOSAL PAGE No.	If not provided EXPLAIN (may use continuation pages traceable to this checklist)
33.	FAR 52.232-28	If the offeror is proposing Performance-Based Payments-did the offeror comply with FAR 52.232-28?		
34.	FAR 15.408(n) FAR 52.215-22 FAR 52.215-23	Excessive Pass-through Charges– Identification of Subcontract Effort: If the offeror intends to subcontract more than 70% of the total cost of work to be performed, does the proposal identify: (i) the amount of the offeror's indirect costs and profit applicable to the work to be performed by the proposed subcontractor(s); and (ii) a description of the added value provided by the offeror as related to the work to be performed by the proposed subcontractor(s)?		

End of provision)

NNK11EA08C

ENGINEERING SERVICES

CONTRACT

APPENDIX A
DATA REQUIREMENTS LIST

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Item	Title
1	Contract Management Plan
2	Laboratories and Developmental Shop Innovation Report
3	Advance Notification of Workforce Reduction Report
4	Quarterly Contractor Workforce Report
5	Quarterly Summary of 3rd Step Grievances and Arbitrations Report
6	Work Breakdown Structure and Dictionary
7	Risk Management Plan
8	Internal Surveillance Plan
9	Internal Surveillance Report
10	Contractor Financial Management Analysis Report
11	e533 Flat File
12	Annual Phased Contract Operating Plan and Negotiated Estimated Cost (NEC) Report
13	Rate-Volume Variance Analysis Report
14	Direct and Indirect Rates Report and Review
15	Task Order Value by Cost Element by Award Fee Period
16	Annual IT NASA Headquarters and Special IT Budget Report
17	Environmental Management Plan
18	Emergency Preparedness Plan
19	Security Management Plan
20	Export Control Plan
21	Technology Transfer Plan
22	Technology Transfer Report
23	Safety and Health Plan
24	VPP Application
25	Safety Statistics Record
26	Quality Plan
27	IT Management / Software Management Plan
28	RESERVED
29	IT System Security Plan
30	Records Management Plan and Annual Summary of Record Holdings
31	Configuration and Data Management Plan
32	Motor Vehicle Utilization Plan
33	Task Order Plan
34	Negotiated Estimated Cost (NEC) Report

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INSTRUCTIONS FOR COMPLETING CONTRACT APPLICATION INFORMATION

NNK11EA08C Appendix A

A. **LINE ITEM NO**. Sequentially number line items beginning with number 001.

B. **LINE ITEM TITLE** - Enter the title of the data item, as shown in the Statement of Work (SOW), the RFP and/or as directed by the CTM.

C. **OPR** (OFFICE OF PRIMARY RESPONSIBILITY) - Enter the organization designated to exercise technical and or administrative control over the data requirement. Use approved organizational code.

D. **TYPE - Enter** "Type of Data" code as follows:

CODE	DESCRIPTION
1	Data requiring written approval by the procuring activity prior to implementation into the procurement or development program.
2	Data submitted to the procuring activity for review not later than three weeks prior to project implementation. Data shall be considered approved unless the contractor has been notified of disapproval prior to project implementation.
3	Data submitted to the procuring activity for coordination, surveillance, or information.
4	Data retained by the contractor to be made available to the procuring activity upon request. The contractor shall furnish a list to the procuring activity.
5	Data to be retained by the contractor and reviewed by NASA on request.

E. **INSPECT/ACCEPT** - Enter Inspection Acceptance code as follows:

CODE	INSPECTION	ACCEPTANCE	CODE	INSPECTION	ACCEPTANCE
1	Source	Source	4	Certificate of Conformance	(Mandatory)
2	Destination (OPR)	Destination (OPR)	5	Certificate of Conformance	(Optional)
3	Source	Destination (OPR)	6	No Inspection Required No	Acceptance Required

F. **FREQ. OF SUBM**. - Enter the frequency of submission code as follows:

CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
AD	AS DIRECTED	PC	PER CONTRACT	PV	PER VEHICLE
AN	ANNUAL	PD	PER FAILURE	QU	QUARTERLY
AR	AS REQUIRED	PE	PER EVENT	RD	AS RELEASED
BE	BIENNIAL	PF	PER FACILITY	RT	ONE TIME & REVISIONS
BM	BIMONTHLY (every two months)	PG	PER PROGRAM	SA	SEMI ANNUALLY
BW	BIWEEKLY (every two weeks)	PI	PER EQUIPMENT END ITEM	SM	SEMI MONTHLY
DA	DAILY	PJ	PER PROJECT	TY	THREE YEAR PERIOD
DD	DEFERRED DELIVERY	PL	PER LAUNCH FLIGHT MISSION	UR	UPON REQUEST
MO	MONTHLY	PS	PER SYSTEM	WK	WEEKLY
OT	ONE TIME	PT	PER TEST		

G. **INITIAL SUBMITTAL**- Enter date of initial submittal as follows: Month, Day, Year. If calendar date is not scheduled, enter number of days preceding, or following, event to which the data requirement is related (e.g., 90 days prior to launch). Amplify in REMARKS, Item J, if necessary.

H. **AS OF DATE** - For "Onetime Only" submittals, enter date by month/day/year. For recurring submittals, enter number coding (e.g., 30/10, 90/10, 15/5, etc.). The first digit(s) indicate the number of calendar days from the reporting period's (Block F) start to the data preparation cut off. The second digit(s), after the slash, indicate the number of calendar days from the cut off to the submittal date. Example: If Block F were "MO" and Block H were "30/10", the data would include the entire month and would be submitted within 10 days thereafter.

J. **REMARKS:** Enter in this space:

a. Minor exceptions to the DRD.
b. Stipulation of specific forms when multiple forms are authorized on the DRD.
c. The paragraph, page, etc., in an existing contract where the data requirement is specified. (This data may be removed at final approval.)
d. Additional submittal information, if necessary.

K. **DISTRIBUTION** - Enter organizational symbol, number of copies, and type of copy code(s) (in parenthesis) required for each office. Type of copy codes are as follows:

CODE	DEFINITION	CODE	DEFINITION
A	Regular	C	Microfilm, Aperture Cards
B	Reproducible	D	Other, (Explain in remarks, Item J).

EXAMPLE ENTRIES: IS-PRO-2 (1A) = One regular copy.
IS-PRO-3 (5 A, 1B) = Five Regular copies, One Reproducible copy.
Enter the total number of copies by type in the space provided

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INSTRUCTIONS FOR COMPLETING DATA REQUIREMENT DESCRIPTION

GENERAL - The Data Requirement Description (DRD) will be prepared to describe the content and provide preparation information for data required in support of NASA programs.

1. **TITLE** - Enter the title or type of document required. The first word of the title should be a principal noun which best established the basic concept of the data. Subsequent words should be appropriate modifiers.

Examples: Plan, Project Development (SIVB)
Specification, Test (GSE)
Report, Quarterly Progress
Proposal, Engineering change (ECP)

2. **NUMBER** - Enter the appropriate number assigned to the DRD. This number will identify the appropriate data category.
3. **USE** - Enter a synopsis of the use of the document, stating reason for the requirement.
4. **DATE** - Enter date of preparation.
5. **ORGANIZATION** - Identify the installation preparing the DRD.
6. **REFERENCES** - List applicable documents by number, (NASA Management Manual, Mil Specifications, Federal Standards, NASA Procurement Regulation, etc.,) to which the preparing office (e.g., NASA installations, contractors, etc.) may refer for additional information concerning the data requirement.
7. **INTERRELATIONSHIP** - Enter all affected approved DRDs within the scope of the program when the DRD under preparation creates a significant impact or interface relationship with existing DRDs. Include a brief narrative of the impact or relationship created and a statement that the new DRD does not cause a conflict with other DRDs.
8. **PREPARATION INFORMATION** - Provide ample information for preparation of the data required by the data requirements description; include all necessary details of preparation to satisfy the originator's formal requirements.

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 001

B. Line Item Title:

Contract Management Plan

C. OPR	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
NE-I	1	2	AR/AN	See Block J	See Block J

J. Remarks:

The Contractor shall submit a draft Contract Management Plan within 30 calendar days after contract start and shall submit the final Plan for approval within 120 calendar days of contract start. The plan shall be updated as required and re-certified annually no later than 1 October of every year. Changes shall be incorporated as required by change page or complete reissue. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government. The Contractor shall also publish this DR electronically on the Contractor's Management System in a Government-accessible location and format.

K. Distribution

ESC COTR/Mail Code: NE-I (1D)
ESC CO/Mail Code: OP-ES-A (1A) (1D)
Safety and Mission Assurance/Mail Code: SA-E2 (1D)

Totals	
No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title

Plan, Contract Management

2. Number

1.1 - 001

3. Use

To describe the Contractor's management organization, approach and systems to implement detailed management activities

4. Date

TBD

5. Organization

KSC

7. Interrelationship

DR008 (Internal Surveillance Plan)
DR018 (Emergency Preparedness Plan)
DR007 (Risk Management Plan)
DR023(Safety and Health Plan)
DR026 (Quality Plan)

6. References

N/A

8. Preparation Information

The Management Plan shall describe the basis for the Contractor management functions related to organization, approach and systems. The Plan shall provide a comprehensive integration of all management systems of the prime, subcontractors, and major vendors. The systems shall include those specifically required to accomplish the Performance Work Statement, as well as those systems and procedures that are to be set in place by the Contractor.

The Management Plan shall address the Contractor's plans for work planning, organization, implementation, direction, control, and reporting for activities under this Performance Work Statement. The Plan shall address:

Narrative descriptions of the management, technical and business approaches used to accomplish and monitor contract tasks as well as methods the contractor will employ to provide Government surveillance, data accessibility, and/or deliverables.

Identification and assessment of risks inherent in the management, technical and business approaches.

Interfaces between the Contractor, the Government, and other contractors or entities that are necessary and pertinent to the accomplishment of tasks on this contract.

Narrative description of the Contractor's management approach to defining processes, plans, and procedures including any Government approval of any critical processes, plans and procedures.

Narrative description of Contractor's controls applicable to any tasks, activities and projects exceeding established cost or schedule plans including requirements for providing a recovery plan or cancellation.

Contractor formats are acceptable as coordinated and agreed upon by the Government.

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 002

B. Line Item Title:

Laboratories and Developmental Shops Innovations Report

C. OPR	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
NE	1	1	AN	See Block J	See Block J

J. Remarks:

The submission shall be on June 30th of each contract year or as requested by the Contracting Officer of the contract. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government.

K. Distribution

ESC COTR/Mail Code: NE-I (1D)
ESC CO/Mail Code: OP-ES-A (1A) (ID)
Technical Advisor and Strategic PLanning: NE (ID)

Totals	
No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2. Number
Report, Laboratories and Developmental Shops Innovations	1.1-002
3. Use To provide the Government with cost saving innovations that help the Kennedy Space Center transition to a "Ready to Produce" model concerning the laboratory and developmental shop operations and maintenance.	4. Date TBD 5. Organization KSC
7. Interrelationship	6. References

8. Preparation Information

The report shall be submitted annually on June 30th providing the Government with cost saving innovations pertaining to laboratory and developmental shop maintenance and operations. The Contractor shall clearly describe the innovation and the benefits gained. Examples of innovations include consolidating personnel, machinery or facilities, outsourcing the functions and completely closing the laboratory or shop. The reports need to include a cost benefit analysis, feasibility statement, risk assessment, pros and cons, and any terms and conditions.

The options will be delivered to NASA senior management for approval and then direction to the Contractor to implement will be delivered in writing by the Contracting Officer. Implementation of laboratories and developmental shops innovations will be accomplished through a contract change.

Contractor formats are acceptable as coordinated and agreed upon by the Government.

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 003

B. Line Item Title:

Advance Notification of Workforce Reductions Report

C. OPR	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
OP-AM	3	6	AR	See Block J	N/A

Remarks:

The Contractor shall notify the Government in writing at least 15 calendar days in advance of notification to employees of any planned reduction of permanent, full-time, and part-time employees that exceeds 10% of the total contract workforce or 25 employees, whichever is less. In addition, if Workforce Adjustment and Retraining Notification (WARN) Act notification is required, the Contractor shall provide in writing to the Government the information required by the WARN Act, section 639.7(c) and a listing of all organizations to be notified including those required by section 639.6(a), (c), and (d), at least five (5) days prior to issuance of the notification. The Contractor shall submit type “D”, electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government.

Distribution

ESC COTR/Mail Code: NE-I (1D)
ESC CO/Mail Code OP-ES-A (1A) (1D)
Labor Relations Officer/Mail Code: OP-AM (1D)

Totals	
No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2. Number
Report, Advance Notification of Workforce Reductions	1.1 - 003
3. Use	4. Date
To provide the Government advanced notification of workforce reductions	TBD
	5. Organization
	KSC
7. Interrelationship	6. References
	WARN Act

8. Preparation Information

The notification shall include the reason for the reduction in workforce, the number of employees impacted, their labor classifications, their physical location, and their location within contract organizational structure.

The notification shall also identify the expected date of the first separation and the anticipated schedule for making separations, as well as the name and telephone number of a company official to contact for further information.

Contractor formats are acceptable as coordinated and agreed upon by the Government.

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 004

B. Line Item Title:

Quarterly Contractor Workforce Report

C. OPR	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
OP-AM	3	6	QU/AR	See Block J	90/5

J. Remarks:

The initial submission shall be due within 5 working days of the close of the first quarter of the contract. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government. Frequency of submittal is in relation to the Government Fiscal Year

K. Distribution

ESC COTR/Mail Code: NE-I (1D)
ESC CO/ Mail Code: OP-ES-A (1A) (1D)
Labor Relations Officer/Mail Code: OP-AM (1D)
GG-C-A2 (1D)
BA-D (1D)

Totals	
No.	Type
1	A
5	D

DATA REQUIREMENT DESCRIPTION

1. Title	2. Number
Report, Quarterly Contractor Workforce	1.1 - 004
3. Use To provide the government with on-site and off-site workforce data, which is used for NASA Headquarters required workforce reports and planning of future housing requirements	4. Date TBD 5. Organization KSC
7. Interrelationship	6. References KSC Clause 52.242-93

8. Preparation Information

Two reports shall be submitted quarterly based on the following Definition of Terms and in the formats provided:

Section 1: *Quarterly Contractor Workforce Report by Sub-Contractor Name*
Section 2: *Quarterly Contractor Workforce Report by Bargaining Unit*

Definition of Terms

a) On-site– Number of contractor personnel occupying physical space at KSC. KSC includes Cape Canaveral Air Force Station (CCAFS) and Patrick Air Force Base (PAFB). It includes those personnel temporarily absent from assigned duty stations (e.g., on leave without pay, annual/sick leave, TDY).

b) Off-site- Number and corresponding ZIP Code of contractor personnel physically located outside of KSC property.

1. Dispossessed– Number of contractor personnel who would normally occupy physical space at KSC (as defined above) but who are located outside of KSC property (as defined above) due to non-availability of space.
2. Others Off-site – Number of contractor personnel who are intentionally, physically located outside of KSC property (as defined above).

c) Subcontractors – Number of subcontractor personnel occupying physical space at KSC (as defined above). Include the subcontractor name and a brief description/title of the effort.

KSC FORM 16-246 NS (REV. 02/09) PREVIOUS EDITIONS MAY BE USED

DATA REQUIREMENT (Continuation Sheet)

QUARTERLY CONTRACTOR WORKFORCE REPORT BY SUB-CONTRACTOR NAME

Contract: XXXXXX
Report for Quarter X - Period Ending XX/XX/XXXX

	ON-SITE	OFF-SITE DISPOSSESSED	OFF-SITE OTHER	TOTAL
TOTAL HEADCOUNT	***T = A + B***	***T = A + B***	***T = A + B***	***T = A + B***
CONTRACTOR HEADCOUNT	**A**	**A**	**A**	**A**
SUBCONTRACTOR HEADCOUNT	**B = C+D**	**B = C+D**	**B = C+D**	**B = C+D**
SUBTOTAL OF SUBCONTRACTORS List each subcontractor (include only those with on-site personnel)	*B*	*B*	*B*	*B*

QUARTERLY CONTRACTOR WORKFORCE REPORT BY BARGAINING UNIT

Contract: XXXXXX
Report for Quarter X - Period Ending XX/XX/XXXX

	ON-SITE	OFF-SITE	TOTAL
TOTAL HEADCOUNT	***T = A + B***	***T = A + B***	***T = A + B***
NON-UNION HEADCOUNT	**A**	**A**	**A**
UNION-REPRESENTED HEADCOUNT	**B = Sum of Below**	**B = Sum of Below**	**B = Sum of Below**
Bargaining Unit A	*C*	*C*	*C*
Bargaining Unit B	*D*	*D*	*D*
Bargaining Unit C	*E*	*E*	*E*
Bargaining Unit D	*F*	*F*	*F*
Bargaining Unit E	*G*	*G*	*G*

DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 005

B. Line Item Title:

Quarterly Summary of 3rd Step grievances and Arbitrations Report

C. OPR	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
OP-AM	3	6	QU/AR	See Block J	90/15

J. Remarks:

K.

Submission of this data requirement is only needed when there is a collective bargaining agreement (s) in place. The initial submission shall be due within 15 working days of the close of the first quarter that the agreement is in place. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government. . Frequency of submittal is in relation to the Government Fiscal Year

L. Distribution

Labor Relations Officer/ Mail Code: OP-AM (1D)
ECS CO/ Mail Code: OP-ES-A (1A) (1D)
ECS COTR/Mail Code: NE-I (1D)

Totals	
No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2. Number
Report, Quarterly Summary of 3rd Step Grievances and Arbitrations	1.1 - 005
3. Use To provide the NASA/KSC Labor Relations Officer the necessary insight into 3rd step union grievance and arbitration activity.	4. Date TBD 5. Organization KSC
7. Interrelationship	6. References

8. Preparation Information

The Report shall include the number of open 3rd step labor grievances at the beginning of the current quarter, the number of 3rd step labor grievances resolved during the quarter (without arbitration), and the number of open 3rd step labor grievances at the end of the quarter. The Report shall also include a summary paragraph of the most common grievances experienced during the quarter. The Report shall also contain a separate section reporting the number of arbitrations in which the Contractor was involved during the quarter, a brief description of each arbitration, and a summary of the arbitrator's decision.

Contractor formats are acceptable as coordinated and agreed upon by the Government.

KSC FORM 16-246 NS (REV. 02/09) PREVIOUS EDITIONS MAY BE USED

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 006

B. Line Item Title:

Work Breakdown Structure and Dictionary

C. OPR	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
NE-I	2	3	RT	At least 30 calendar days prior to contract	See Block J

J. Remarks:

The Electronic WBS and WBS Dictionary shall be made available to the Government in electronic, Web based format; and shall be updated within 10 working days of any approved changes to the WBS structure. The Contractor shall notify ESC COTR, ESC CO and KSC CFO points of contact via email, when changes are made effective.

K. Distribution

ESC COTR/Mail Code: NE-I
ESC CO/Mail Code: OP-ES-A (1A) (1D)
ESC CFO RMO/Mail Code: GG-C-A2

Totals No.	Type
1	A
1	D

DATA REQUIREMENT DESCRIPTION

1. Title	2. Number
Dictionary, Work Break Down Structure (WBS) and WBS	1.1 - 006
3. Use The Dictionary provides the Government insight into the WBS, which serves as the framework for contract planning, budgeting, cost recording and schedule reporting.	4. Date TBD 5. Organization KSC
7. Interrelationship	6. References NPD 7120.4, NPR 7120.5

8. Preparation Information

The WBS establishes a product-oriented logical subdivision of hardware, software, services, facilities, etc. that makes up the total scope of work The WBS Dictionary provides a narrative description of the tasks and effort to be performed in each WBS element.

The WBS and WBS Dictionary are two distinct project documents used for defining the approved project scope of work. The contents of each document are detailed in the following paragraphs:

a. WBS - A logical, hierarchical display of the subdivision of all project work to be completed. The WBS shall include the approved element title and element number.

b. WBS Dictionary - The WBS dictionary shall describe and document the work content of every WBS element and relevant efforts associated with each element (e.g., design, development, manufacturing). The WBS dictionary shall be arranged in the same order as the contract WBS. The WBS dictionary shall include the following for each WBS element

The Contractor shall create and maintain a WBS and WBS Dictionary that adequately describes the work content being performed within each WBS down to the lowest reportable level. The WBS dictionary shall include the following for each WBS element:

1. WBS element title,
2. WBS element code,
3. WBS element content description, (including quantities, relevant associated work, and contract end items where applicable)
4. WBS Index, and
5. PWS paragraph number
6. Specification (number and title) associated with the WBS element (if applicable).
7. Date, revision number, revision authorization and approved changes.

KSC FORM 16-246 NS (REV. 02/09) PREVIOUS EDITIONS MAY BE USED

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 007

B. Line Item Title:

Risk Management Plan

C. OPR	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
SA-G	2	2	RT	See Block J	See Block J

J. Remarks:

The Contractor shall submit a preliminary Risk Management Plan with its proposal. The final, detailed plan shall be submitted for approval to the Contracting Officer within 60 calendar days after contract start. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office products or future versions as determined by the Government. The Contractor shall also publish this DR electronically on the Contractor's Management System in a Government-accessible location and format.

K. Distribution

ESC COTR/Mail Code: NE-I(1D)
ESC CO/Mail Code: OP-ES-A (1A) (1D)
Safety and Mission Assurance/Mail Code: SA-G (1D)

Total No.	Total Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2. Number
Plan, Risk Management	1.1 - 007
3. Use To provide a comprehensive plan to manage risk associated with ESC activities.	4. Date TBD 5. Organization KSC
7. Interrelationship	6. References NPR 7120.5, NPR 7120.7, NPR 8000.4

8. Preparation Information

The Contractor shall:

1. Prepare and maintain a current Risk Management Plan that describes the processes, methods, tools, and metrics for identifying and managing risks associated with activities performed within the scope of this contract.

2. Comply with the Risk Management requirements contained in NPR 8000.4, Agency Risk Management Procedural Requirements.

3. The Risk Management Plan shall comply with the following documents:

   a. NPR 8000.4, Agency Risk Management Procedural Requirements
   b. NPR 7120.5, NASA Program and Project Management Processes and Requirements
   c. NPR 7120.7, NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements

Contractor formats are acceptable as coordinated and agreed upon by the Government.

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. ITEM NO. 008

B. LINE ITEM TITLE:
Internal Surveillance Plan

C. OPR.	D. TYPE	E. INSPECT/ ACCEPT	F. FREQ.	G. INITIAL SUB.	H. AS OF DATE
NE-I	1	3	AR	See Block J	See Block J

J. REMARKS:

The Contractor shall submit a preliminary Internal Surveillance Plan with its proposal. The final, detailed plan shall be submitted for approval to the Contracting Officer within 30 calendar days after contract start. The plan shall be maintained throughout the life of the contract. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government.

K. DISTRIBUTION

ESC COR/Mail Code: NE-1 (1A, 1D)
ESC CO/Mail Code: OP-ES-A (1A, 1D)
SA-E2 (1A)
GG-C-A2 (1A, 1D)

TOTALS	
NO.	TYPE
4	A
3	D

DATA REQUIREMENT DESCRIPTION

1. TITLE	2. NUMBER
Plan, Internal Surveillance	1.1-008
3. USE The plan describes the integrated method of internal surveillance, including proposed internal processes, controls, metrics, and procedures that the Contractor considers critical to assure safety, technical, schedule, cost control, and small business subcontracting performance.	4. DATE TBD 5. ORGANIZATION KSC
7. INTERRELATIONSHIP DR 009, (Internal Surveillance Report)	6. REFERENCES See Block 8

8. PREPARATION INFORMATION

Describe how proposed internal processes, controls, metrics, and procedures will be used to ensure efficient and effective contract execution and mission success. Describe what metrics will be collected and how metrics data will be reported to the Government, or otherwise available for Government review. Discuss the approach to surveillance and/or measurement of the significant areas of contractor performance, including but not limited to:

- Safety
  - VPP Compliance/Readiness
  - Occupational/Operational Safety
- Technical
  - Task Order Customer Satisfaction
  - Baseline Customer Satisfaction
  - Data Management
  - Property Management
  - Quality of Products/Deliverables
  - Communication Effectiveness
  - Technology Development
  - Management Effectiveness
    - Resource Management
    - Risk Management
    - Labor Relations
    - Contract Compliance
    - Continuous Improvement
    - Business Management Systems
    - Materials Management

- Equal Opportunity
- Environmental Compliance
- SAE AS 9100 Compliance
- Export Control Compliance
- IT Security Compliance

- Schedule
- Small Business Subcontracting
- Cost Control

For each contract level metric proposed define a measurable standard of performance (SOP) that reflects exemplary performance and an Acceptable Quality Level (AQL) that reflects satisfactory performance when applicable.

When standards of performance and/or acceptable quality levels cannot be defined adequately, trend metrics may also be proposed to provide insight into performance. If an area of performance is not readily quantifiable, or if the effort and/or cost of measurement cannot be justified, other more qualitative surveillance techniques may be proposed.

Describe the Contractors approach to providing and presenting an Internal Surveillance Report (Self-Assessment) of contractor performance per the PWS and DR008.

KSC FORM 16-246 NS (REV. 02/09) PREVIOUS EDITIONS MAY BE USED

DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. ITEM NO. 009

B. LINE ITEM TITLE:
Internal Surveillance Report

C. OPR.	D. TYPE	E. INSPECT/ ACCEPT	F. FREQ.	G. INITIAL SUB.	H. AS OF DATE
NE-I2	1	3	SA/AD	See Block J	See Block J

J. REMARKS:

The Internal Surveillance Report shall be submitted within 13 working days after the end of the second and fourth quarters of the government fiscal year. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government. Frequency of submittal is in relation to the Government Fiscal Year.

K. DISTRIBUTION

ESC COR/Mail Code: NE-1 (1A, 1D)
ESC CO/Mail Code: OP-ES-A (1A, 1D)
SA-E2 (1A)
GG-C-A2 (1A, 1D)

TOTALS	
NO.	TYPE
4	A
3	D

DATA REQUIREMENT DESCRIPTION

1. TITLE
Report, Internal Surveillance

2. NUMBER
1.1-009

3. USE

To report the Contractor's metrics data and self-assessment to the Government for evaluation.

4. DATE
TBD

5. ORGANIZATION
KSC

7. INTERRELATIONSHIP
DR 008, (Internal Surveillance Plan)

6. REFERENCES

8. PREPARATION INFORMATION

The report shall provide a summary of all items identified in the Internal Surveillance Plan (DR 008) and the Award Fee Evaluation Plan (Attachment J-03). The report shall be accompanied by a contract metrics report including all available metrics and trend history for the period and for the cumulative AFP, captured on a monthly basis and summarized quarterly and yearly.

KSC FORM 16-246 NS (REV. 02/09) PREVIOUS EDITIONS MAY BE USED

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC					A. Item No. 010
B. Line Item Title: Contractor Financial Management Reports, NASA Form 533M & NASA Form 533Q					
C. Opr. GG-B	D. Type 3	E. Inspect/Accept 6	F. Freq. MO	G. Initial Sub. See Block J	H. As Of Date See Block J

J. Remarks:

The NASA Form 533M report is due monthly within 10 working days of the close of the Contractor's accounting period. The NASA Form 533Q is waived except for submission of an initial NASA Form 533Q baseline report that is due 30 calendar days after contract start date identifying contract negotiated contract value by element of cost. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government.

K. Distribution

Chief Financial Office/Mail Code : GG-B (1A, 1D) and GG-C-A2 (2A,1D)
ESC COTR Business Office/Mail Code: NE-I (2A,2D)
ESC CO/Mail Code: OP-ES-A (1A,1D)

Totals	
No.	Type
6	A
5	D

DATA REQUIREMENT DESCRIPTION

1. Title	2. Number
Reports, Contractor Financial Management Analysis, NASA Forms 533M & 533Q	1.1 - 010
3. Use: Provides NASA with monthly and cumulative accumulated expenditures and projections of contract costs.	4. Date: TBD 5. Organization: KSC
7. Interrelationship	6. References: NPR 9501.2D

8. Preparation Information

1. Scope
This DR establishes the requirements for the content and format of financial and cost-related management reports. NF 533's shall report cost data for all customers of ESC.

2. Contents

a. Reporting requirements are for the NASA Form 533M and 533Q. These reports shall be prepared in accordance with instructions in NPR 9501.2D, *NASA Contractor Financial Management Reporting*.

b. The Contractor shall submit an initial report in the NF 533Q format within 30 days after authorization to proceed has been granted. The initial report shall reflect the original contract value detailed by negotiated reporting categories and shall be the original contract baseline plan. An updated NF533Q shall be submitted when authorized changes to the baseline plan occur. This plan, plus authorized changes, is subsequently used in columns 7b and 7d of the NF 533M for comparison of actual costs to plan. The NASA Contracting Officer may require additional detail, such as quarterly or semiannual phasing over the life of the contract, inclusion of unexercised options, or an initial report whenever options are exercised.

c. The Contractor's cost accounting system shall be capable of accumulating, segregating, and reporting costs by each of the categories listed below:

Category

WBS – down to the lowest level of the WBS structure
Prime Contractor
Major Sub-Contractors
Element of Cost
Fiscal Period (Month, Government Fiscal Year)
NASA Customers

d. Labor Hours and Elements of Cost Data to be reported on the 533Q and 533M reports are to be consistent with the Elements of Cost listed in Attachment 1. The Table of Contents for required NF 533M views and supplemental reports is shown in Attachment 2.

e. Due dates reflect the date that the 533M and 533Q reports are to be received by personnel on the distribution list, not the date the reports are generated or mailed by the Contractor.

f. Uncompensated overtime hours worked should be reported on NF 533M reports as a separate line item per attached Format C.

g. Monthly NF 533M reporting shall begin no later than 30 days after the incurrence of costs.

h. Amounts shall be stated to the nearest whole dollar, and productive hours to the nearest whole number.

i. At contract award and annually thereafter, the Contractor shall furnish an accounting calendar based on a quarterly reporting cycle of 4/4/5 week months and included in the initial submission of the annual operating plan. This cycle shall start on October 1, and end on September 30 of each fiscal year. The Contractor's accounting calendar shall also identify the number of work hours and non-productive hours in each month of the fiscal year.

j. For any indirect rates (such as fringe benefits, overheads, G&A, etc.), charged to the contract, the Contractor shall identify in the narrative of the 533M, the provisional billing rates, ceiling rates, and cumulative actual applied rates for the contract period, and any changes to these rates from current operating plan rates (Format L).

k. The Contractor shall deliver on an annual basis (each October 1) an Element of Cost Dictionary describing the content of each element of cost. Notification and distribution to KSC CFO via email is preferred.

l. The contractor shall provide cumulative variance analysis by task order and baseline PWS 1.4 – 1.7, 10 business days following the submittal of the 533M. The variance threshold for labor hours are +/- 250 hours or +/- 5%; variance threshold for labor costs are +/- $7,500 or +/- 5%; variance threshold for ODC costs are +/- $7,500 or +/- 5%.

m. The contractor shall provide a Work For Others credit sheet (Format S) in any month were a credit is being provided to the Government. In addition, a Work For Others credit log (Format T) will capture a cumulative history of all Work For Others credits which are provided to the Government through the life of the contract. In order to capture accurate Government fiscal year costs a Work For Others credit must be submitted at the end of every Government fiscal year to account for estimated work completed in that fiscal year even if the project is not complete.

Contractor formats are acceptable as coordinated and agreed upon by the Government.

Cost Elements	Definitions
Regular Labor	Reported to NASA as hours are incurred for both prime and major subcontractors. Includes full time and part time employees' time, not to exceed 40 hours per week.
Overtime Labor	Reported to NASA as hours are incurred both prime and major subcontractors. Includes full time, part time and temporary employees' time, exceeding 40 hours per week.
Premium Labor	Amount paid for cost associated with labor shift premiums. Includes both prime and major subcontractors.
Equipment	Generally reported to NASA when received and accepted by the contractor. Cost is greater than $5,000 per item.
Depreciation	Includes all depreciation cost associated with the capitalization of contractor property.
Leases	Reported to NASA using a proration over the life of the lease and includes capital and non-capital equipment. Examples are heavy equipment, machinery, cranes, and laboratory.
Training	Related costs are registration fees, airfare, lodging, transportation, meals, auto rental, mileage, certifications, and licenses.
Misc Other Direct Costs	Includes other charges such as contract labor obtained though an outside agency, freight, postage, dues, memberships, subscriptions, courier services.
Travel	Examples are airfare, lodging, transportation, auto rental, meals, moving expenses and other incidentals associated with specific travel or permanent relocation requirements. Reported to NASA as costs are incurred.
Subcontracts	Actual and estimated costs reported by prime contractors shall include subcontractors' incurred costs for the same accounting period. The prime contractor shall include in the total cost of each subdivision of work the accrued cost (including fee, if any) of related subcontractor effort. Subcontractors should, therefore, be required to report cost to the prime contractor, using the accrual method of accounting. If the G&A and fee reported by a subcontractor are at the total subcontractor level, these costs must be allocated to specific sub- divisions of work. Data submitted by the subcontractor should be structured similar to the prime contractor's NF533M to enable the prime contractor to properly report to NASA. For subcontracts with a contract value of $1,000,000 or more, the prime contractor is required to uniquely identify the sub-contractor costs reported, the WYEs associated with the sub-contracts, and provide this information to the Government.
Materials & Supplies	Examples are supplies such as office supplies, toner cartridges, binders, lumber, electrical, plumbing, paint supplies. Cost is less than $5000 per item.
Leased Vehicle Cost	Cost associated with GSA, commercial vehicles, autos, trucks, vans, tankers, other and includes lease costs, mileage, fuel and maintenance.
Fee	Should be accrued as earned using a consistent and auditable method to determine the amount. For example: an acceptable method would be to use historical data to determine the amount to accrue each month. Fee should be reported on the NF533M following the "Total Cost" line. Award fee must be reported by the following categories: Fee Earned, Provisional Fee, and Total Fee. If any of the above fee categories do not pertain, they should not be included in the NF533M.

Applicable Terms

Recovery Plan	For those cases where cost incurred exceeds the planned amount, the contractor shall propose operating plan content tradeoffs or identify other proposed actions to stay within the approved operating plan.
Contract Value	The original contract value baseline amount plus definitized changes. Includes fee.
Negotiated Estimated Costs	Includes the estimated cost baseline amount plus definitized changes, and authorized adjustments to the baseline that have not been definitized. Does not include fee.
Direct Costs	Elements of cost associated with providing a service which can be identified to a benefiting customer.

Attachment 1

ELEMENTS OF COST

XXXXX	OVERHEAD
XXXXX	GENERAL & ADMINISTRATIVE (G&A)
XXXXX	AWARD FEE
XXXXX	CONTRACT LABOR – REGULAR PAY
XXXXX	CONTRACT LABOR – OVERTIME
XXXXX	CONTRACT LABOR – PREMIUM PAY
XXXXX	TEMPORARY DUTY PER DIEM/TRAVEL/ RELOCATION
XXXXX	LEASED VEHICLE COSTS
XXXXX	OPERATING LEASE COSTS/EQUIPMENT RENTAL
XXXXX	DEPRECIATION EXPENSE
XXXXX	SUB-CONTRACTS COSTS
XXXXX	TRAINING COSTS
XXXXX	MISCELLANEOUS CHARGES NOT IN OTHER EEICS
XXXXX	MATERIALS & SUPPLIES EXPENSES
XXXXX	EQUIPMENT PURCHASE EXPENSES
XXXXX	SHARED COST POOLS

Attachment 2

533 (M&Q) Reporting Table of Contents

A. Cover Letter (Signed)
B. Cover
C. Inception to Date Total Contract Summary by element of cost
D. Prior Year Summary by Year by element of cost
E. Current Year Summary by element of cost
F. Current Year Summary by Agency by element of cost
G. Current Year Summary by NASA Customer by element of cost
H. Current Year Summary for each NASA Customer by 1st Level WBS by element of cost
I. Current Year Summary by Reporting Category Total Cost
J. Indirect Cost Summary
K. Cost Pools and/or Cost Allocation Summary
L. Task Order Summary by Appropriation, Number and Nomenclature to include (a) Program Summaries (b) Task Order Detail Summaries (c) Closed Task Order List (d) Summary of Closed Task Orders (format TBD)
M. Task Order Numbers and Titles Lookup List (format TBD)

<u>Supplement to 533M Report</u>

N. Narrative (sample format attached)
O. Reconciliation of Changes (sample format attached)
P. Rate Reconciliation (sample format attached)
Q. Accounting Calendar (sample format attached)
R. Estimate at Completion (sample format attached)
S. Prompt Payment Discounts (format TBD)
T. Unfilled Orders (format TBD)
U. Termination Liability (format TBD)
V. Overtime Rates (format TBD)
W. Equivalent Direct Headcount (format TBD)
X. Equivalent Indirect Headcount (format TBD)
Y. Equivalent Subcontractor Headcount (format TBD)
Z. Equivalent Total Headcount (format TBD)
AA. Contract Total Physical (Actual) Headcount (format TBD)

NF533Q Format

QUARTERLY FINANCIAL MANAGEMENT REPORT
SUMMARY: CONTRACT PERIOD TO DATE

2. REPORT FOR QUARTER BEGINNING

TO:
NASA KSC
ATTN: CONTRACTING OFFICER

FROM:
CONTRACTOR X

3. CONTRACT VALUE

a. COST	b. FEE
xxxxxxxxxxx	xxxxxxxxx

1. DESCRIPTION OF CONTRACT

a. TYPE

b. CONTRACT NO. AND LATEST DEFINITIZED AMENDMENT NO.
NNK x-xxxxx **Mod xxxxx/xx/200X**

4. FUND LIMITATION
xxxxxxxxxx

c. SCOPE OF WORK
NAME OF CONTRACT

d. AUTH. CONTR. REP (Signature) DATE
PROGRAM MANAGER

5. BILLING

a. INVOICE AMOUNTS BILLED (CRNI)	b. TTL PYTS REC'D
CR Only xxxxxxxxxxx	xxxxxxxxxxxx
Invoice #xx (thru xx/xx/xx)	**Invoice #xx**

6. REPORTING CATEGORY	7. COST INCURRED/HOURS WORKED			8. ESTIMATED COST/HOURS TO COMPLETE										9. ESTIMATED FINAL COST/HOURS		
	CUM ACTUAL THRU PRIOR MONTH (a)	CURRENT MONTH ESTIMATE (b)	CUM ESTIMATE TO DATE (c)	MONTH (CONTRACT) (a)	MONTH ESTIMATE (b)	MONTH (c)	QUARTER (d)	QUARTER (e)	QUARTER (f)	BALANCE OF FY __ (g)	NEXT FY __ (h)	BALANCE OF CONTRACT (i)	TOTAL TO COMPLETE (j)	CONTRACT EAC (a)	CONTRACT VALUE (b)	EST'D COMPLETION DATE
TOTAL STRAIGHT TIME HOURS																
TOTAL OVERTIME HOURS																
Voluntary OT hours																
TOTAL HOURS																
WORK YEAR EQUIV (WYEs)																
DIRECT STRAIGHT TIME HOURS																
DIRECT OVERTIME HOURS																
DIRECT TOTAL																
LABOR COST																
Straight Time																
Overtime																
SUBC ST HOURS																
SUBC OT HOURS																
PAID LEAVE HOURS																
TOTAL OTHER HOURS																
SUBCONTRACTS COST																
OTHER DIRECT COST																
Material																
Subcontracts (Minor)																
Other Direct																
xxxxxx																
xxxxxx																
xxxxxx																
xxxxxx																
OVERHEAD																
Overhead																
Fringe																
TOTAL DIRECT COST																
G&A xx%																
SUBTOTAL COST																
FEE xx%																
SUBTOTAL COST																
Phase In																
CONTRACT TOTAL																

Use for Formats C through I

533M - TOTAL PROGRAM SUMMARY	MONTHLY FINANCIAL MANAGEMENT REPORT SUMMARY: CONTRACT PERIOD x/xx-x/xx	2. REPORT FOR MONTH ENDING AND NUMBER OF OPERATING DAYS **xx-xx** **Close Date: xx/xx/xx** xx OPD	
TO: **NASA KSC** **ATTN: CONTRACTING OFFICER**	FROM: **CONTRACTOR X**	3. CONTRACT VALUE **a. COST** **xxxxxxxxxxx**	**b. FEE** **xxxxxxxxx**
1. DESCRIPTION OF CONTRACT — a. TYPE	b. CONTRACT NO. AND LATEST DEFINITIZED AMENDMENT NO. **NAS x-xxxxx** **Mod xxx** **xx/xx/200X**	4. FUND LIMITATION **xxxxxxxxxx**	
c. SCOPE OF WORK **NAME OF CONTRACT**	d. AUTH. CONTR. REP (Signature) DATE **PROGRAM MANAGER**	5. BILLING a. INVOICE AMOUNTS BILLED (CRNI) **CR Only** **xxxxxxxxxxx** **Invoice #xx (thru xx/xx/xx)**	b. TTL PYTS REC'D **xxxxxxxxxxxx** **Invoice #xx**

6. HOURS/COST ELEMENT	7. BASELINE ACTUAL / PLAN COST/HOURS					8. ESTIMATED COST/HOURS				9. ESTIMATED FINAL COST/HOURS		
	MONTHLY ACTUAL (a)	MONTHLY PLANNED (b)	CUMULATIVE ACTUAL (FY) (c)	CUMULATIVE PLANNED (FY) (d)	CUMULATIVE ACTUAL (LIFE TO DATE) (e)	Next Mo. ESTIMATE (a)	2 Mo. Out ESTIMATE (b)	FY EAC (SEP xx) (c)	BALANCE OF CONTRACT (d)	CONTRACT EAC (a)	CONTRACT VALUE (b)	EAC Delta (c)
# Oper Days >	xx	xx				xx	xx					
TOTAL STRAIGHT TIME HOURS												
TOTAL OVERTIME HOURS												
Voluntary OT hours												
TOTAL HOURS												
WORK YEAR EQUIV (WYEs)												
DIRECT STRAIGHT TIME HOURS												
DIRECT OVERTIME HOURS												
DIRECT TOTAL												
LABOR COST												
Straight Time												
Overtime												
SUBC ST HOURS												
SUBC OT HOURS												
PAID LEAVE HOURS												
TOTAL OTHER HOURS												
SUBCONTRACTS COST												
OTHER DIRECT COST												
Material												
Subcontracts (Minor)												
Other Direct												
xxxxxx												
xxxxxx												
xxxxxx												
xxxxxx												
OVERHEAD												
Overhead												
Fringe												
TOTAL DIRECT COST												
G&A **xx%**												
SUBTOTAL COST												
FEE **xx%**												
SUBTOTAL COST												
Phase In												
CONTRACT TOTAL												

Format N: NARRATIVE

This is an opportunity to provide a narrative discussion to the Government on contract status and performance.

Disclosures;
Accomplishments;
Any ground rules/clarifications;
Accounting period schedule for the next 12 months;
Definitions/generic calculations for each element of cost used in 533 (ex. hours, ODCs, O/H, G&A, etc.);
Methodology for estimates;
Prior period adjustments made during current period;
Noteworthy management decisions that occurred during the reporting period to make the Government aware of actions that will affect technical or financial performance.

Examples – Analytical remarks on items materially affecting historical or projected costs; identify present causes of problems and their effects on cost and schedule, along with corrective actions; effects of technical problems, changes, or deficiencies regarding current performance and projected resource requirements.

Format O: Reconciliation of Changes

(a)	Original Contract Value		$XXXXXXXX
(b)	Options Exercised		$XXXXXXXX
(c)	Other Supplemental Agreements		$XXXXXXXX
(a+b+c)=(d)	Present Contract Value thru Mod XXX		$XXXXXXXX
(e)	Authorized Undefinitized Changes	+/-	$XXXXXXXX
(f)	Anticipated future overrun/underrun	+/-	$XXXXXXXX
(d+e+f)	Contractor Estimate		$XXXXXXXX

Format P: Rate Reconcilliation								
Element of Cost	Provisional Billing Rate (If App.)	Pct. Variance Provisonal Billing to Actual Rate	Cum Actual Rate	Pct. Variance to Actual Ceiling Rate	Ceiling Rate FYXXXX (If App.)	Pct. Variance to actual Rate	Pct. Variance to Ceiling Rate	Op. Plan Rate XXXX
WBS Internally Developed Rates	%		%		%	%		%
Labor Fringe	%		%		%	%		%
Overhead	%		%		%	%		%
G&A	%		%		%	%		%
Variance		%		%		%	%	

Format Q: Accounting Calendar						
	WEEKS	Month End Date	DAYS	TOTAL HOURS	NON-PRODUCTIVE HOURS	PRODUCTIVE HOURS
OCT	4		xx	xxx	xx.x	xxx.x
NOV	4		xx	xxx	xx.x	xxx.x
DEC	5		xx	xxx	xx.x	xxx.x
JAN	4		xx	xxx	xx.x	xxx.x
FEB	4		xx	xxx	xx.x	xxx.x
MAR	5		xx	xxx	xx.x	xxx.x
APR	4		xx	xxx	xx.x	xxx.x
MAY	4		xx	xxx	xx.x	xxx.x
JUN	5		xx	xxx	xx.x	xxx.x
JUL	4		xx	xxx	xx.x	xxx.x
AUG	4		xx	xxx	xx.x	xxx.x
SEP	5		xx	xxx	xx.x	xxx.x
			xxx	xxxx	xxxx	xxxx.x

- **Format R: Estimate at Completion**

This report shall be provided on the following schedule and as/of dates:

15 July	as of 30 June
15 Aug	as of 31 July
15 Sep	as of 31 Aug

Format of the report will be as partnered with the Government. Minimum content shall be as follows:

View 1	**WBS**	**CUSTOMER**	**OPERATING PLAN**	**ACTUAL COSTS YTD**	**EST COST TO 30 SEP**
View 2	**CUSTOMER**	**WBS**	**OPERATING PLAN**	**ACTUAL COSTS YTD**	**EST COST TO 30 SEP**

Shall include descriptions of how we AC's were developed, and a list of key assumptions made in developing the EAC.

Monthly 533 Work For Others Credits Log – GFY 2012

533 Reporting Period: January Actual _ February Forecast

WFO Title or Tracking #	Status (On-going or Complete)	Period of the credit	Amount	CMO Portion	GFE, Consumables, Facilities Portion
ABC Inc.	On-Going	3/1/2011 - 9/30/2011	$500.00	$400.00	$100.0

NASA Credit(s): CMO Portion

533 FS & NASA WBS	Act Cost	ITD Cost
0000113 O CTC 432938.11.01.06.70.71	405,529	1,940,236
Credit	-400	-400
Cost Applied on 533	405,029	1,939,736

NASA Credit(s): GFE, Consumables, Facilities, Etc

533 FS & NASA WBS	Act Cost	ITD Cost
0000108 O ISS-R 904211.04.05.20.07	27,134	108,823
Credit	-100	-100
Cost Applied on 533	27,034	108,723

Monthly 533 Work For Others Credits Log – GFY 2012

				CMO Portion			Government Furnished Equipment			Consumables			Facilities		
WFO Title or Tracking #	POP	Date(s) Credit(s) were applied to 533	Total Amount	CMO Portion	533 Fund Source	NASA WBS	Government Furnished Equipment	533 Fund Source	NASA WBS	Consumables	533 Fund Source	NASA WBS	Facilities	533 Fund Source	NASA WBS
ABC Inc.	3/1/2011-2/29/2012	3/1/2011 - 9/30/2011	$500.00	$400.00	0000113	432938.11.01.06.70.71	$0.00	N/A	N/A	$100.00	0000108	904211.04.05.20.07	$0.00	N/A	N/A

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 011

B. Line Item Title:

e533 Flat File

C. OPR	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
GG-B-A2	3	6	MO	See Block J	See Block J

J. Remarks:

The e533 Flat File is due monthly within 10 working days of the close of the Contractor's accounting period. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government.

K. Distribution

Chief Financial Office/Mail Code: GG-B (1D) and GG-C-A2 (1D)
ESC CO/Mail Code: OP-ES-A (1A) (1D)

Totals	
No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2.Number
Flat File, e533	1.1- 011

3. Use	4. Date
Provides NASA with monthly and cumulative accumulated expenditures and projections of contract costs.	TBD
	5. Organization
	KSC

7. Interrelationship	6. References
	NPR 9501.2D

8. Preparation Information

The Contractor shall provide the e533 Flat File that contains detail information for each Reporting Category (RC). A RC correlates to a task order, delivery order, or Work Breakdown Structure (WBS), and is the level at which cost is reported. Each RC can have Sub-Reporting Category line items (detailed cost elements) that add up to a RC. The Contractor shall coordinate with the NASA Resource Analyst assigned to the Contract in order to establish and maintain the RC that the Contractor shall use to comply with this data requirement. The chart below describes the data elements that shall be included in this section of the flat file (see attached Exhibit A, Agency Defined File Format for specific layout details).

(Continued on next page)

Data Element Name	Description
Reporting Category (RC)	Task, Delivery Order, Work Breakdown Structure
Cost Incurred for Month (7a)	Prior month actual cost incurred for each RC (column 7a on NF533M)
HR/WYE Incurred for Month (7a)	Prior month actual HR/WYE incurred for each RC (column 7a on NF533M)
Contract prior month planned cost (7b)	Planned cost for prior month for each RC (column 7b on NF533M)
Contract ITD cost (7c)	Contract ITD cost for each RC (column 7c on NF533M)
Contract planned ITD cost (7d)	Contract planned ITD cost for each RC (column 7d on NF533M)
Current month estimated cost (8a)	Cost estimate for the current month for each RC (column 8a on NF533M)
Current month estimated HR/WYE (8a)	HR/WYE estimate for the current month for each RC (column 8a on NF533M)
Next month estimated cost (8b)	Estimated cost for next month for each RC (column 8b on NF533M)
Balance of Contract	Balance of contract for the remaining estimate to complete for each RC (column 8c on NF533M)
Contractor Estimate	Contractor estimate for the total estimate to complete entire scope of contract for each RC (column 9a on NF533M)
Contract Value	Contract value based upon contract modifications for each RC (column 9c on NF533M)
Unfilled orders outstanding	Unfilled orders outstanding at the end of the reporting period for each RC (column 10 on NF533M)
Reporting Category level	Used by NASA's accounting system to determine the RC level
Reporting Category Identifier	Identifies if the RC is a actual Reporting Category or a Sub-Reporting

The e533Flat File (see Exhibit A below) shall be saved as a text file with no extension (do not include .txt after the file name) and named in strict accordance with the specific format described in the attached Agency Defined File Format document.

A) EXAMPLE FLAT FILE FOR DISTRIBUTION

File names must be provided in a specific format. Each file name will begin with the SAP 2 Character center abbreviation listed below. The contract number and date will be included in the file name as well. Below is a sample:

MACFPS001NAS00-0001_yyyymmdd

SAP 2 Charter Center Abbreviations

Headquarters	HQ	Dryden	DR
Marshall	MA	Goddard	GO
Ames	AM	Stennis	ST
Glenn	GL	Johnson	JO
Langley	LA	Kennedy	KE

Agency Defined File Format

Header (Non-Repeating Segment)

CCR Extension Data Element	Description	Contractor Initial Data Mapping	NF 533 Required! Optional	OTHER CCR Required! Optional	Field Name	St Pos	End Pos	Length	Format
HEADER:									
Record Type	Used by eGate to determine record type	'HD' for Header	Required	Required	RECORDTYPE	1	2	2	CHAR
Contract Number	Contract Number (1 b)	Header field—submitted with CONTRACTOR data or defaulted by interface or extension	Required	Required	CONTRACTNUMBER	3	12	10	CHAR

	Latest definitive Modification Number(CR81 97)				MODNUMBER	31	18	6	CHAR
Accrual Date	Date the data was generated for. Used by SAP as part of Oracle table key	Accrual Date. MM01YYYY, where MM is the Accrual Month and YYYY is the fiscal year	Required	Required	ACCRUALDATE	91	26	8	DATE MM01YYYY
Report Period End Date	Report Period End Date is a date(2)	Header field—submitted with CONTRACTOR data or defaulted by interface or extension	Required	Required	REPENDDATE	27	34	8	DATE
Operating Days	Operating days(2).	Header field—submitted with CONTRACTOR data	Required	Optional unless Required by contract	OPERDAYS	53	40	6	NUMERIC
Date Received	Date Received (1d)	System Date upon which the cost data is loaded into the CCR Extension	Required	Required	DATEREC		48	8	DATE
CCR Format	'M' for Monthly and 'Q' for Quarterly (SIR2047)	Submitted with CONTRACTOR data	Required	Required	CCRFORMAT	49	49	1	CHAR
Cost Unit of Measure	Cost Unit of Measure (SIR2047)	Submitted with CONTRACTOR data	Required	Required	COSTUOM	05	51	2	CHAR
HR/WYE Unit of Measure	Hour/Work-Year-Equivalent Unit of Measure (SIR2047)	Submitted with CONTRACTOR data	Required	Required	HRWYEUOM	25	53	2	CHAR
	Authorized Contractor Representative – Name of Contractor Approving Officer (CR 8197)				AUTHSIGNATURE	45	78	25	CHAR
	Authorized Contractor Representative				AUTHSIGNATUREDATE	97	86	8	DATE MMDDYYYY

	Date Signed – Date CCR is approved/signed by authorized contractor representative(CR 8197)								
Grand Total Cost Incurred Month (7a)	The Grand Total Contract Prior Month Actual Dollars Column 7a reports actual costs for the prior month.	Submitted with CONTRACTOR data	Required.	Optional. Only required if lower detailed line item data is submitted in monthly batch file.	GTCOSTINCURMONTH	87	99	13	CURRENCY(2)
Grand Total HR/WYE (7a)	The Grand Total Contract Prior Month Actual Hours Column 7a reports actual HR or WYE for the prior month.	Submitted with CONTRACTOR data	Required if detailed line item data is submitted in monthly batch file.	Required if detailed line item data is submitted in monthly batch file.	GTHRWYEPRIORMONTH	001	109	10	NUMERIC(1)
	The Grand Total Contract Prior Month Planned Dollars Column (7b) reports planned costs for the prior month. (CR8197)				GTCOSTPLANNEDMONTH	011	122	13	CURRENCY (2)
Grand Total Cost Incurred ITD (7c)	The Grand Total Contract Cost Dollars Column 7c which represents Contract Cost Inception to Date	Submitted with CONTRACTOR data	Required. Does not require detailed line item data if provided from Cost Incurred Month (7a)	Required if detailed line item data is provided for this column	GTITDCOST	23	135	13	CURRENCY (2)
	Grand Total Contract Planned Cost Dollars Column (7d) which represents Planned Contract				GTCOSTPLANNEDITD	36	148	13	CURRENCY (2)

	Cost Inception to Date(CR 8197)								
Grand Total Estimated Cost (8a)	The Grand Total Contract Estimated Cost for first upcoming month, or Current Month Estimate for cost.	Submitted with CONTRACTOR data	Required	Required if detailed line item data is provided for this column	GTESTCOST	491	161	13	CURRENCY (2)
Grand Total HR/WYE (8a)	The Grand Total Contract Estimated Hours for first upcoming month, or Current Month Estimate for HR/WYE.	Submitted with CONTRACTOR data	Required if detailed line item data is provided for this column	Required if detailed line item data is provided for this column	GTHRWYEFIRSTMONTH	62	171	10	NUMERIC (1)
Grand Total Next Month Estimated Cost (8b)	The Grand Total Contract Estimated Cost for second upcoming month or Next Month Estimate for cost.	Submitted with CONTRACTOR data	Required if detailed line item data is provided for this column	Required if detailed line item data is provided for this column	GTNEXTMONTHEST	27	184	13	CURRENCY (2)
	Grand Total Balance of Contract for the remaining estimate to complete (CR 8197)				GTBALANCECONTRACT	851	197	13	CURRENCY (2)
	Grand Total Contractor Estimate for the total estimate to complete entire scope of contract (CR 8197)				GTBALANCECONTRACTORESTIMATE	981	210	13	CURRENCY (2)
	Grand Total Contract Value based upon Contract Modifications (CR 8197)				GTCONTRACTVALUE	211	223	13	CURRENCY (2)
	Grand Total Unfilled Orders Outstanding at end of reporting period (CR 8197)				STUNFILLED ORDERS	42	236	13	CURRENCY (2)

Example File Format
Sub-Reporting Category Line Items – Repeating Segment

Field Name	Start Pos	End Pos	Length	Format	Variable Repetition (?,*,+,n-n)	Description
SUB RECORD TYPE	1	2	2	CHAR		'SM' for Monthly column 7a Detail; 'SQ' for ITD column Detail
SUB REP CAT	3	26	24	CHAR		Reporting Category
SUB COST INCUR MONTH	27	39	13	CURRENCY (2)		Prior month incurred costs (Actuals) for given category.
SUB HRWYE INCUR MONTH	40	49	10	NUMERIC (1)		Prior month incurred hours worked (Actuals) for given category.
SUB COST PLANNED MONTH	50	62	13	CURRENCY (2)		Contract Prior Month Planned Dollars Column **(7b)** reports planned costs for the prior month.
SUB CUR COST INCUR ITD	63	75	13	CURRENCY (2)		Contract Cost Dollars Column **(7c)** which represents Contract Cost Inception to Date.
SUB COST PLANNED ITD	76	88	13	CURRENCY (2)		Contract Planned Cost Dollars Column **(7d)** which represents Planned Contract Cost Inception to Date.
SUB CUR MONTH EC	89	101	13	CURRENCY (2)		Estimated costs for first upcoming month for given category **(8a)**.
SUB HRWYE CURMONTH EST	102	111	10	NUMERIC (1)		Estimated hours for first upcoming month for given category. Will only be needed if labor hours are required to be submitted electronically per contract **(8a).**
SUB NEXT MONTH EC	112	124	13	CURRENCY (2)		Estimated costs for second upcoming month for given category **(8b)**.
SUB BALANCE CONTRACT	125	137	13	CURRENCY (2)		Balance of Contract for the remaining estimate to complete **(8c)**.
SUB CONTRACTOR ESTIMATE	138	150	13	CURRENCY (2)		Contractor Estimate for the total estimate to complete entire scope of contract **(9a)**.
SUB CONTRACT VALUE	151	163	13	CURRENCY (2)		Contract Value based upon Contract Modifications **(9b)**.
SUB UNFILLED ORDERS	164	176	13	CURRENCY (2)		Unfilled Orders Outstanding at end of reporting period.
REPORTING LEVEL	177	206	30	CHAR		Used by SAP to determine Reporting Category Level (1.1.2.2.1) **(CR 8197).**
REPORTINGCATINDICATOR	207	207	1	CHAR		Fill in an "X" if record is a Reporting Category. Otherwise, leave Blank for Sub-Reporting Category Line Items and Element of Cost detail records. This field is used by SAP to determine if the record is a Reporting Category. **(CR 8197)**

Example File Format
533M Agency FILE RECORD LAYOUT (Element of Cost Detail – Repeating Segment (CR8197))

Field Name	Start Pos	End Pos	Length	Format	Variable Repetition (?,*,+,n-n)	Description
RECORDTYPE	1	2	2	CHAR		'**EM**' for Monthly column 7a Detail; '**EQ**' for ITD column Detail
EOC REP CAT	3	26	24	CHAR		Reporting Category
EOC COST INCUR MONTH	27	39	13	CURRENCY (2)		Prior month incurred costs (Actuals) for given category.
EOC HRWYE INCUR MONTH	40	49	10	NUMERIC (1)		Prior month incurred hours worked (Actuals) for given category.
EOC COST PLANNED MONTH	50	62	13	CURRENCY (2)		Contract Prior Month Planned Dollars Column **(7b)** reports planned costs for the prior month.
EOC CUR COST INCUR ITD	63	75	13	CURRENCY (2)		Contract Cost Dollars Column **(7c)** which represents Contract Cost Inception to Date.
EOC COST PLANNED ITD	76	88	13	CURRENCY (2)		Contract Planned Cost Dollars Column **(7d)** which represents Planned Contract Cost Inception to Date.
EOC CUR MONTH EC	89	101	13	CURRENCY (2)		Estimated costs for first upcoming month for given category **(8a)**.
EOC HRWYE CUR MONTH EST	102	111	10	NUMERIC (1)		Estimated hours for first upcoming month for given category. Will only be needed if labor hours are required to be submitted electronically per contract **(8a).**
EOC NEXT MONTH EC	112	124	13	CURRENCY (2)		Estimated costs for second upcoming month for given category **(8b)**.
EOC BALANCE CONTRACT	125	137	13	CURRENCY (2)		Balance of Contract for the remaining estimate to complete **(8c)**.
EOC CONTRACTOR ESTIMATE	138	150	13	CURRENCY (2)		Contractor Estimate for the total estimate to complete entire scope of contract **(9a)**.
EOC CONTRACT VALUE	151	163	13	CURRENCY (2)		Contract Value based upon Contract Modifications **(9b)**.
EOC UNFILLED ORDERS	164	176	13	CURRENCY (2)		Unfilled Orders Outstanding at end of reporting period.
REPORTING LEVEL	177	206	30	CHAR		Used by SAP to determine Reporting Category Level (1.1.2.2.1) **(CR 8197).**
REPORTING CAT INDICATOR	207	207	1	CHAR		Fill in an "X" if record is a Reporting Category. Otherwise, leave Blank for Sub-Reporting Category Line Items and Element of Cost detail records. This field is used by SAP to determine if the record is a Reporting Category. **(CR 8197)**

Example File Format

Trailer (provides the number of header & detail records sent from the contractor/vendor/center in order to verify the receipt of complete data after transmission)

CCR Extension Data Element	Description	Contractor Initial Data Mapping	NF 533M Required/Optional	OTHER CCR Required/Optional	Field Name	Start Pos	End Pos	Length	Format
TRAILER:									
Record Type	Used by eGate to determine record type	"TL" for Trailer	Required	Required	RECORDTYPE	1	2	2	CHAR
Record Count	Count of the number of Detail records sent to process (Detail Only)	Trailer field submitted with CONTRACTOR data	Required	Required	RECORDCOUNT	3	9	7	NUMERIC
	Value of spaces				FILLER	10	207	198	CHAR

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 012

B. Line Item Title:

Annual Phased Contract Baseline Operating Plan

C. Opr.	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
GG-C-A2	2	2	SA, UR	Within 30 calendar days of contract start date	See Block J

J. Remarks:

Annual Phased Baseline Contract Operating Plan is due no later than the last working day of August, with a mid-year update. The Contractor shall submit type "D", electronic copies, in Microsoft Office 2007 products (Excel for data) or future versions as determined by the Government, and the data shall also be available in the contractor's network accessible reporting tool.

K. Distribution

ESC COTR/Mail Code: NE-I (1A) (1D)
ESC CO/Mail Code: OP-ES-A (1A) (1D)
Chief Financial Office/Mail Code: GG-C-A2 (1A) (1D)

Totals	
No.	Type
3	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2.Number
Annual Phased Contract Baseline Operating Plan	012

3. Use	4. Date
This report will be used by the Government to ensure that planned contract effort is consistent with Agency and Programmatic requirements, and with planned level of funding. It may also be used as a basis for contract changes and for award fee evaluations.	TBD
	5. Organization: KSC

7. Interrelationship	6. References

8. Preparation Information

The Contractor shall develop an Annual Phased Contract Baseline Operating Plan categorized by month, Government Fiscal Year, contract PWS (1.4 through 1.7), lab, Prime and individual teammates (major and minor subcontractors), and elements of cost specified in format a (labor, labor cost, Other Direct Costs (ODC), and award fee). These reports shall be summarized at the total level by Government Fiscal Year, and Elements of Cost.

The Annual Phased Contract Baseline Operating Plan shall identify the current contract value (less fee) and the planned contract effort for Baseline PWS elements 1.4 through 1.7.

The Government may require several views of this data, and may require updates to the Annual Phased Contract Baseline Operating Plan during the operating year. The Annual Phased Contract Baseline Operating Plan shall detail operating plan assumptions, bases of estimate used to develop the plan, and other information considered in developing the plan.

Contractor formats are acceptable as coordinated and agreed upon by the Government. A sample data format is provided.

Format a: Example Annual Phased Contract Baseline Operating Plan

ANNUAL PHASED CONTRACT BASELINE OPERATING PLAN

By PWS, Lab and Element of Cost ($K)

Reporting Category:PWS 1.X
Lab 1

	Oct 2011	Nov 2011	Dec 2011	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	FY12 Total
PRIME LABOR DOLLARS													
xxxx S/T Labor - Prime													
xxxx O/T Labor - Prime													
Subtotal Prime Labor													
PRIME LABOR HOURS													
xxxx S/T Labor - Prime													
xxxx O/T Labor - Prime													
Subtotal Prime Hours													
PRIME LABOR WYE's													
xxxx S/T Labor - Prime													
xxxx O/T Labor - Prime													
Subtotal Prime WYE's													
Teammate LABOR DOLLARS													
xxxx S/T Labor - Sub													
xxxx O/T Labor - Sub													
Subtotal Teammate Labor													
Teammate LABOR HOURS													
xxxx S/T Labor - Sub													
xxxx O/T Labor - Sub													
Subtotal Teammate Hours													
Teammate LABOR WYE's													
xxxx S/T Labor - Sub													
xxxx O/T Labor - Sub													
Subtotal Teammate WYE's													
TOTAL BASELINE WYE's													
xxxx Contract S/T Labor													
xxxx Contract O/T Labor													
Subtotal Baseline WYE's													
LABOR SUBTOTAL													
NON LABOR DOLLARS													
xxxx Travel/TDY/Misc Exp													
xxxx Subcontracts													
xxxx Training													
xxxx Misc ODC													
xxxx Indirect													
xxxx Lease Vehicle													
xxxx Operating Leases													
xxxx Depreciation													
xxxx Equipment													
xxxx Mat'ls & Supplies													
xxxx Oth Misc Charges													
Non-Labor Subtotal													
Total Direct Cost													
xxxx Overhead													
Total Cost													
xxxx G&A													
Subtotal Before Fee													
xxxx Fee													
Total xxxx													

DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC					A. Item No. 013
B. Line Item Title: Rate-Volume Variance Analysis Report					
C. Opr. GG-C-A2	D. Type 3	E. Inspect/Accept 6	F. Freq. MO	G. Initial Sub. Close of Contractor's Accounting Period +15 Working Days	H. As Of Date Prior Accounting Period/15 Working Days

J. Remarks:

The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Excel 2007 product or future versions as determined by the Government.

K. Distribution	Totals No.	Totals Type
ESC COTR/Mail Code:NE-I (1D)	1	A
Chief Financial Office/Mail Code: GG-C-A2 (1D)	3	D
ESC CO/Mail Code: OP-ES-A (1A) (1D)		

DATA REQUIREMENT DESCRIPTION

1. Title	2.Number
Report, Rate-Volume Variance Analysis	1.1 - 013
3. Use: To analyze variances between the Operating Plan and actual performance.	4. Date
	5. Organization: KSC
7. Interrelationship	6. References

8. Preparation Information

The Contractor shall provide an Analysis of Actual to Planned Costs down to the lowest WBS levels established in PWS to include volume and rate analysis including variance analysis for all major customers with costs in the current FY. The Contractor shall partner with the Government on the development of variance explanations to ensure common understanding and reporting. Various explanations will be at the element of cost level. Sample formats attached.

Contractor formats are acceptable as coordinated and agreed upon by the Government.

(Continued on next page)

RATE-VOLUME VARIANCE ANALYSIS REPORT
BY WBS BY CUSTOMER BY ELEMENT OF COST

RATE/VOLUME VARIANCE REPORT
Month, Year - Cum Prod Hrs: x,xxx.x

WBS & TITLE	PLAN HOURS	PLAN AMOUNT	ACTUAL HOURS	ACTUAL AMOUNT	VARIANCE HOURS	VARIANCE AMOUNT	PLAN RATE	ACT RATE	RATE VAR	VOL VAR $	RATE IMPACT
1.0 MANAGEMENT TOTAL											
xxxx S/T Labor - Prime	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
xxxx S/T Labor - Subs	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Total S/T Labor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
xxxx O/T Labor - Prime	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
xxxx O/T Labor - Subs	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Total O/T Labor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
xxxx Premium Labor - Prime				xx	xx	xx	xx	xx	xx	xx	xx
xxxx Premium Labor - Subs				xx	xx	xx	xx	xx	xx	xx	xx
Total Premium Labor				xx	xx	xx	xx	xx	xx	xx	xx
Total Labor	xx	xx	xx	xx							
Total FTE's											
Overtime %											
xxxx Trave											
xxxx Subcontracts											
xxxx Training											
xxxx Misc ODC											
xxxx Equipment											
Total Non-Labor											
Total Direct Cost											
xxxx Overhead											
xxxx G&A											
Total OH & G&A											
Total Cost											
xxxx Fee											
Total xxxx											
Overhead %								xx.xx%	xx.xx%	x.xx%	
G&A %								x.xx%	x.xx%	x.xx%	
Fee %								x.xx%	x.xx%	x.xx%	

VARIANCE EXPLANATION:

DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 014

B. Line Item Title:

Direct and Indirect Rates Report and Review

C. Opr.	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
OP-E	3	6	AR	April 15, 2011	See Block J

J. Remarks:

Reviews shall be conducted no less than semi-annually. Out-of-cycle reviews may be requested by the Government when an event or other circumstances warrant. Data shall be submitted no later than Oct 15 and Apr 15 each year. Briefings shall be conducted upon request of the Government. Contractor planning estimates that deviate from contract value shall be explained in detail. Submittals and reviews shall cover a combination of current and previous FY data to ensure data for each FY is captured in its entirety. End of year actual costs (Oct 15 data) shall be provided as a baseline comparison for estimates in the next fiscal year. Electronic report submissions shall compatible with Microsoft Office 2007 products or future versions as determined by the Government. Reports shall include prime and subcontractor data delivered either together or separately. Subcontractors may submit proprietary reports directly to the Government, only if the proprietary information cannot be released to the Prime contractor. The Prime contractor is responsible and held accountable for Subcontractor reports and their submission by DR due dates.

K. Distribution

ESC COTR/Mail Code: NE-I (1D)
ESC CO/Mail Code: OP-ES –A (1A) (1D)
Chief Financial Office/Mail Code: GG-C-A2 (1D)

Totals	
No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2.Number
Report and Review, Direct and Indirect Rates	1.1 - 014

3. Use	4. Date
To monitor trends for direct and indirect rate actual cost against contract value to understand variances. To asses any cost/budget impacts for current and future contact years. To determine the basis for changes and to determine whether rate changes are within or outside the contractor's control.	TBD
	5. Organization: KSC

7. Interrelationship	6. References

8. Preparation Information

For each sub-element listed below, the contractor shall identify the basis for any change, assess the estimated cost impact (up or down) by contract year, and provide rationale and a risk/cost analysis to justify cost increases that cannot be offset without impact to the Government for changes within their control. Sample formats with content & submission milestones are attached. Contractor format is acceptable for reports and briefing formats, but they shall be coordinated with the Government to ensure products and reviews are agreed upon. Sub-elements and data to be reviewed shall include, but not be limited to, the following:

INDIRECT RATES: (Examples-use actual)

Fringe Benefits/Non-Productive Pool Expenses: holiday, other paid absence, personal/sick leave, vacation
Fringe Benefits/Payroll Pool Expenses: FICA SS, FICA medical, state unemployment, federal unemployment, workers compensation. Fringe benefits/Other Expenses: group insurance, insurance disability, life insurance, pension, company match 401K, tuition reimbursement, VEBA Trust

Total fringe benefit expense, total labor base, total fringe application rate.

(Continued on next page)

8. Preparation Information Continued

DIRECT RATES: Productive/non-productive hours, regular/overtime/premium hours, and average unloaded wage rate for Prime Contractor and for each subcontractor, level of staffing by WBS. Other data to be provided includes the basis for labor rates (e.g. CBA, DOL, management action) and escalation factor(s) by labor category or skills code. Each reporting period, the report shall contain an itemized list of any wage rate changes since the previous report by labor category or skills code to reflect old and new unloaded labor rate with explanation of the basis of change and any impact or offsets to contract value. The Government reserves the right to drill down to WBS or labor category level for analysis.

G&A RATE: Labor & non-labor elements, total G&A, G&A base, G&A rate.

OVERHEAD RATE (excluding Direct Reallocation): Labor and non-labor elements (e.g. equipment, subcontracts, miscellaneous other direct costs, supply/material). Total overhead value, overhead base, and overhead rate.

Contractor formats are acceptable as coordinated and agreed upon by the Government.

Sample formats attached.

Index of Direct and Indirect Rates Reports

Format a: GFY-XX Fringe - Estimate at Completion (EAC) to Contract Value (CV)
Format b: GFY-XX Fringe - Contract Value (CV) to Actuals Comparison
Format c: GFY-XX Overhead - Estimate at Completion (EAC) to Contract Value (CV) Comparison
Format d: GFY-XX Overhead - Contract Value (CV) to Actuals Comparison
Format e: GFY-XX General and Administrative (G&A) - Estimate at Completion (EAC) to Contract Value (CV) Comparison
Format f: GFY-XX General and Administrative (G&A) - Contract Value (CV) to Actuals Comparison
Format g: GFY -XX Prime and Subcontractor Wage Rate Analysis

Format a: GFY-XX Fringe - Estimate at Completion (EAC) to Contract Value (CV) Comparison

Content: < identify if Prime, combination of Prime and Subcontractor, or Subcontractor >

Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G
	March GFY-XX CV*	**GFY-XX Actuals Oct - March**	**GFY-XX ETC April-Sept**	**EAC Oct - March**	**Delta EAC- CV**	**Variance Explanation**
Pool XX - Non-productive						
Holiday	$0.00	$0.00	$0.00	$0.00	$0.00	
Vacation	$0.00	$0.00	$0.00	$0.00	$0.00	
Personal/Sick Leave	$0.00	$0.00	$0.00	$0.00	$0.00	
Other Paid Leave	$0.00	$0.00	$0.00	$0.00	$0.00	
Severance	$0.00	$0.00	$0.00	$0.00	$0.00	
Other	$0.00	$0.00	$0.00	$0.00	$0.00	
Total Non-productive Expense	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	
Pool XX - Other						
Group Insurance	$0.00	$0.00	$0.00	$0.00	$0.00	
Insurance Disability	$0.00	$0.00	$0.00	$0.00	$0.00	
Insurance Life	$0.00	$0.00	$0.00	$0.00	$0.00	
Pension	$0.00	$0.00	$0.00	$0.00	$0.00	
Tuition Reimbursement	$0.00	$0.00	$0.00	$0.00	$0.00	
Uniform Allowance	$0.00	$0.00	$0.00	$0.00	$0.00	
Other	$0.00	$0.00	$0.00	$0.00	$0.00	
Total Other Expense	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	
Pool XX - Payroll						
FICA SS	$0.00	$0.00	$0.00	$0.00	$0.00	
FICA Medical	$0.00	$0.00	$0.00	$0.00	$0.00	
State Unemplyment	$0.00	$0.00	$0.00	$0.00	$0.00	
Federal Unemployment	$0.00	$0.00	$0.00	$0.00	$0.00	
Workers Compensation	$0.00	$0.00	$0.00	$0.00	$0.00	
General Liability	$0.00	$0.00	$0.00	$0.00	$0.00	
Other	$0.00	$0.00	$0.00	$0.00	$0.00	
Total Payroll Expense	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	
Total Labor Base	$0.00	$0.00	$0.00	$0.00	$0.00	
Total Expense Pool	$0.00	$0.00	$0.00	$0.00	$0.00	
Fringe Rate (Expense Pool / Labor Bas						

* Identify all contract modifications since last report: _____

Format b: GFY-XX Fringe - Contract Value (CV) to Actuals Comparison

Content: < identify if Prime, combination of Prime and Subcontractor, or Subcontractor >

Col. A	*Col. B*	*Col. C*	*Col. D*	*Col. E*
	Final (Sept) GFY-XX CV*	**Final GFY-XX Actuals Oct - Sept**	**Delta Actuals - Contract Value**	**Variance Explanation**
Pool XX - Non-productive				
Holiday	$0.00	$0.00	$0.00	
Vacation	$0.00	$0.00	$0.00	
Personal/Sick Leave	$0.00	$0.00	$0.00	
Other Paid Leave	$0.00	$0.00	$0.00	
Severance	$0.00	$0.00	$0.00	
Other	$0.00	$0.00	$0.00	
Total Non-productive Expense	**$0.00**	**$0.00**	**$0.00**	
Pool XX - Other				
Group Insurance	$0.00	$0.00	$0.00	
Insurance Disability	$0.00	$0.00	$0.00	
Insurance Life	$0.00	$0.00	$0.00	
Pension	$0.00	$0.00	$0.00	
Tuition Reimbursement	$0.00	$0.00	$0.00	
Uniform Allowance	$0.00	$0.00	$0.00	
Other	$0.00	$0.00	$0.00	
Total Other Expense	**$0.00**	**$0.00**	**$0.00**	
Pool XX - Payroll				
FICA SS	$0.00	$0.00	$0.00	
FICA Medical	$0.00	$0.00	$0.00	
State Unemplyment	$0.00	$0.00	$0.00	
Federal Unemployment	$0.00	$0.00	$0.00	
Workers Compensation	$0.00	$0.00	$0.00	
General Liability	$0.00	$0.00	$0.00	
Other	$0.00	$0.00	$0.00	
Total Payroll Expense	**$0.00**	**$0.00**	**$0.00**	
Total Labor Base	$0.00	$0.00	$0.00	
Total Expense Pool	$0.00	$0.00	$0.00	
Fringe Rate				

* Identify all contract modifications since last report: _____

Format c: GFY-XX Overhead - Estimate at Completion (EAC) to Contract Value (CV) Comparison

Content: < identify if Prime, combination of Prime and Subcontractor, or Subcontractor >

Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G
	March GFY-XX CV*	**GFY-XX Actuals Oct - March**	**GFY-XX ETC April-Sept**	**EAC Oct - March**	**Delta EAC- CV**	**Variance Explanation**
Labor Total	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	
Non-Labor						
Supplies and Materials	$0.00	$0.00	$0.00	$0.00	$0.00	
Equipment (Non-Capitalized)	$0.00	$0.00	$0.00	$0.00	$0.00	
Equipment (Capitalized)	$0.00	$0.00	$0.00	$0.00	$0.00	
Subcontracts (Award Fee Eligible)	$0.00	$0.00	$0.00	$0.00	$0.00	
Subcontracts (Non-Fee Bearing)	$0.00	$0.00	$0.00	$0.00	$0.00	
Other Direct Costs (ODC)	$0.00	$0.00	$0.00	$0.00	$0.00	
Vehicles	$0.00	$0.00	$0.00	$0.00	$0.00	
Oper & Equip Leases / Maint. Agmnt	$0.00	$0.00	$0.00	$0.00	$0.00	
Depreciation Expenses	$0.00	$0.00	$0.00	$0.00	$0.00	
Other	$0.00	$0.00	$0.00	$0.00	$0.00	
Total Non-Labor	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	
Total Overhead	$0.00	$0.00	$0.00	$0.00	$0.00	
Overhead Base	$0.00	$0.00	$0.00	$0.00	$0.00	
Overhead Rate (Total Overhead / Ove						

* Identify all contract modifications since last report: _____

Format d: GFY-XX Overhead - Contract Value (CV) to Actuals Comparison

Content: < identify if Prime, combination of Prime and Subcontractor, or Subcontractor

Col. A	*Col. B*	*Col. C*	*Col. D*	*Col. E*
	Final (Sept) GFY-XX CV*	**Final GFY-XX Actuals Oct - Sept**	**Delta Actuals - Contract Value**	**Variance Explanation**
Labor Total	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Non-Labor				
Supplies and Materials	$0.00	$0.00	$0.00	
Equipment (Non-Capitalized)	$0.00	$0.00	$0.00	
Equipment (Capitalized)	$0.00	$0.00	$0.00	
Subcontracts (Award Fee Eligible)	$0.00	$0.00	$0.00	
Subcontracts (Non-Fee Bearing)	$0.00	$0.00	$0.00	
Other Direct Costs (ODC)	$0.00	$0.00	$0.00	
Vehicles	$0.00	$0.00	$0.00	
Oper & Equip Leases / Maint. Agmnt	**$0.00**	**$0.00**	**$0.00**	
Depreciation Expenses				
Other				
Total Non-Labor				
Total Overhead	$0.00	$0.00	$0.00	
Overhead Base	$0.00	$0.00	$0.00	
Overhead Rate (Total Overhead / Ove				

* Identify all contract modifications since last report: _____

Format e: GFY-XX General and Administrative (G&A) -Estimate at Completion (EAC) to Contract Value (CV) Comparison

Content: < identify if Prime, combination of Prime and Subcontractor, or Subcontractor >

Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G
	March GFY-XX CV*	**GFY-XX Actuals Oct - March**	**GFY-XX ETC April-Sept**	**EAC Oct - March**	**Delta EAC- CV**	**Variance Explanation**
Total G&A Expense	$0.00	$0.00	$0.00	$0.00	$0.00	
Base	$0.00	$0.00	$0.00	$0.00	$0.00	
G&A Rate (Base / Total G&A Expense)						

* Identify all contract modifications since last report: _____

Format f: GFY-XX General and Administrative (G&A) - Contract Value (CV) to Actuals Comparison

Col. A	Col. B	Col. C	Col. D	Col. E
	Final (Sept) GFY-XX CV*	**Final GFY-XX Actuals Oct - Sept**	**Delta Actuals - Contract Value**	**Variance Explanation**
Total G&A Expense	$0.00	$0.00	$0.00	
Base	$0.00	$0.00	$0.00	
G&A Rate (Base / Total G&A Expense)				

* Identify all contract modifications since last report: _____

Format g: GFY -XX Prime and Subcontractor Wage Rate Analysis

As of: <date>

Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J
	Prior Period (<date>)			Current Period (<date>)			Delta		
	Headcount	**Unburdened**	**Burdened**	**Headcount**	**Unburdened**	**Burdened**	**Headcount**	**Unburdened**	**Burdened**
Company A	0	$0.00	$0.00	0	$0.00	$0.00	0	$0.00	$0.00
Company B	0	$0.00	$0.00	0	$0.00	$0.00	0	$0.00	$0.00
Company C	0	$0.00	$0.00	0	$0.00	$0.00	0	$0.00	$0.00
Company D	0	$0.00	$0.00	0	$0.00	$0.00	0	$0.00	$0.00
Company E	0	$0.00	$0.00	0	$0.00	$0.00	0	$0.00	$0.00
Total	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**

* Identify all contract modifications since last report: _____

DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC					A. ITEM NO. 015
B. LINE ITEM TITLE: Task Order Value by Cost Element by Award Fee Period (AFP)					
C. OPR.	D. TYPE	E. INSPECT/ ACCEPT	F. FREQ.	G. INITIAL SUB.	H. AS OF DATE
OP-ES-A	3	6	QU	03/30/13	90/15

J. REMARKS:

DR reports shall be submitted quarterly no later than due dates above.
Out-of-cycle requests may be required by the Government when circumstances warrant.

The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government.

K. DISTRIBUTION	TOTALS NO.	TOTALS TYPE
ESC CO/Mail Code: OP-ES-A (1A) (1D)	1	A
Chief Financial Office/Mail Code: GG-C-A2 (1D)	2	D

DATA REQUIREMENT DESCRIPTION

1. TITLE	2. NUMBER
Task Order Value by Cost Element by AFP	1.1 – 015
3. USE Provides NASA with a quarterly snap shot of individual and cumulative task order value by cost element as shown in the attached format.	4. DATE TBD 5. ORGANIZATION KSC
7. INTERRELATIONSHIP N/A	6. REFERENCES

8. PREPARATION INFORMATION

Information shall include the following data by AFP, as provided in the attached required format:

1. Task Order Number
2. Task Order Revision Number (i.e., Rev 8c)
3. Task Order Status (A = Active, C = Completed, X = Canceled)
4. Task Order Title
5. Cost Elements:
   1) Labor
   2) Task Order Execution (TEC) Labor
   3) Consultant Labor
   4) ODC (excludes Consultant Labor)
   5) Management & Administration (M&A) (without fee)
   6) G&A
   7) Fee
   8) M&A Fee
   9) Total

KSC FORM 16-246 (REV. 1/82)

Submitted on: 03/30/13 C = Completed A = Active X = Cancel

TASK ORDER SUMMARY
ALL YEARS (03/01/11 - 02/28/19)

Task Order No.	Revision No.	Status	Title	Labor	TEC Labor	Consultant Labor	ODC (excludes Consultant labor)	M&A w/o fee	G&A	Fee	M&A Fee	Total
2	Rev 8c	C	Health & Management	29,509	-	-	2,500	4,673	72	251	1,770	38,775
3				-	-	-	-	-	-	-	-	-
4				-	-	-	-	-	-	-	-	-
5				-	-	-	-	-	-	-	-	-
6				-	-	-	-	-	-	-	-	-
7				-	-	-	-	-	-	-	-	-
8				-	-	-	-	-	-	-	-	-
9				-	-	-	-	-	-	-	-	-
10				-	-	-	-	-	-	-	-	-
11				-	-	-	-	-	-	-	-	-
12				-	-	-	-	-	-	-	-	-
13				-	-	-	-	-	-	-	-	-
14				-	-	-	-	-	-	-	-	-
15				-	-	-	-	-	-	-	-	-
16				-	-	-	-	-	-	-	-	-
17				-	-	-	-	-	-	-	-	-
18				-	-	-	-	-	-	-	-	-
19				-	-	-	-	-	-	-	-	-
20				-	-	-	-	-	-	-	-	-
21				-	-	-	-	-	-	-	-	-
22				-	-	-	-	-	-	-	-	-
23				-	-	-	-	-	-	-	-	-
24				-	-	-	-	-	-	-	-	-
25				-	-	-	-	-	-	-	-	-
26				-	-	-	-	-	-	-	-	-
27				-	-	-	-	-	-	-	-	-
28				-	-	-	-	-	-	-	-	-
29				-	-	-	-	-	-	-	-	-
30				-	-	-	-	-	-	-	-	-
31				-	-	-	-	-	-	-	-	-
32				-	-	-	-	-	-	-	-	-
33				-	-	-	-	-	-	-	-	-
34				-	-	-	-	-	-	-	-	-
35				-	-	-	-	-	-	-	-	-
36				-	-	-	-	-	-	-	-	-
37				-	-	-	-	-	-	-	-	-
38				-	-	-	-	-	-	-	-	-
39				-	-	-	-	-	-	-	-	-
40				-	-	-	-	-	-	-	-	-
41				-	-	-	-	-	-	-	-	-
42	Rev 13f	A	ML Fluid Systems	8,749,440	238,812	2,486,401	2,239,591	1,453,239	130,766	576,401	189,957	16,064,607
43				-	-	-	-	-	-	-	-	-
44				-	-	-	-	-	-	-	-	-
45				-	-	-	-	-	-	-	-	-
46				-	-	-	-	-	-	-	-	-
47				-	-	-	-	-	-	-	-	-
48				-	-	-	-	-	-	-	-	-
49				-	-	-	-	-	-	-	-	-
50				-	-	-	-	-	-	-	-	-
				8,749,440	238,812	2,486,401	2,239,591	1,453,239	130,766	576,401	189,957	16,064,607

Submitted on: 03/30/13 C = Completed A = Active X = Cancel

Base Period - AFP1 - Task Orders (03/01/11 - 02/29/12)

Task Order No.	Revision No.	Status	Title	Labor	TEC Labor	Consultant Labor	ODC (excludes Consultant labor)	M&A w/o fee	G&A	Fee	M&A Fee	Total
2	Rev 8c	C	Health & Management	29,509	-	-	2,500	4,673	72	251	1,770	38,775
3												-
4												-
5												-
6												-
7												-
8												-
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35												-
36												-
37												-
38												-
39												-
40												-
41												-
42	Rev 13f	A	ML Fluid Systems	2,050,989	-	43,855	90,133	253,129	3,859	13,618	125,695	2,581,278
43												-
44												-
45												-
46												-
47												-
48												-
49												-
50												-
				2,050,989	-	43,855	90,133	253,129	3,859	13,618	125,695	2,581,278

Submitted on: 03/30/13 C = Completed A = Active X = Cancel

Base Period - AFP2 - Task Orders (03/01/12 - 09/30/12)

Task Order No.	Revision No.	Status	Title	Labor	TEC Labor	Consultant Labor	ODC (excludes Consultant labor)	M&A w/o fee	G&A	Fee	M&A Fee	Total
2	Rev 8c	C	Health & Management									-
3												-
4												-
5												-
6												-
7												-
8												-
9												-
10												-
11												-
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34												-
35												-
36												-
37												-
38												-
39												-
40												-
41												-
42	Rev 13f	A	ML Fluid Systems	1,439,243	49,545	549,835	234,151	245,306	22,110	122,319	13,125	2,675,634
43												-
44												-
45												-
46												-
47												-
48												-
49												-
50												-
				1,439,243	49,545	549,835	234,151	245,306	22,110	122,319	13,125	2,675,634

Submitted on: 03/30/13 C = Completed A = Active X = Cancel

Base Period - AFP3 - Task Orders (10/01/12 - 09/30/13)

Task Order No.	Revision No.	Status	Title	Labor	TEC Labor	Consultant Labor	ODC (excludes Consultant labor)	M&A w/o fee	G&A	Fee	M&A Fee	Total
2	Rev 8c	C	Health & Management	-			-	-	-	-	-	-
3												-
4												-
5												-
6												-
7												-
8												-
9												-
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35												-
36												-
37												-
38												-
39												-
40												-
41												-
42	Rev 13f	A	ML Fluid Systems	5,259,208	189,267	1,892,711	1,915,307	954,804	104,797	440,464	51,137	10,807,695
43												-
44												-
45												-
46												-
47												-
48												-
49												-
50												-
				5,259,208	189,267	1,892,711	1,915,307	954,804	104,797	440,464	51,137	10,807,695

Submitted on: 03/30/13 C = Completed A = Active X = Cancel

Base Period - AFP4 - Task Orders (10/01/13 - 09/30/14)

Task Order No.	Revision No.	Status	Title	Labor	TEC Labor	Consultant Labor	ODC (excludes Consultant labor)	M&A w/o fee	G&A	Fee	M&A Fee	Total
2	Rev 8c	C	Health & Management	-			-	-	-	-	-	-
3												-
4												-
5												-
6												-
7												-
8												-
9												-
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35												-
36												-
37												-
38												-
39												-
40												-
41												-
42	Rev 13f	A	ML Fluid Systems									-
43												-
44												-
45												-
46												-
47												-
48												-
49												-
50												-
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Submitted on: 03/30/13 C = Completed A = Active X = Cancel

Base Period - AFP5 - Task Orders (10/01/14 - 09/30/15)

Task Order No.	Revision No.	Status	Title	Labor	TEC Labor	Consultant Labor	ODC (excludes Consultant labor)	M&A w/o fee	G&A	Fee	M&A Fee	Total
2	Rev 8c	C	Health & Management	-			-	-	-	-	-	-
3												-
4												-
5												-
6												-
7												-
8												-
9												-
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34												-
35												-
36												-
37												-
38												-
39												-
40												-
41												-
42	Rev 13f	A	ML Fluid Systems									-
43												-
44												-
45												-
46												-
47												-
48												-
49												-
50												-
				-	-	-	-	-	-	-	-	-

Submitted on: 03/30/13 C = Completed A = Active X = Cancel

Base Period - AFP6 - Task Orders (10/01/15 - 02/29/16)

Task Order No.	Revision No.	Status	Title	Labor	TEC Labor	Consultant Labor	ODC (excludes Consultant labor)	M&A w/o fee	G&A	Fee	M&A Fee	Total
2	Rev 8c	C	Health & Management	-			-	-	-	-	-	-
3												-
4												-
5												-
6												-
7												-
8												-
9												-
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36												-
37												-
38												-
39												-
40												-
41												-
42	Rev 13f	A	ML Fluid Systems									-
43												-
44												-
45												-
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48												-
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Submitted on: 03/30/13 C = Completed A = Active X = Cancel

Base Period - AFP1 thru AFP6 - Task Orders (03/01/11 - 02/29/16)

Task Order No.	Revision No.	Status	Title	Labor	TEC Labor	Consultant Labor	ODC (excludes Consultant labor)	M&A w/o fee	G&A	Fee	M&A Fee	Total
2	Rev 8c	C	Health & Management	29,509	-	-	2,500	4,673	72	251	1,770	38,775
3				-	-	-	-	-	-	-	-	-
4				-	-	-	-	-	-	-	-	-
5				-	-	-	-	-	-	-	-	-
6				-	-	-	-	-	-	-	-	-
7				-	-	-	-	-	-	-	-	-
8				-	-	-	-	-	-	-	-	-
9				-	-	-	-	-	-	-	-	-
10				-	-	-	-	-	-	-	-	-
11				-	-	-	-	-	-	-	-	-
12				-	-	-	-	-	-	-	-	-
13				-	-	-	-	-	-	-	-	-
14				-	-	-	-	-	-	-	-	-
15				-	-	-	-	-	-	-	-	-
16				-	-	-	-	-	-	-	-	-
17				-	-	-	-	-	-	-	-	-
18				-	-	-	-	-	-	-	-	-
19				-	-	-	-	-	-	-	-	-
20				-	-	-	-	-	-	-	-	-
21				-	-	-	-	-	-	-	-	-
22				-	-	-	-	-	-	-	-	-
23				-	-	-	-	-	-	-	-	-
24				-	-	-	-	-	-	-	-	-
25				-	-	-	-	-	-	-	-	-
26				-	-	-	-	-	-	-	-	-
27				-	-	-	-	-	-	-	-	-
28				-	-	-	-	-	-	-	-	-
29				-	-	-	-	-	-	-	-	-
30				-	-	-	-	-	-	-	-	-
31				-	-	-	-	-	-	-	-	-
32				-	-	-	-	-	-	-	-	-
33				-	-	-	-	-	-	-	-	-
34				-	-	-	-	-	-	-	-	-
35				-	-	-	-	-	-	-	-	-
36				-	-	-	-	-	-	-	-	-
37				-	-	-	-	-	-	-	-	-
38				-	-	-	-	-	-	-	-	-
39				-	-	-	-	-	-	-	-	-
40				-	-	-	-	-	-	-	-	-
41				-	-	-	-	-	-	-	-	-
42	Rev 13f	A	ML Fluid Systems	8,749,440	238,812	2,486,401	2,239,591	1,453,239	130,766	576,401	189,957	16,064,607
43				-	-	-	-	-	-	-	-	-
44				-	-	-	-	-	-	-	-	-
45				-	-	-	-	-	-	-	-	-
46				-	-	-	-	-	-	-	-	-
47				-	-	-	-	-	-	-	-	-
48				-	-	-	-	-	-	-	-	-
49				-	-	-	-	-	-	-	-	-
50				-	-	-	-	-	-	-	-	-
				8,778,949	238,812	2,486,401	2,242,091	1,457,912	130,838	576,652	191,727	16,103,382

Submitted on: 03/30/13 C = Completed A = Active X = Cancel

Option 1 - AFP6 - Task Orders (03/01/16 - 09/30/16)

Task Order No.	Revision No.	Status	Title	Labor	TEC Labor	Consultant Labor	ODC (excludes Consultant labor)	M&A w/o fee	G&A	Fee	M&A Fee	Total
2	Rev 8c	C	Health & Management	-			-	-	-	-	-	-
3												-
4												-
5												-
6												-
7												-
8												-
9												-
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36												-
37												-
38												-
39												-
40												-
41												-
42	Rev 13f	A	ML Fluid Systems									-
43												-
44												-
45												-
46												-
47												-
48												-
49												-
50												-
				-	-	-	-	-	-	-	-	-

Submitted on: 03/30/13 C = Completed A = Active X = Cancel

Option 1 & 2 - AFP7 - Task Orders (10/01/16 - 09/30/17)

Task Order No.	Revision No.	Status	Title	Labor	TEC Labor	Consultant Labor	ODC (excludes Consultant labor)	M&A w/o fee	G&A	Fee	M&A Fee	Total
2	Rev 8c	C	Health & Management	-			-	-	-	-	-	-
3												-
4												-
5												-
6												-
7												-
8												-
9												-
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36												-
37												-
38												-
39												-
40												-
41												-
42	Rev 13f	A	ML Fluid Systems									-
43												-
44												-
45												-
46												-
47												-
48												-
49												-
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				-	-	-	-	-	-	-	-	-

Submitted on: 03/30/13 C = Completed A = Active X = Cancel

Option 2 & 3 - AFP8 - Task Orders (10/01/17 - 09/30/18)

Task Order No.	Revision No.	Status	Title	Labor	TEC Labor	Consultant Labor	ODC (excludes Consultant labor)	M&A w/o fee	G&A	Fee	M&A Fee	Total
2	Rev 8c	C	Health & Management	-			-	-	-	-	-	-
3												-
4												-
5												-
6												-
7												-
8												-
9												-
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37												-
38												-
39												-
40												-
41												-
42	Rev 13f	A	ML Fluid Systems									-
43												-
44												-
45												-
46												-
47												-
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Submitted on: 03/30/13 C = Completed A = Active X = Cancel

Option 3 - AFP9 - Task Orders (10/01/18 - 02/28/19)

Task Order No.	Revision No.	Status	Title	Labor	TEC Labor	Consultant Labor	ODC (excludes Consultant labor)	M&A w/o fee	G&A	Fee	M&A Fee	Total
2	Rev 8c	C	Health & Management	-			-	-	-	-	-	-
3												-
4												-
5												-
6												-
7												-
8												-
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35												-
36												-
37												-
38												-
39												-
40												-
41												-
42	Rev 13f	A	ML Fluid Systems									-
43												-
44												-
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46												-
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49												-
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				-	-	-	-	-	-	-	-	-

Submitted on: 03/30/13 C = Completed A = Active X = Cancel

Task Order No.	Revision No.	Status	Title	Options 1 thru 3 (03/01/16 - 02/28/16)	TEC Labor	Consultant Labor	ODC (excludes Consultant labor)	M&A w/o fee	G&A	Fee	M&A Fee	Total
				Options 1 thru 3 - Task Orders (03/01/16 - 02/28/16)								
2	Rev 8c	C	Health & Management	-	-	-	-	-	-	-	-	-
3				-	-	-	-	-	-	-	-	-
4				-	-	-	-	-	-	-	-	-
5				-	-	-	-	-	-	-	-	-
6				-	-	-	-	-	-	-	-	-
7				-	-	-	-	-	-	-	-	-
8				-	-	-	-	-	-	-	-	-
9				-	-	-	-	-	-	-	-	-
10				-	-	-	-	-	-	-	-	-
11				-	-	-	-	-	-	-	-	-
12				-	-	-	-	-	-	-	-	-
13				-	-	-	-	-	-	-	-	-
14				-	-	-	-	-	-	-	-	-
15				-	-	-	-	-	-	-	-	-
16				-	-	-	-	-	-	-	-	-
17				-	-	-	-	-	-	-	-	-
18				-	-	-	-	-	-	-	-	-
19				-	-	-	-	-	-	-	-	-
20				-	-	-	-	-	-	-	-	-
21				-	-	-	-	-	-	-	-	-
22				-	-	-	-	-	-	-	-	-
23				-	-	-	-	-	-	-	-	-
24				-	-	-	-	-	-	-	-	-
25				-	-	-	-	-	-	-	-	-
26				-	-	-	-	-	-	-	-	-
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32				-	-	-	-	-	-	-	-	-
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37				-	-	-	-	-	-	-	-	-
38				-	-	-	-	-	-	-	-	-
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40				-	-	-	-	-	-	-	-	-
41				-	-	-	-	-	-	-	-	-
42	Rev 13f	A	ML Fluid Systems	-	-	-	-	-	-	-	-	-
43				-	-	-	-	-	-	-	-	-
44				-	-	-	-	-	-	-	-	-
45				-	-	-	-	-	-	-	-	-
46				-	-	-	-	-	-	-	-	-
47				-	-	-	-	-	-	-	-	-
48				-	-	-	-	-	-	-	-	-
49				-	-	-	-	-	-	-	-	-
50				-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-

DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 016

B. Line Item Title:

Annual IT NASA Headquarters and Special IT Budget Report

C. Opr.	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
NE-I	3	6	AN	See Block J	See Block J

J. Remarks:

Report shall be due annually with the first report due in March of the first year of the contract. The Contractor shall submit type "D" electronic copies, that are compatible with Microsoft Office 2007 products of future versions as determined by the Government.

K. Distribution

ESC COTR/Mail Code: NE-I (1D)
Chief Financial Office/Mail Code: GG-C-A2 (1D)
ESC CO/Mail Code: OP-ES-A (1A) (1D)

Totals	
No.	Type
1	A
2	D

DATA REQUIREMENT DESCRIPTION

1. Title

Report, Annual IT NASA Headquarters and Special IT Budget

2. Number

1.1 - 016

3. Use

This report will be used by the government to provide NASA Headquarters with IT cost by programs, and to obtain data for OMB Exhibit 53 and OMB Exhibit 300. This report serves as a feeder report to one that ESC COTR Business Office prepares annually.

4. Date

TBD

5. Organization

KSC

7. Interrelationship

6. References

8. Preparation Information

The Contractor shall electronically submit a detailed annual report categorizing costs and other data pursuant to the attached format. In addition, the cost shall be segregated by customer, WYEs, and development effort vs. steady state. The Government will provide the current format to the Contractor on an annual basis. A sample format is attached to this DR as an example only. The Contractor shall coordinate questions on report content and annual submission format with ESC COTR prior to the required due date annually. The Government will reassess the Contractor's requirement to generate this report within 60 days after the initial submission is completed and will notify the Contractor via email if there is a continuing need to generate this report.

(Continued on next page)

Sample Exhibit 53 Report

Investment: Engineering Services (ES)

Portfolios	**GFY WYE's**	**GFY ($K)**	**GFY+1 ($K)**	**GFY+2 ($K)**	**GFY+3 ($K)**	**GFY+4 ($K)**	**GFY+5 ($K)**	**GFY+6 ($K)**	**GFY+7 (K)**
	0	$0	$0	$0	$	$0	$	$0	$0
Voice Services	0	$0	$0	$0	$	$0	$	$0	$0
WAN	0	$0	$0	$0	$	$0	$	$0	$0
LAN	0	$0	$0	$0	$	$0	$	$0	$0
Video	0	$0	$0	$0	$	$0	$	$0	$0
Science & Engineering Work	0	$0	$0	$0	$	$0	$	$0	$0
Station	0	$0	$0	$0	$	$0	$	$0	$0
General Purpose Work	0	$0	$0	$0	$	$0	$	$0	$0
Stations	0	$0	$0	$0	$	$0	$	$0	$0
Data Center	0	$0	$0	$0	$	$0	$	$0	$0
Application Portfolio	0	$0	$0	$0	$	$0	$	$0	$0
Messaging & Collaboration	0	$0	$0	$0	$	$0	$	$0	$0
IT Management	0	$0	$0	$0	$	$0	$	$0	$0
IT Security	0	$0	$0	$0	$	$0	$	$0	$0
Totals	0	$0	$0	$0	$	$0	$	$0	$0

GFY WYE's	**Project**	**GFY ($K)**	***GFY+1 ($K)***	**GFY+2 ($K)**	**GFY+3 ($K)**	**GFY+4 ($K)**	**GFY+5 ($K)**	**GFY+6 ($K)**	**GFY+7 ($K)**
0	Contractor Rate	$0	*$0*	$0	$0	$0	$0	$0	$0
0	Contractor Dollar Cost	$0	*$0*	$0	$0	$0	$0	$0	$0
0	Contractor Procurement	$0	*$0*	$0	$0	$0	$0	$0	$0
0	Totals	$0	*$0*	$0	$0	$0	$0	$0	$0

DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC					A. Item No. 017
B. Line Item Title: Environmental Management Plan					
C. Opr. TA-A4C	D. Type 3	E. Inspect/Accept 6	F. Freq. AN/AR	G. Initial Sub. Within 90 calendar days of contract start	H. As Of Date 365/90

J. Remarks:

The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government. The Contractor shall also publish this DR electronically on the Management Information System in a government-accessible location and format. Frequency of submittal is in relation to the Government Fiscal Year

K. Distribution

ESC COTR/Mail Code: NE-I (1D)
Center Operations/ Mail Code: TA-A4B, Environmental Assurance Branch (1D), and TA-A4C, Environmental Management Branch (1D)
ESC CO/Mail Code: OP-ES-A (1A) (1D)

Totals	
No.	Type
1	A
4	D

DATA REQUIREMENT DESCRIPTION

1. Title	2.Number
Plan, Environmental Management	1.1 - 017

3. Use	4. Date
To ensure the contract is conducted in compliance with all environmental policies, instructions, regulations and Executive Orders. To verify the Contractor intends to be proactive and innovative in their environmental practices.	TBD
	5. Organization: KSC

7. Interrelationship	6. References
	KNPR 8500.1

8. Preparation Information

The Environmental Management Plan shall describe tasks and activities for Environmental Management for the ESC contract. The Plan shall describe the organizational structure and management hierarchy of the ESC contract Environmental Office and the interfaces established throughout the ESC contract to ensure communication flow of environmental requirements, policies and procedures. The Plan shall describe the Contractor's internal surveillance plan established to ensure environmental compliance for the ESC contract. The Plan shall describe the mechanism established to ensure ESC management recognition of and response to environmental issues and compliance problems.

The Environmental Management Plan shall comply with the following document:

KNPR 8500.1 KSC Environmental Requirements

Contractor formats are acceptable as coordinated and agreed upon by the Government.

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 018

B. Line Item Title:

Emergency Preparedness Plan

C. Opr.	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
TA	1	2	AN/AR	Within 90 calendar days of contract start	Contract start

J. Remarks:

The plan shall be submitted within 90 calendar days after contract start in draft form and revised to provide a final plan for approval within 120 calendar days after contract start. The Contractor shall review the Plan at least annually thereafter and update as required, submitting the Plan for approval within 30 calendar days of revision. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government. The Contractor shall also publish this DR electronically on the Contractor's Performance Management System in a government-accessible location and format.

K. Distribution

ESC COTR/Mail Code: NE-I (1D)
ESC CO/Mail Code: OP-ES-A (1A) (1D)
NASA Emergency Management Officer/ Mail Code: TA-A2 (1D)
Safety and Mission Assurance/Mail Code SA-G2 (1D)

Totals	
No.	Type
1	A
4	D

DATA REQUIREMENT DESCRIPTION

1. Title	2.Number
Plan, Emergency Preparedness	1.1 - 018

3. Use	4. Date
To define the ESC emergency management program and compliance with applicable directives at KSC and to document the contractor requirements, responsibilities, processes and implementation approach for preparing for emergencies and contingencies.	TBD
	5. Organization: KSC

7. Interrelationship	6. References
	See Block 8

8. Preparation Information

The Contractor shall develop, implement and update an Emergency Preparedness Plan that describes the Contractor's approach to implementing specific protective and preventative measures for the Contractor's assigned flight hardware, facilities, systems, equipment, and operations. The Plan shall address mission specific requirements and comply with the following documents:

KNPR 1040.3, Continuity of Operations Planning (COOP) Procedural Requirements
KNPR 8715.2, Comprehensive Emergency Management Plan (CEMP)
KNPD 8710.1, KSC Emergency Preparedness Program Policy
NPR 1040.1, NASA Continuity of Operations (COOP) Planning Procedural Requirements w/Change 1
NPD 1040.4, NASA Continuity of Operations
NPD 8710.1, NASA Emergency Preparedness Program
NPR 8715.2, NASA Emergency Preparedness Program Procedural Requirements

The Emergency Preparedness Plan shall:

Address technological hazards involving accidents related to space vehicle, toxic fuels, pyrotechnics, radiological materials, other hazardous substances, and terrorist incidents.
Address natural hazards including adverse weather, tornadoes, tropical storms, hurricanes, tsunamis, and wildfires.
Document the management structure, processes and reporting requirements, techniques and formats to ensure protection of personnel and resources and provide visibility and insight for the government.
Provide documentation of required facility evacuation exercises and drills performed.
Provide a single point of contact for coordination with the NASA Emergency Management Officer.

Contractor formats are acceptable as coordinated and agreed upon by the Government.

KSC FORM 16-246 NS (REV. 02/09) PREVIOUS EDITIONS MAY BE USED

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC					A. Item No. 019
B. Line Item Title: Security Management Plan					
C. Opr. TA-A2	D. Type 2	E. Inspect/Accept 3	F. Freq. AN/AR	G. Initial Sub. Within 30 calendar days of contract start	H. As Of Date See Block J.

J. Remarks:

The Contractor shall subsequently submit or provide updates upon request of KSC security organization. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government. Frequency of submittal is in relation to the Government Fiscal Year

K. Distribution

ESC COTR/Mail Code: NE-I (1D)
Center Operations/Mail Code TA-A2 (1D)
ESC CO/Mail Code: OP-ES-A (1A) (1D)

Totals	
No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2.Number
Plan, Security Management	1.1 - 019
3. Use: To document the Contractor's approach to implementing NASA KSC Security Policy and Directives.	4. Date: TBD 5. Organization: KSC
7. Interrelationship	6. References: See Block 8.

8. Preparation Information

The Security Management Plan shall include sufficient information so as to address the Contractor's approach to implementing security. Additionally, other security initiatives and innovative operating approaches or procedures shall be included. The basic plan shall be unclassified. Any KSC referenced documents that would be included in the Security Management Plan whose inclusion would be classified should be addressed as a separate appendix appropriately classified. Changes shall be incorporated as required by change page or complete reissue.

Contractor formats are acceptable as coordinated and agreed upon by the Government.

The Security Management Plan shall comply with the following documents:

NPD 1600.2, NASA Security Policy
NPD 1660.1, NASA Counterintelligence (CI) Policy
NPR 1600.1, NASA Security Program Procedural Requirements
NPR 1660.1, Counterintelligence/Counterterrorism (CT) Procedural Requirements
NPR 1371.2 , Procedural Requirements for Processing Requests for Access to NASA Installations or Facilities by Foreign National and U.S. Citizens who are Representatives of Foreign Entities

KNPR 1600.1, KSC Security Procedural Requirements

DoD 5220.22 National Industrial Security Program

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 020

B. Line Item Title:

Export Control Plan

C. OPR	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
TA-A5A-2	2	3	AN/AR	Within 30 calendar days of contract start	365/30

J. Remarks:

The Export Control Plan requires approval of the Center Export Administrator (CEA). The Plan shall be submitted within 30 calendar days after contract start in draft form and revised to provide a final plan for approval within 120 calendar days after contract start date. The plan shall be reviewed at least annually thereafter and updated as required. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government. Frequency of submittal is in relation to the Government Fiscal Year

K. Distribution

ESC COTR/Mail Code: NE-I (1D)
Center Export Administrator/Mail Code: TA –A5A-2 (1D)
ESC CO/Mail code: OP-ES-A (1A) (1D)

Totals No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2. Number
Plan, Export Control	1.1 - 020
3. Use	4. Date
To document the Contractor's approach for export control.	TBD
	5. Organization
	KSC
7. Interrelationship	6. References
	NPR 2190.1

8. Preparation Information

The Contractor shall prepare and submit an Export Control Plan to describe the Contractor's planned approach for accomplishing contract functions while strictly adhering to export laws, regulations, and directives. The plan shall describe all export control activities related to the performance of contract requirements in accordance with NPR 2190.1b, NASA Export Control Program.

Contractor formats are acceptable as coordinated and agreed upon by the Government.

KSC FORM 16-246 NS (REV. 02/09) PREVIOUS EDITIONS MAY BE USED

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 021

B. Line Item Title:

Technology Transfer Plan

C. OPR	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
NE-T	1	2	RT/AR	See Block J	See Block J

J. Remarks:

The initial plan submittal shall be 30 calendar days after the contract start. The plan shall be maintained throughout the life of the contract. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government.

K. Distribution

ESC COTR Business Office/Mail Code: NE-I (1D)
ESC CO/Mail Code: OP-ES-A (1A) (1D)
Innovative Partnership Program Manager/Mail Code NE-T (1D)

Totals No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2. Number
Plan, Technology Transfer	1.1 - 021
3. Use To describe the Contractor's plan for implementation of NASA's technology transfer policies.	4. Date TBD 5. Organization KSC
7. Interrelationship DR 022 (Technology Transfer Report)	6. References See Block 8

8. Preparation Information

The Contractor shall establish a written, detailed Technology Transfer Plan setting forth the manner in which the contractor will meet the new technology reporting requirements of the NASA New Technology clause (NFS 1852.227-70). The plan shall also identify how the Contractor will implement NASA's technology transfer policy set forth in NASA's NPR 7500.1 (NASA Technology Commercialization Process), NPD 7500.2 (NASA Innovative Partnerships Program), and NPR 2210.1 (External Release of NASA Software). The plan shall address, at a minimum, the following:

1. Identify the specific areas of technical effort that are considered likely to generate new technology.
2. Describe the means by which project supervisory and technical personnel will be advised of the responsibilities, details, and benefits of new technology reporting.
3. Describe the procedures to be established, maintained, and followed for the purposes of identification and reporting (disclosure) of new technology within the time periods and in the manner prescribed by the New Technology clause.
4. Describe the procedure for timely submission of the interim and final new technology reports required by the New Technology clause.
5. Describe the procedures for providing prompt notification of either the award of subcontracts having as a purpose the conduct of experimental, developmental, research, design, or engineering work or of a prospective subcontractor's refusal to accept the flow down of the Patent Rights or New Technology clauses into the subcontract as required by the Patent Rights or New Technology and Data Rights clauses in the prime contract.
6. Identify the individual(s) assigned substantial and specific responsibilities for ensuring compliance with the requirements of the New Technology clause, as well as their qualifications and organizational placement to discharge these responsibilities.
7. Establish a technology transfer point of contact for coordinating all technology transfer activities.

8. Preparation Information

8. Describe programs aimed at educating and motivating employees to report new technology.

9. Describe programs that assist subcontractors in establishing technology transfer policies and implementing technology transfer plans.

10. Describe programs aimed at conducting collaborative efforts with third parties for the purpose of effectively transferring technology.

    Funding for such collaborative efforts will not necessarily include government funds and may consist of totally private funds. These collaborative efforts shall be reviewed and, where Government funds are to be used, approved by the Contracting Officer. Ownership of rights to the technology developed under these collaborative efforts shall be addressed in the individual agreements that are negotiated as part of the technology transfer process.

11. Describe programs that demonstrate a strong management commitment to technology transfer.

DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 022

B. Line Item Title:

Technology Transfer Report

C. OPR	D. Type	E. InspectlAccept	F. Freq.	G. Initial Sub.	H. As Of Date
NE-T	1	2	QU	See Block J	90/10

J. Remarks:

The initial report submittal shall be submitted 90 calendar days after the contract start. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government. Frequency of submittal is in relation to the Government Fiscal Year

K. Distribution

ESC COTR/Mail Code: NE-I (1D)
ESC CO/Mail Code: OP-ES-A (1A) (1D)
Innovative Partnership Program Manager/Mail Code: NE-T (1D)

Totals	
No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2. Number
Report, Technology Transfer	1.1 - 022
3. Use	4. Date
To describe the Contractor's new technology activity.	TBD
	5. Organization
	KSC
7. Interrelationship	6. References
DR 021 (Technology Transfer Plan)	See Block 8

8. Preparation Information

Prepare and submit a Technology Transfer Report on the following technology transfer activities:

1. Identify all reportable new technology items developed under this contract during the reporting period in accordance with the New Technology clause (NFS 1852.227-70).

2. Identify promising technologies developed under this contract during the reporting period having dual-use or partnership potential.

3. Report on the activities conducted under the Contractor's Technology Transfer Plan during the reporting period.

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 023

B. Line Item Title:

Safety and Health Plan

C. Opr.	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
SA-G2	1	2	AR/AN	Within 90 calendar days of contract start	See Block J

J. Remarks:

The Contractor shall submit a preliminary Safety and Health Plan with its proposal. The final, detailed plan shall be submitted for approval to the Contracting Officer within 90 calendar days after contract start. The Contractor shall review the Plan at least annually and shall revise the Plan as required (See Block 8). The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government. The Contractor shall also publish this DR electronically on the Contractor's Management System in a government-accessible location and format.

K. Distribution

ESC CO/ Mail Code: OP-ES-A (1A) (1D)
ESC COTR/ Mail Code: NE-I (1D)
Safety and Mission Assurance/Mail Code: SA-G2 (1D)
Aerospace Medicine and Occupational Health/ Mail Code: TA-B1A (1D)

Totals	
No.	Type
1	A
4	D

DATA REQUIREMENT DESCRIPTION

1. Title

Plan, Safety and Health

2.Number

1.2 - 023

3. Use

To ensure the contract is conducted in a safe manner and complies with applicable Safety and Health directives, instructions, policies, and regulations as listed in this contract. To verify the Contractor intends to be proactive in safety and health practices. To assure employees have a safe work environment and conditions throughout the performance of this contract.

4. Date

TBD

5. Organization

KSC

7. Interrelationship

6. References

NPR 8715.3, KNPR 8715.3

8.Preparation Information:

The Contractor's Safety and Health Plan shall comply with the following:

1. The Safety and Health Plan shall document the Contractor's approach for protecting the life, health, and well being of the public as well as NASA and Contractor employees including property and equipment.

2. The Contractor's approach for compliance with ESC requirements shall include identification of the policies, procedures, and methodologies implemented to protect personnel, equipment, and property.

3. The plan shall address implementation of each element specified in NFS 1852.223-73, Safety and Health Plan and Appendix E of NPR 8715.3, NASA General Safety Program Requirements.

4. The plan shall address the implementation of applicable safety requirements identified in NPR 8715.3, NASA General Safety Program Requirements and KNPR 8715.3, KSC Safety Practices Procedural Requirements.

5. The plan shall provide a description of the responsibility, authority and accountability for safety and health including reporting functions of the prime Contractor and subcontractors.

6. The plan may incorporate existing documents by reference, but the reference documents shall be readily available to NASA for evaluation.

7. The Contractor shall review the Safety and Health Plan at least annually and shall provide objective evidence (i.e., letter of correspondence, revision change notice, marked up changes, change request, or other means) of an annual, Safety and Health Plan review. The contractor shall revise it as required or when procedures or processes change that affect organizational responsibility, authority, and accountability. The Contractor shall submit the revised Plan to NASA for approval within 30 calendar days of the revision.

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 024

B. Line Item Title:

VPP Application

C. OPR.	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
SA-E2	1	2	OT	Within 36 months of contract start	TBD

J. Remarks:

The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products future versions as determined by the Government. The Contractor shall also publish this DR electronically on the Contractor Management System in a government-accessible location and format.

K. Distribution

ESC COR/Mail Code: NE-I (1D)
Safety and Mission Assurance/Mail Code SA-E2 (1D)
ESC CO/Mail Code: OP-ES-A (1A) (1D)

Totals	
No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2.Number
Application, VPP	1.2 - 024

3. Use	4. Date
To verify the Contractor's implementation and compliance to recognized safety and health standards. To ensure effective contractor management of safety and health programs, implementation of safety and health requirements into all elements of the contact including major subcontractors, and compliance to safety and health requirements. To ensure the contractor including major subcontractors are meeting and maintaining VPP requirements.	TBD
	5. Organization: KSC
7. Interrelationship	6. References: 29 CFR1910 OSHA CSP 03-01-003

8. Preparation Information

The Contractor shall prepare the VPP Application in accordance with OSHA CSP 03-01-003, Voluntary Protection Programs (VPP): Policies and Procedures Manual.

The Contractor shall demonstrate to NASA compliance to VPP requirements throughout all organizations of the contract including major subcontractors including:

Personnel are involved in the effort to maintain rigorous and detailed attention to safety and health.

Demonstrating continuous improvement in the operation of the safety and health management systems.

Establishing, documenting, and communicating to all persons within this contact: clear safety and health goals that are attainable and measurable, objectives that are relevant to workplace hazards, the prevention of workplace injury and illness, and policies and procedures that indicate how to accomplish the objectives and meet the goals.

Maintaining a written safety and health management system that documents the elements and sub-elements, procedures for implementing the elements, and other safety and health programs including those required by OSHA standards.

Providing and directing adequate resources to those responsible for safety and health, so they are able to carry out their responsibilities.

Involving employees in the safety and health management system in addition to their right to report a hazard, including, participation in audits, accident/incident investigations, self inspections, suggestion programs, planning, training, job hazard analyses, and appropriate safety and health committees and teams.

Implementing a hazard identification and analysis system to systematically identify basic and unforeseen safety and health hazards, evaluate their risks, and prioritize and recommend methods to eliminate or control.

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 025

B. Line Item Title:

Safety Statistics Record (SSR)

C. OPR	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
SA-E2	3	6	MO	Within 45 calendar days of Contract Start	30/15

J. Remarks:

The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government.

K. Distribution:

ESC CO/Mail Code: OP-ES-A (1A) (1D)
ESC COTR/Mail Code: NE-I (1D)
Safety and Mission Assurance/Mail Code: SA-E2 (1D)

Totals	
No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title

Record, Safety Statistics

2. Number

1.2 - 025

2. Use

The Safety Statistics Record provides information on mishaps and close calls affecting the Contractor's Safety and Health performance.

4. Date

TBD

5. Organization

KSC

7. Interrelationship

6. References

KNPR 8715.3

8. Preparation Information

The Safety Statistics Record (SSR) shall comply with KNPR 8715.3, KSC Safety Procedural Requirements and shall be submitted on KSC Form 6-22.

KSC FORM 16-246 NS (REV. 02/09) PREVIOUS EDITIONS MAY BE USED

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 026

B. Line Item Title:

Quality Plan

C. OPR	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
SA-G2	1	2	RT	Within 90 calendar days of contract start	See block 8

J. Remarks:

The Contractor shall submit a preliminary Quality Plan with its proposal. The final, detailed plan shall be submitted for approval to the Contracting Officer within 90 calendar days after contract start. The Contractor shall review the Quality Plan at least annually and shall revise the Plan as required (See Block 8). The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government. The Contractor shall also publish this DR electronically on the Contractor's Management System in a government-accessible location and format.

K. Distribution

ECS CO/Mail Code: OP-ES-A (1A) (1D)
ECS COTR/Mail Code: NE-I (1D)
Safety and Mission Assurance/Mail Code:SA-G2 (1D)

Totals	
No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title
Plan, Quality

2. Number
1.2 - 026

2. Use

To document the Contractor's approach for ensuring that quality requirements are implemented and satisfied throughout all phases of the ESC Contract.

4. Date
TBD

5. Organization
KSC

7. Interrelationship

6. References
NPD 8730.5
AS 9100

8. Preparation Information

The Contractor's Quality Plan shall comply with the following:

1. The plan shall document the Contractor's approach for delivering products and services that meet ESC requirements.

2. The Contractor's approach shall describe in detail all elements of the Quality Organization including management and describe the objectives, implementing policies, procedures, methodologies and control approaches utilized to meet ESC requirements.

3. The plan shall address in detail compliance with each of the elements contained in AS 9100 including a description of the philosophy and approach for implementation and address compliance with quality functions and activities contained in KNPR 8730.5, Quality Assurance Procedural Requirements. The plan shall contain identification of responsibilities, organizational interfaces, resources and where appropriate, schedules associated with meeting ESC requirements.

4. The plan shall provide a description of the responsibility, authority and accountability for quality including reporting functions of the prime Contractor and subcontractors.

5. The Quality Plan may incorporate existing documents by reference, but the reference documents shall be readily available to NASA for evaluation.

6. The Contractor shall review the Quality Plan at least annually and shall revise it as required or when procedures or processes change that affect organizational responsibility, authority, and accountability. The Contractor shall submit the revised Plan to NASA for approval within 30 calendar days of the revision.

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC					A. ITEM NO. 027
B. LINE ITEM TITLE: IT Management / Software Management Plan					
C. OPR. NE-C	D. TYPE 2	E. INSPECT/ ACCEPT 3	F. FREQ. AN	G. INITIAL SUB. Within 30 calendar days of contract start	H. AS OF DATE 365/30

J. REMARKS:

The IT Plan shall be submitted annually and updated as required. The government will review the IT Plan within 30 calendar days. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government. The Contractor shall also publish this DR electronically on the Contractor's Management Information System in a Government accessible location and format. Frequency of submittal is in relation to the Government Fiscal Year.

K. DISTRIBUTION	TOTALS NO.	TOTALS TYPE
ESC COR/Mail Code: NE-I (1D)	1	A
ESC CO/Mail Code: OP-ES-A (1A) (1D)	4	D
Control & Data Systems Division/Mail Code: NE-C (1D)		
Information Technology/ Mail code: IT (1D)		

DATA REQUIREMENT DESCRIPTION

1. TITLE	2. NUMBER
Plan, IT Management / Software Management	1.3-027
3. USE To document details on current IT architecture, coordinate future IT planning and obtain Government approval of Contractor's annual plan projecting 5 years ahead. To develop, implement, and maintain a Software Management Plan describing the Contractor's approach to satisfying applicable software development and O&M requirements.	4. DATE TBD 5. ORGANIZATION KSC
7. INTERRELATIONSHIP All IT System Security Plans (ITSSP) developed in DR 029 shall also be listed in this DR.	6. REFERENCES See Block 8

8. PREPARATION INFORMATION

The IT Plan shall cover all forms of IT including infrastructure and highly-specialized IT. The Contractor shall define the IT systems in text and sketches and provide a complete inventory of all IT hardware and software along with a listing of IT System Security Plans that cover each item. The plan shall include the software classification and software safety criticality of each software item. In addition, the data rights to the software shall be defined.

The Contractor shall provide a summary of the plans for IT system changes during the next 5 years. The Contractor shall discuss obsolescence planning and include a technical refresh plan to address obsolescence issues associated with all IT items sustained by the Contractor under this contract. The contractor shall provide an assessment and strategy to implement enhancements to support systems.

The Contractor's management approach and planned implementation methods for accomplishing software requirements in both the development and Operations & Maintenance (O&M) phases of the software life cycle.

The Contractor shall describe the support of Government interfaces and Government access to all applications and data. Contractor formats are acceptable as coordinated and agreed upon by the Government.

The IT Plan shall comply with the following documents:

NPD 2800.1 (Managing Information Technology)
NPD 2810.1 (NASA Information Security Policy)
NPR 2810.1 (Security of Information Technology)
NPR 2820.2 (NASA Software Policy)
NPR 2830.1 (NASA Enterprise Architecture Procedures)
NPR 7150.2 (NASA Software Engineering Requirements)
NPR 7120.7 (NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements)
NASA-STD-8719.13 (Software Safety Standard)
KNPR 8750.1 (Software Assurance Procedural Requirements)

KSC FORM 16-246 NS (REV. 02/09) PREVIOUS EDITIONS MAY BE USED

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 029

B. Line Item Title:

IT System Security Plan (ITSSP)

C. Opr.	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
IT-B	1	3	AR	See Block J.	See Block J.

J. Remarks:

The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government. All ITSSP documentation shall be submitted into the NASA Security Assessment and Authorization Repository (NSARR) in native format. Existing ITSSPs for legacy systems inherited from previous contracts and ITSSP's for Contractor provided systems shall be updated and submitted within 30 calendar days of Contract Award.

K. Distribution

ESC CO/Mail Code: OP-ES (1A) (1D)
ESC COTR/Mail Code: NE-I2 (1D)
NE IT Security Officer (1D)
Information Technology/ Mail Code: IT-B (1D)

Totals	
No.	Type
1	A
4	D

DATA REQUIREMENT DESCRIPTION

1. Title	2.Number
Plan, IT System Security	1.3 - 029

3. Use	4. Date
To allow the government to monitor IT Security compliance and ensure that the Contractor protects the confidentiality, integrity, and availability of NASA Electronic Information and IT resources.	TBD
	5. Organization: KSC

7. Interrelationship	6. References
All IT System Security Plans (ITSSP) developed in this DR shall also be listed in DR 027.	See Block 8.

8. Preparation Information

The Contractor shall establish, maintain, and implement an ITSSP for all IT systems provided or operated in performance of this contract NPR 2810.1defines the format and details required in each Plan. The Contractor shall incorporate IT Security requirements at all phases of the system development life cycle (SDLC) in accordance with NPR 2810.1.

The IT System Security Plans shall comply with the following documents:

NPD 2810.1 (NASA Information Security Policy)
NPR 2810.1 (Security of Information Technology)
IT Security Handbooks and NASA Interim Technical Requirements (NITR) listed in:
https://nodis-dms.gsfc.nasa.gov/NASA_Wide/restricted_directives/OCIO/OCIO_list.cfm

Federal Information Processing Standards (FIPS) 199 (Standards for Security Categorization of Federal Information and Information Systems)
FIPS 200 (Minimum Security Requirements for Federal Information and Information Systems)
NIST Special Publication (SP) 800-53, Recommended Security Controls for Federal Informatin Systems and Organizations (latest revision)

References

National Institute of Standards and Technology (NIST) Special Publication (SP) 800-18 (Guide for Developing Security Plans)
NIST SP 800-37 (Guide for the Security Authorization of Federal Information Systems)
NIST SP 800-53 (Recommended Security Controls for Federal Information Systems)
NIST 800-53A (Guide to Assessing the Security Controls in Federal Information Systems)
NIST SP 800-60 (Guide for Mapping Types of Information and Information Systems to Security Categories)
CxP 72171 Constellation Program Ground Systems IT Security Management Plan

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 030

B. Line Item Title:

Records Management Plan and Annual Summary of Record Holdings

C. Opr.	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
IT	2	4	AN	Within 90 calendar days of contract start	365/30

J. Remarks:

The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government. Frequency of submittal is in relation to the Government Fiscal Year

K. Distribution

Center Records Manager/Mail Code: IT-A-D (1D)
ESC COTR/Mail Code: NE-I (1A) (1D)
ESC CO/Mail Code: OP-ES-A (1D)

Totals	
No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2.Number
Plan, Records Management and Annual Summary of Record Holdings	1.3 - 030
3. Use To document, maintain and manage Federal Records.	4. Date TBD 5. Organization KSC
7. Interrelationship	6. References

8. Preparation Information

The Records Management Plan shall accurately and completely identify how the Government records will be maintained, preserved, protected and dispositioned in accordance with policies and procedures. An annual Summary of Record Holdings shall be provided annually along with plans for disposition of these records.

The Records Management Plan shall comply with the following documents:

44 U.S.C. Chapters 29, 31, 33
44 U.S.C. 3501 et seq. (Paperwork Reduction Act)
36 CFR Parts 1220-1238
5 U.S.C. 552 (The Freedom of Information Act)
5 U.S.C. 552a (The Privacy Act of 1974)
Homeland Security Presidential Directive/HSPD-12
OMB Circular A-130 (Management of Federal Information Resources)
OMB Circular A-123 (Internal Control Systems)
Executive Order 12656 (Assignment of Emergency Preparedness Responsibilities) Sections 201, 202, 1901, and 2001

KNPR 1440.6 KSC Records Management)
NPD 2190.1 (NASA Export Control Program)
NPR 1441.1 (NASA Records Retention Schedule
KNPD 1440.1 (KSC Records Management and Vital Records Program)

Contractor format is acceptable and shall include:

a. AFS#	Agency Filing Scheme number can be found in NPR 1441.1
b. Item #	In accordance with NPR 1441.1
c. Record Title	A description of what the record is and its function
d. Office of Record	Office responsible for retiring the record at end of lifecycle
e. Location	Physical location of records
e. Retention/Disposition	The period of time the record will be kept and how it is treated at the end of its active cycle
g. Perm vs. Temp	Designation of permanent status or temporary status of records including marking records that are ITAR controlled sensitive
h. Vital Status	Records identified as necessary for continuing operations immediately following an emergency
i. Volume	Volume of records

DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 031

B. Line Item Title:

Configuration and Data Management Plan

C. Opr.	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
NE-D	5	3	AR/AN	Within 30 calendar days of contract start	365/30

J. Remarks:

The Configuration and Data Management (CDM) Plan shall be submitted within 30 days of contract start in draft form and revised to provide final Plan for approval within 120 calendar days of contract start. The Plan shall be reviewed at least annually thereafter and updated as required. If there are no changes since the last update, the Contractor shall re-certify its accuracy no later than October 1st of each year. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government. The Contractor shall also publish this DR electronically on the Contractor's Performance Management System in a Government accessible location and format. Frequency of submittal is in relation to the Government Fiscal Year

K. Distribution

ESC COTR/Mail Code: NE-I (1D)

ESC CO/Mail Code: OP-ES-A (1A) (1D)

Design & Development Engineering Office/Mail Code: NE-D (1D)

Totals	
No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2.Number
Plan, Configuration and Data Management	1.6 - 031
3. Use To develop, implement, and maintain a Configuration and Data Management Plan describing the Contractor's approach to compliance with the configuration and data management requirements for Engineering product definition data (ref. NASA STD-0005) during the product's entire lifecycle (DDT&E thru retirement / disposal) while under KSC Engineering Directorateresponsibility.	4. Date TBD 5. Organization KSC
7. Interrelationship	6. References See Block 8

8. Preparation Information

The Configuration and Data Management Plan shall describe the Contractor's management approach and planned implementation methods for accomplishing configuration and technical data management requirements throughout the entire lifecycle (from the initial design and development through closeout / retirement) for KSC Engineering products.

The Configuration and Data Management Plan shall describe the following:

a) The relationship of the Contractor's organization, policies, responsibilities and processes for performing the Configuration and Data Management during: (1) Requirements Development, (2) Requirements Management, (3) Design, (4) Manufacturing/Procurement, (5) Installation, (6) Activation and Validation, (7) Test and Verification, (8) Operations / Maintenance / Sustaining, and (9) Disposal.
b) The relationship of the Contractor's Confituration and Data Management activities with Program, Project and Center Configuration anda Data Management activities.
c) The means to perform CDM activities in a expeditious and cost-effective manner.
d) The planned reporting to the Government of performance to plan in preparation for major milestone reviews and regularly scheduled reviews in accordance with below compliance documents.
e) The method for applying CDM requirements to legacy systems and bringing the legacy data into full compliance with the CDM Plan requirements when the legacy system is modified.

The Configuration and Data Management Plan shall comply with the following documents:

NASA-STD-0005 Configuration Management (CM) Standard
KNPR 8040.1 KSC Configuration Management Procedural Requirements
GSDO-PLN-1001 GSDO Program Information and Configuration Management (ICM) Plan
EIA- 859: Industry Consensus Standard for Data Management

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 032

B. Line Item Title:

Motor Vehicle Utilization Plan

C. OPR	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
TA-A5A	1	2	SA/AD	See Block J	182/10

J. Remarks:

The initial plan shall be submitted no later than 30 calendar days after contract award. The NASA Transportation Officer (NTO) will review the submittal prior to acceptance. The plan shall be updated every six months to cover all changes necessary including continuous justification for use of vehicles and a 24 month forecast for motor vehicle requirements. The Contractor shall submit type "D", electronic copies that are compatible with Microsoft Office 2007 products or future versions as determined by the Government.

K. Distribution

ESC COTR/Mail Code: NE-I (1D)
ESC CO/Mail Code: OP-ES-A (1A) (1D)
NTO Mail code: TA-B2-A (1D)

Totals	
No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2. Number
Plan, Motor Vehicle Utilization	032
3. Use	4. Date
To ensure management of motor vehicles needed to properly perform the requirements of the contract.	TBD
	5. Organization
	KSC
7. Interrelationship	6. References
	KNPR 6000.1

8. Preparation Information

The Motor Vehicle Utilization Plan shall fully describe the management techniques which assure that the proper numbers of vehicles are continuously justified, that operators are fully aware of "official use only" restrictions, and are properly licensed. The plan shall provide evidence that the Contractor maintains motor vehicle insurance covering bodily injury and property damage, with limits of liability as required by NFS 1852.228-75, Minimum Insurance Coverage. The plan shall detail the periodic checks (by the Contractor, GSA or other Vehicle Provider, and NASA) to ensure that the vehicles are being used exclusively for this contract. Operator discipline for improper use of vehicles shall be described. The plan shall also address operator requirements, processes for obtaining preventative maintenance, processes for accident reporting, and list the type/quantity of vehicles approved by the NASA Transportation Office for use on the contract.

The Contractor shall provide a copy of this plan to all its employees that may use the vehicles and provide continuous awareness of its requirements.

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC	A. Item No. 033

B. Line Item Title:

Task Order Plan

C. OPR	D. Type	E. Inspect/Accept	F. Freq.	G. Initial Sub.	H. As Of Date
NE-I	1	2	AR	See Block J	See Block J

J. Remarks:

Task Order Plans should be submitted within 15 working days after the Contractor's receipt of a request for a Task Order Plan from the Contracting Officer.

K. Distribution

ESC COTR/Mail Code: NE-I (1D)
ESC CO/Mail Code: OP-ES-A (1A) (1D)
Task Order Manager (of the applicable Task Order) (1D)

Totals	
No.	Type
1	A
3	D

DATA REQUIREMENT DESCRIPTION

1. Title	2. Number
Plan, Task Order	033
3. Use	4. Date
To describe the Contractor's plan for implementation of the Task Order. Forms the basis of agreement for cost targets, standards, metrics, milestones, etc.	TBD
	5. Organization
	KSC
7. Interrelationship	6. References

8. Preparation Information

The Contractor shall submit a plan describing the proposed approach for performing each Task Order. The following information shall be included:

1. Title of the applicable Task Order
2. Discussion of the technical approach for performing the work, including approaches for assessing the state of the art and avoiding duplication of prior research
3. Description of skill mix requirements, including identification of sub-contract resources
4. Recommended standards and metrics for use in monitoring and evaluating the Contractor's performance
5. Risk assessments of the ability to accomplish the Task Order (technical goals, cost, schedule)
6. Proposed schedule including estimated date of work commencement and milestones and deliverable dates. Include multiple year schedules, as required for completion of the task/project.
7. Direct Labor hours and burdened labor costs for both prime and sub-contractors, by applicable labor classification, estimated to complete the work.*
8. Fee applicable to labor costs.*
9. Subtotal of labor costs and fees.*
10. Travel, training, and material estimates and other indirect costs required to complete the work.*
11. Total costs.*
12. Other pertinent information.

*Note: Provide current government fiscal year cost estimates in detail, on a monthly basis and total, to establish current year cost targets. Out year data may be summary level, on a yearly basis.

KSC FORM 16-246 NS (REV. 02/09) PREVIOUS EDITIONS MAY BE USED

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DATA REQUIREMENT

CONTRACT APPLICATION INFORMATION FOR DRL ESC					A. ITEM NO. 034
B. LINE ITEM TITLE: Negotiated Estimated Cost (NEC) Report					
C. OPR.	D. TYPE	E. INSPECT/ACCEPT	F. FREQ.	G. INITIAL SUB.	H. AS OF DATE
GG-C-A2	2	2	SA/AR	See Block J	See Block J

J. REMARKS:

Phased NEC Reports are due no later than 18 working days after the end of the contractor's accounting period in March and September. The Contractor shall submit type "D", electronic copies, in Microsoft Office 2007 products (Excel for data) or future versions as determined by the Government, and the data shall also be available in the contractor's network accessible reporting tool. Frequency of submittal is in relation to the Government Fiscal Year.

K. DISTRIBUTION			TOTALS NO.	TOTALS TYPE
ESC COR/Mail Code:	NE-I	(1A)(1D)	3	A
ESC CO/Mail Code:	OP-ES-A	(1A)(1D)	3	D
Chief Financial Office/Mail Code:	GG-C-A2	(1A)(1D)		

DATA REQUIREMENT DESCRIPTION

1. TITLE	2. NUMBER
Negotiated Estimated Cost (NEC) Report	012
3. USE	4. DATE
This report will be used by the Government to compare Negotiated Estimated Cost (NEC) to actual contract performance for the purpose of Award Fee evaluation	TBD
	5. ORGANIZATION
	KSC
7. INTERRELATIONSHIP	6. REFERENCES

8. PREPARATION INFORMATION

The Contractor shall develop an annual time phased NEC report detailing how costs are projected to be incurred. The total estimated cost and direct labor hours (prime and subcontractor) reflected in the report must equal the NEC contract value for the period being evaluated and will be cumulative with in the contract year. The report shall be at the lowest level PWS/WBS structure and shall reflect all elements of cost identified in the Contractor Financial Management Reports, NASA Form 533M & NASA Form 533Q. The report shall be revised bi-annually capturing all contract modifications executed and task orders issued that increase or decrease contract value. The reports will status the phased NEC, the actual cost and the delta with detailed variance explanations. Attached "format c" is a sample.

Contractor formats are acceptable as coordinated and agreed upon by the Government.
Sample data formats are provided.

* Include subcontractors not considered major subcontractors, so the sum of Prime and all major subcontractors equals the total contract costs.

KSC FORM 16-246 NS (REV. 02/09) PREVIOUS EDITIONS MAY BE USED

Format c: Example Phased Negotiated Estimated Cost (NEC) Report

NEC Report

PHASED NEGOTIATED ESTIMATED COST (NEC) CONTRACT REPORT SUMMARY: CONTRACT PERIOD x/xx-x/xx			2. REPORT FOR PERIOD BEGINNING
TO: **NASA KSC** **ATTN: CONTRACTING OFFICER**	FROM: **CONTRACTOR X**		3. CONTRACT VALUE **a. COST** **xxxxxxxxxxx** / **b. FEE** **xxxxxx**
1. DESCRIPTION OF CONTRACT	a. TYPE	b. CONTRACT NO. AND LATEST DEFINITIZED AMENDMENT NO. **NAS x-xxxxx** **Mod xxxxx/xx/200X**	
	c. SCOPE OF WORK **NAME OF CONTRACT**	d. AUTH. CONTR. REP (Signature) **PROGRAM MANAGER**	DATE

4. REPORTING CATEGORY	4. ESTIMATED COST/HOURS TO COMPLETE															
	YEAR 1			YEAR 2			YEAR 3			YEAR 4			YEAR 5			CONTRACT TOTAL
	Oct - Mar	Apr - Sep	TOTAL	Oct - Mar	Apr - Sep	TOTAL	Oct - Mar	Apr - Sep	TOTAL	Oct - Mar	Apr - Sep	TOTAL	Oct - Mar	Apr - Sep	TOTAL	
TOTAL STRAIGHT TIME HOURS																
TOTAL OVERTIME HOURS																
Voluntary OT hours																
TOTAL HOURS																
WORK YEAR EQUIV (WYEs)																
DIRECT STRAIGHT TIME HOURS																
DIRECT OVERTIME HOURS																
DIRECT TOTAL																
LABOR COST																
Straight Time																
Overtime																
SUBC ST HOURS																
SUBC OT HOURS																
PAID LEAVE HOURS																
TOTAL OTHER HOURS																
SUBCONTRACTS COST																
OTHER DIRECT COST																
Material																
Subcontracts (Minor)																
Other Direct																
xxxxxx																
xxxxxx																
xxxxxx																
xxxxxx																
OVERHEAD																
Overhead																
Fringe																
TOTAL DIRECT COST																
G&A **xx%**																
SUBTOTAL COST																
FEE **xx%**																
SUBTOTAL COST																
Phase In																
CONTRACT TOTAL																

NNK11EA08C

ENGINEERING SERVICES CONTRACT

APPENDIX B
APPLICABLE DOCUMENTS

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Applicable Documents			
PWS Section	PWS Section Title	Applicable Document Number	Document/Item Title
1.1.3	Risk Management	NPR 7120.5	NASA Space Flight Program and Project Management Requirements
		NPR 8000.4	Agency Risk Management Procedures and Guidelines
1.1.4	Management Control Functions	NPR 7120.5	NASA Space Flight Program and Project Management Requirements
		NPR 7120.6	Lessons Learned Process
		NPR 8621.1	NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping
1.1.6	Environmental Compliance	40 CFR 265.16	Protection of Environment: Personnel Training
		Executive Order 13423	Strengthening Federal Environmental, Energy and Transportation Management
		KNPR 8500.1	KSC Environmental Requirements
		KSC-PLN-1912	KSC Environmental Management System Plan
		NPD 8500.1	NASA Environmental Management
		NPR 8530.1	Affirmative Procurement Program and Plan for Environmentally Preferable Products
		NPR 8553.1	NASA Environmental Management System
		NPR 8570.1	Energy Efficiency and Water Conservation
1.1.7	Emergency Preparedness	KNPR 8715.2	Comprehensive Emergency Management Plan
1.1.8	Security Management	Department of Defense (DoD) 5220.22	National Industrial Security Program Operating Manual
		KNPR 1600.1	KSC Security Procedural Requirements
		NPR 1371.2	Procedural Requirements for Processing Requests for Access to NASA Installations or Facilities by Foreign National and U.S. Citizens who are Representatives of Foreign Entities
		NPD 1660.1	NASA Counterintelligence (CI) Policy
		NPR 1660.1	Counterintelligence/Counterterrorism (CT) Procedural Requirements
1.1.9	Information Protection	15 CFR Parts 730-774	Commerce and Foreign Trade
		22 CFR Parts 120-130	International Traffic in Arms Regulations (ITAR)
		NPD 1382.17	NASA Privacy Policy
		NPD 2190.1	NASA Export Control Program
		NPR 1382.1	NASA Privacy Procedural Requirements
1.1.11	Technology Transfer	NFS 1852.227-70	NASA New Technology clause
1.2	Safety and Mission Assurance	KNPR 8715.3	KSC Safety Practices Procedural Requirements
		NPR 8715.3	NASA General Safety Program Requirements
1.2.2	System Safety	KNPR 8700.2	KSC System Safety and Reliability Analysis Methodology Procedural Requirements
1.2.3	Software Safety and Assurance	KNPR 8750.1	KSC Software Assurance Procedural Requirements
1.2.4	Occupational Safety	KNPR 8715.3	KSC Safety Practices Procedural Requirements
		OSHA Instruction CSP 03-01-003	Voluntary Protection Program (VPP): Policies, and Procedures Manual
1.2.5	Operational Safety	KNPD 8719.9	Examination and Licensing of KSC Operators of Special Heavy Equipment, Facility Cranes or Hoists
		KNPR 8715.3	KSC Safety Practices Procedural Requirements
		NASA-STD-8719.9	Standard for Lifting Devices and Equipment
		~~NSS 1740.12~~ NASA-STD 8719.12	Safety Standard for Explosives, Propellants, and Pyrotechnics
1.2.6	Industrial Hygiene	KNPD 1800.2	KSC Hazard Communication Program
		KNPR 1820.3	KSC Hearing Loss Prevention Program
		KNPR 1820.4	KSC Respiratory Protection Program
		KNPR 1840.19	KSC Industrial Hygiene Program
1.2.7	Health Physics	KNPD 1860.1	KSC Radiation Protection Program
		KNPR 1860.1	KSC Ionizing Radiation Protection Program
		KNPR 1860.2	KSC Nonionizing Radiation Protection Program
1.2.8	Reliability	KNPR 8700.2	KSC System Safety and Reliability Analysis Methodology Procedural Requirements
1.2.9	Quality	KNPR 8730.2	KSC Quality Assurance Procedural Requirements
		SAE AS 9100	Quality Management Systems Requirements for Aviation, Space and Defense Organizations
1.3.1	Information Technology Management	(none)	ASCS - Agency Security Configuration Standards
		NASA-STD-2804	Minimum Interoperability Software Suite
		NASA-STD-2805	Minimum Hardware Configurations
		NPR 2800.1	Managing Information Technology
		NPR 2830.1	NASA Enterprise Architecture Procedures
		NPR 7120.7	NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements
		NPR 7150.2	NASA Software Engineering Requirements

Applicable Documents			
PWS Section	PWS Section Title	Applicable Document Number	Document/Item Title
1.3.2	IT Security Management	KSC-PLN-2619	Mission Focus Review (MFR) 137 & Waiver Requirements Document
		NPD 2810.1	NASA Information Security Policy
		NPR 2810.1	Security of Information Technology
1.3.3	Records and Data Management	KNPD 1440.1	KSC Records Management Programs
		NPD 1440.6	NASA Records Management
1.4	Laboratories and Develomental Shops Maintenance	KNPR 8830.1	Facilities and Real Property Management Procedural Requirements
1.4.2	Chemical Hygiene Plans	29 CFR Part 1910.1450	Occupational Exposure to Hazardous Chemicals in Laboratories
		KNPR 8715.3	KSC Safety Practices Procedural Requirements
1.4.3	Laboratory Safety Plans	KNPR 8715.3	KSC Safety Practices Procedural Requirements
1.4.4	Hazardous Waste Management	~~KNPR 8715.31~~ KNPR 8500.1	KSC Safety Practices Procedural Requirements
1.4.5	Safety Walkdowns	KDP-KSC-F-3217	Supervisor Safety Inspection Check Sheet for Office Area
		KDP-KSC-F-3218	Safety Inspection Checklist for Mechanical Area
		KDP-KSC-F-3219	Safety Inspection Checklist for Lab Area
1.4.6	Safety Showers and Eyewash Testing	KDP-KSC-F-3218	Safety Inspection Checklist for Mechanical Area
		KDP-KSC-F-3219	Safety Inspection Checklist for Lab Area
1.4.8	Personal Protective Equipment (PPE)	KNPR 8715.3	KSC Safety Practices Procedural Requirements
1.4.12	Calibration	KNPR 8730.1	KSC Metrology and Calibration Procedural Requirements
1.4.13	Spares/Supplies/Consumable Management	KNPD 1440.1	KSC Records Management Programs
1.4.14	Property Custodianship	KNPR 4000.1	Supply and Equipment Systems Manual
		NPR 4200.2	Equipment Management Manua
1.4.15	Pressure Vessels/Systems (PV/S)	(none)	American Society of Mechanical Engineers (ASME) pressure vessel or piping standards
		49 CFR	Transportation
		KNPR 8715.3	KSC Safety Practices Procedural Requirements
		NASA-STD-8719.17	NASA Requirements for Ground-Based Pressure Vessels and Pressurized Systems
		NB-23	National Board Inspection Code
		NPD 8710.5	Policy for Pressure Vessels and Pressurized Systems
1.5	CAD/CAE Administration	KSC-NE-9068	Pro/Engineer Wildfire Modeling Standards and Practices: Top-Down Design Methodology
1.6	Configuration and Data Management	ANSI/GEIA-859	Data Management
		GP-435	Engineering Drawing Practices/Volumes I and II
		KDP-P-2712	Engineering Directorate Document/Drawing Number Request
		KDP-P-2718	Design and Development Engineering Electronic Approval and Release Process
		KNPR-8040.1	KSC Configuration Management Procedural Requirements
		KSC-CMP-2301	Constellation Ground Operations Level V Subsystems Configuration Management and Data Management Plan
		KTI-2718	DDMS Notification, Peer Review, Signatory Approval and Release
		NASA-STD-0005	NASA Configuration Management (CM) Standards
		NASA-STD-I-0007	NASA Computer Aided Design Interoperability Standard
2.1	Engineering Development	NASA-STD-5005	Standard For The Design And Fabrication Of Ground Support Equipment
		NPD 2820.1	NASA Software Policies
		NPR 7123.1	NASA Systems Engineering Processes and Requirements
		NPR 7150.2	NASA Software Engineering Requirements
2.1.2	Requirement Management	KDP-P-2713	Technical Review Process
2.1.3	Design	GP-435	Engineering Drawing Practices/Volumes I and II
		KDP-P-2713	Technical Review Process
		KSC-DE-512-SM	Facility, System, and Equipment General Design Requirements
		NASA STD 5005	Standard For The Design And Fabrication Of Ground Support Equipment
2.1.6	Testing	KNPR 8750.1	KSC Software Assurance Procedural Requirements replaces
2.3	Operations Technology Development	KDP-KSC-S-1162	KSC High Priority Technology Needs
		NPR 7120.8	NASA Research and Technology Program and Project Requirements
2.5.4	CAD–CAE and Simulation	GP-435	Engineering Drawing Practices/Volumes I and II
		KSC-DF-107	Technical Documentation Style Guide
2.5.8	Innovative Partnership Program	NPD 7500.2B	NASA Innovative Partnership Program
		NPR 7500.1	NASA Technology Commercialization Process
2.5.9	Logistics Services	KNPR 6000.1	Transportation Support Systems Manual

Applicable Documents			
PWS Section	PWS Section Title	Applicable Document Number	Document/Item Title
2.5.11	Safety and Mission Assurance Services	KNPR 8700.2	KSC System Safety and Reliability Analysis Methodology Procedural Requirements
		KNPR 8720.2	KSC Reliability and Maintainability Procedural Requirements
		KNPR 8730.2	Quality Assurance Procedural Requirements
		KNPR 8750.1	KSC Software Assurance Procedural Requirements
		SAE AS 9100	Quality Management Systems Requirements for Aviation, Space and Defense Organizations
2.5.12	Minor Modifications	KSC-KDP-P-1319	Facility Project Approval and Implementation
		NPR 8820.2	Facility Project Requirements
Appendix	A	29 CFR 1910	Occupational Safety and Health Standards
		36 CFR Parts 1220-1238	Records Management
		44 U.S.C. 3501 et seq.	Paperwork Reduction Act
		44 U.S.C. Chapters 29	Records Management by the Archivist of the United States and by the Administrator of General Services
		44 U.S.C. Chapters 31	Records Management by Federal Agencies
		44 U.S.C. Chapters 33	Disposal of Records
		5 U.S.C. 552	The Freedom of Information Act
		5 U.S.C. 552a	The Privacy Act of 1974
		DoD 5220.22	National Industrial Security Program
		Executive Order 12656	Assignment of Emergency Preparedness Responsibilities Sections 201, 202, 1901, and 2001
		Federal Information Processing Standards (FIPS) 199	Standards for Security Categorization of Federal Information and Information Systems
		FIPS 200	Minimum Security Requirements for Federal Information and Information Systems
		GEIA 859	Implementation Guide for Data Management
		Homeland Security Presidential Directive/HSPD-12	Policies for a Common Identification Standard for Federal Employees and Contractors
		ITS-SOP-0016	IT Security Plan Template, Requirements, Guidance and Examples
		ITS-SOP-0030	IT System Certification & Accreditation Process for FIPS 199 Moderate and High Systems
		ITS-SOP-0031	IT System Certification & Accreditation Process for FIPS 199 Low Systems
		ITS-SOP-0033	External System Identification and IT Security Requirements
		KDP-KSC-P-1881	NASA Business Records Management
		KNPD 1440.1	KSC Records Management and Vital Records Program
		KNPD 8710.1	KSC Emergency Preparedness Program Policy
		KNPR 1040.3	Continuity of Operations Planning (COOP) Procedural Requirements
		KNPR 1600.1	KSC Security Procedural Requirements
		KNPR 6000.1	Transportation Support Systems Manuals
		KNPR 8040.1	KSC Configuration Management Procedural Requirements
		KNPR 8500.1	KSC Environmental Requirements
		KNPR 8715.2	Comprehensive Emergency Management Plan (CEMP)
		KNPR 8715.3	KSC Safety Practices Procedural Requirements
		KNPR 8750.1	Software Assurance Procedural Requirements
		KSC-CMP-2301	Constellation Ground Operations Level V Subsystems Configuration Management and Data Management Plan
		NASA-STD-0005	Configuration Management (CM) Standards
		NASA-STD-8719.13	Software Safety Standard
		National Institute of Standards and Technology (NIST) Special Publication (SP) 800-18	Guide for Developing Security Plans
		NIST SP 800-37	Guide for the Security Authorization of Federal Information Systems
		NIST SP 800-53	Recommended Security Controls for Federal Information Systems
		NIST SP 800-60	Guide for Mapping Types of Information and Information Systems to Security Categories
		NPD 1040.4	NASA Continuity of Operations
		NPD 1440.6	NASA Records Management
		NPD 1600.2	NASA Security Policy
		NPD 1660.1	NASA Counterintelligence (CI) Policy

Applicable Documents			
PWS Section	PWS Section Title	Applicable Document Number	Document/Item Title
		NPD 2190.1	NASA Export Control Program
		NPD 2800.1	Managing Information Technology
		NPD 2810.1	NASA Information Security Policy
		NPD 2820.2	NASA Software Policy
		NPD 7120.4	Program/Project Management
		NPD 7500.2	NASA Innovative Partnership Program
		NPD 8710.1	NASA Emergency Preparedness Program
		NPR 1040.1	NASA Continuity of Operations (COOP) Planning Procedural Requirements w/Change 1
		NPR 1371.2	Procedural Requirements for Processing Requests for Access to NASA Installations or Facilities by Foreign National and U.S. Citizens who are Representatives of Foreign Entities
		NPR 1441.1	NASA Records Retention Schedules
		NPR 1600.1	NASA Security Program Procedural Requirements
		NPR 1660.1	Counterintelligence/Counterterrorism (CT) Procedural Requirements
		NPR 2190.1	NASA Export Control Program
		NPR 2210.1	External Release of NASA Software
		NPR 2810.1	Security of Information Technology
		NPR 2830.1	NASA Enterprise Architecture Procedures
		NPR 7120.5	NASA Program and Project Management Processes and Requirements
		NPR 7120.7	NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements
		NPR 7150.2	NASA Software Engineering Requirements
		NPR 7500.1	NASA Technology Commercialization Process
		NPR 8000.4	Risk Management Procedural Requirements
		NPR 8715.2	NASA Emergency Preparedness Program Procedural Requirements
		NPR 9501.2	NASA Contractor Financial Management Reporting
		NPR 8715.3	NASA General Safety Program Requirements
		OMB Circular A-123	Management Accountability and Control
		OMB Circular A-130	Management of Federal Information Resources
		OSHA CSP 03-01-003	Voluntary Protection Programs Policies and Procedures Manual
		SAE AS 9100	Quality Management Systems Requirements for Aviation, Space and Defense Organizations
		WARN ACT	Worker Adjustment and Retraining Notification Act
Appendix	C	ANSI/NCSL Z540.1,	Calibration Laboratories and Measuring and Test Equipment - General Requirements
		ANSI/NCSL Z540.3	Requirements for the Calibration of Measuring and Test Equipment
		AS 9100	Quality Management Systems Requirements for Aviation, Space and Defense Organizations
		FAC Rule 64E-5.434	Training, Testing, Certification, and Audits
		IEEE 1451	Standard for a Smart Transducer Interface for Sensors and Actuators Power over Ethernet
		IEEE 1588	Standard for a Precision Clock Synchronization Protocol for Networked Measurement and Control Systems
		IEEE 802.3(a)(f) protocols	Power over Ethernet protocols
		ISO 14001	Environmental Management System
		ISO 9001/2000	Quality management systems — Requirements
		KDP-KSC-F-3217	Supervisor's Safety Inspection Checklist for Office area
		KDP-KSC-F-3218	Supervisor's Safety Inspection Checksheett for Mechanical area
		KDP-KSC-F-3219	Supervisor's Safety Inspection Checksheet for Lab Area
		KNPR 8500.1	KSC Environmental Management
		KNPR 8715.3	KSC Safety Practices and Procedural Requirements
		KSC-OP-2264	NASA Launch Equipment Test Facility Operations and Management Plan
		NADCAP	National Aerospace and Defense Contractors Accreditation Program
		NHB 1441.1	Records Management requirements
Contract Clause NFS 1852.204-76	Security Requirements for Unclassified Information Technology Resources		
		NPD 1382.17	NASA Privacy Policy
		NPD 1440.6	NASA Records Management
		NPD 2540.1	Personal Use of Government Office Equipment Including Information Technology
		NPD 2830.1	NASA Enterprise Architecture

Applicable Documents			
PWS Section	PWS Section Title	Applicable Document Number	Document/Item Title
		NM2810-64	NASA Interim Directive: Information Technology Security and Efficiency Requirements
		NITR 2800_2	Email Services and Email Forwarding
		NITR 2810_14	Managing Elevated User Privileges on NASA Desktop and Laptop Computers
		NITR 2800_1	NASA Information Technology Waiver Requirements and Procedures
		NITR 2810_21	System and Services Acquisition Policy and Procedures
		NITR 2810_20	System and Communications Protection Policy and Procedures
		NITR 2810_23	NASA Authorizing Official (AO) Procedural Requirement
		NITR 2830_1	Networks in NASA Internet Protocol (IP) Space or NASA Physical Space
		NITR 2810_22	Media Protection Policy and Procedures
		NITR 2810_17	System Maintenance Policy and Procedures
		NITR 2810_19	Audit and Accountability Policy and Procedures
		NITR 2810_15	Contingency Planning
		NITR 2810_12	Continuous Monitoring
		NITR 1382_2	NASA Rules and Consequences to Safeguarding PII, with Change 1, dated 02/04/2008
		NITR 1382_1	Personally Identifiable Information (PII) Breach Response Policy
		ITS-HBK-0004	Managed Elevated Privileges (EP) Implementation Guidance Handbook
		ITS-SOP 0001	Format and Procedures for Producing IT Security SOPs
		ITS-SOP 0002	NASA's Target Vulnerability Selection Procedures
		ITS-SOP 0004	NASA's Information Technology Requirement (NITR) Procedures
		ITS-SOP 0005	Procedure for completing a NASA IT Security Program or System Assessment
		ITS-SOP 0007	System Security Plan Numbering Schema
		ITS-SOP 0008	Procedure for Initiating and Managing Targeted Monitoring of electronic Data (being updated)
		ITS-SOP 0012	Patch Selection and Reporting Procedures (being updated)
		ITS-SOP 0016	IT Security Plan Template, Requirements, Guidance and Examples
		TS-SOP 0017	IT Security Penetration Test Plan and Rules of Engagement
		ITS-SOP 0021	Network Security Vulnerability Scanning (new memo released on 2/6/09)
		ITS-SOP 0022	Determining Cost Impact of Information Technology Security Incidents
		ITS-SOP 0030	IT System Certification & Accreditation Process for FIPS 199 Moderate & High Systems
		ITS-SOP 0031	IT System Certification & Accreditation Process for FIPS 199 Low Systems
		ITS-SOP 0033	External System Identification and IT Security Requirements
		ITS-SOP 0035	Digital Media Sanitization
		ITS-SOP 0040	Contingency Planning
		ITS-SOP 0043	Procedure for Selecting and tailoring NIST SP 800-53 Common Security Controls
		ITS-SOP 0044	Procedure for Responding to a Breach of PII
		ITS-SOP 0046	Procedure for Review and Reducing PII
		EA-STD 0001.0	Standard for Integrating Applications into the NASA Access Management, Authentication, and Authorization Infrastructure
		EA-SOP 0003.0	Procedures for Submitting a NASA Agency Forest (NAF) Deviation Request and Transition Plan
		EA-SOP 0004.0	Procedures for Submitting an Application Integration Deviation Request and Transition Plan
		NASA-STD-2804	Minimum Interoperability Software Suite
		NASA-STD-2805	Minimum Hardware Configurations
		CIO Memoranda:	
			Implementation Plan for NIST SP 800-53, Revision 3 Security Controls
			Delegation of Waiver Authority and Responsibility for Selected Requirements for Managing Elevated User Privileges on NASA IT Devices
			Identity, Credential, and Access Management Business Process Leads
			Two-Factor Token Infrastructure
			Security and Support Policy for Smartphones
			NASA "Secure WebEx" Now Approved for Secure Meetings and Communication of SBU Data
			Certification and Accreditation Notices
			Revised Deadline for Compliance with Requirements for Managing Elevated User Privileges
			Delegation of Waiver Authority and Responsibility for Vulnerability Scanning Requirements
			Roles and Responsibilities for Protecting NASA Sensitive But Unclassified (SBU) Information
			FY 2009 Scanning and Vulnerability Elimination or Mitigation

Applicable Documents			
PWS Section	PWS Section Title	Applicable Document Number	Document/Item Title
			Personally Identifiable Information (PII) Incident Reporting
			Agency Organization-Defined Information Technology Security Controls
			Policy for Use of Removable Media, Such as USB Thumb Drives
			NASA Security Operations Center Operations and NASIRC Transition
			Information Technology Management Board Decisions Regarding NCI Firewall Settings and SharePoint 2007 Pilots
			Certification and Accreditation Direction for FY09
			Personally Identifiable Information (PII) Responsibilities Statement
			Deployment of the Software Refresh Portal
			Requirement to Log and Verify Sensitive Data Extracts
			Remote Access to Personally Identifiable Information (PII)
			Clarification on Requirement for Contractors to Complete NASA Annual IT Security Awareness Training
			Decision to Disallow Substitutions for Basic and Managers Information Technology Security Awareness Training
			System Security Documentation in RMS
			Supplemental FY08 Guidance for Agency Security Configurations Standards and FDCC Reporting
			Information Discovery
			Decision to Cancel Procurement Information Circular (PIC) 04-03 (System Administrator Certification Program)
			Release of NPD 2200.1A, Management of NASA Scientific and Technical Information
			Data at Rest Freeze
			Agency Security Configuration Standards: Federal Desktop Core Configurations
			Designation of FIPS-199 Impact Level for NASA's OAIT Voice Systems
			Designation of FIPS-199 Impact Level for NASA OAIT Data Center Systems
			Designation of FIPS-199 Impact Level for NASA OAIT LANs
			FY 2007 and FY 2008 Patch Management and Security Configuration Metrics
			Meeting OMB Memoranda M-06-015 “Safeguarding Personally Identifiable Information;” M-06-016 “Protection of Sensitive Agency Information,” and M-06-019 “Reporting Incidents Involving Personally Identifiable Information and Incorporating the Cost for Security in Agency Information Technology Investments”
			Meeting NASA Information Technology Security Requirements
			Designation of FIPS-199 Impact Level for NASA OAIT Desktop Systems
			Policy Governing NASA's Publicly Accessible Web sites
			Update of NASA Web site Linking Policy
			Update of NASA Web site Privacy Policy

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ENGINEERING SERVICES CONTRACT

APPENDIX C
LABORATORIES AND DEVELOPMENTAL SHOPS DESCRIPTIONS

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Laboratory and Shop Work Control Systems				
Category	**Laboratory Name**	**Laboratory Identifier**	**Current Work Control System**	**Lab Information in CTCLMS[2]? Y/N**
IT/Communications	Experimental Imaging Laboratory	IT1	None	Y
	Advanced Network Development Laboratory	IT2	None	Y
	~~Fiber Optics and Communication Laboratory~~	~~IT3~~	~~None~~	~~Y~~
	Spaceport Processing Systems Development Laboratory	IT4	None	Y
	~~Launch Control System (LCS) Laboratory~~	~~IT5~~	~~ClearQuest~~	~~N~~
Physical Sciences	Applied Chemistry Laboratory	PS1	None	Y
	Analytical and Biological Chemistry Laboratory	PS2	None	N
	Chemical Analysis Laboratory	PS3	NASA Materials Science Division Work Control System (WCS)[1]	Y
	Cryogenics Test Laboratory	PS4	None	Y
	Advanced Non-Destructive Evaluation (NDE) Laboratory	PS5	NASA Materials Science Division WCS[1]	Y
	Applied Physics Laboratory	PS6	None	Y
	Electrostatics and Surface Physics Laboratory	PS7	None	Y
	Granular Mechanics and Regolith Operations Laboratory	PS8	None	Y
Electrical	Sensors and Transducers Development Laboratory	EL1	None	Y
	Instrumentation and Data Acquisition Development Laboratory	EL2	None	Y
	Electronics Development Laboratory	EL3	None	Y
	Control Systems Development Laboratory	EL4	None	Y
	Power Systems Development Laboratory	EL5	None	Y
	Embedded Systems Development Laboratory	EL6	None	Y
	Range Technology Development Laboratory	EL7	None	Y
Material Properties	Materials Failure Analysis Laboratory	MP1	NASA Materials Science Division WCS[1]	Y
	Electrical Failure Analysis Laboratory	MP2	NASA Materials Science Division WCS[1]	Y
	Mechanical Failure Analysis Laboratory	MP3	NASA Materials Science Division WCS[1]	Y
	Polymer Science and Technology Laboratory	MP4	None	Y
	Corrosion Technology Laboratory	MP5	None	Y

Category	Laboratory Name	Laboratory Identifier	Current Work Control System	Lab Information in CTCLMS[2]? Y/N
	Physical Testing and Analysis Laboratory	MP6	NASA Materials Science Division WCS[1]	Y
	Metrology Laboratory	MP7	NASA Materials Science Division WCS[1]	Y
Payloads	Flight Experiment Development Laboratory	PA1	None	N
Surface Systems	~~Lighting Testbed Laboratory~~	~~SS1~~	~~None~~	~~N~~
	~~Low Pressure Testbed Laboratory~~	~~SS2~~	~~None~~	~~N~~
	Micro and Molecular Biology Laboratory	SS3	None	N
	Controlled Environment Laboratory	SS4	None	N
	Water Processing Laboratory	SS5	None	N
	Air Revitalization Laboratory	SS6	None	N
Developmental Shops	Launch Equipment Test Facility (LETF) Shop	DS1	Internal Work Control System	Y
	Engineering Development Laboratory (EDL) Machine Shop	DS2	None	Y
	Prototype Development Shop	DS3	Internal Work Control System	Y
NOTE: THE FOLLOWING CAPABILITIES WILL BE OPTIONS				
IT/Communications	Electromagnetic Interference Testing Laboratory	IT6	Maximo	N
Physical Sciences	Chemical Sampling and Analysis Laboratory	PS9	StarLIMS	N
	Component Cleaning and Refurbishment Laboratory	PS10	StarLIMS	N
	NDE Laboratory (Institutional)	PS11	Derivative of NASA WCS[1]	N
	NDE Laboratory (Shuttle)	PS12	Maximo	N
Calibration	Standards, Electrical, Physical, and In-Situ Calibration	CA1	Maximo	N

Note 1: NASA Materials Science Division Work Control System is an Oracle-based system
Note 2: CTCLMS = Core Technical Capabilities Laboratory Management System

Category	Laboratory Name	Laboratory Identifier	1.4.1 Management	1.4.2 Chemical Hygiene Plan	1.4.3 Lab Safety Plan	1.4.4 Haz Waste Management	1.4.5 Safety Walkdowns	1.4.6 Eye Wash/ Safety Shower Inspections	1.4.7 Fire Inspections	1.4.8 Personal Protective Equipment (PPE)	1.4.9 OEM Maintenance	1.4.10 Support Equipment Documentation/ Identify Equipment Obsolescence	1.4.11 Prev. Maint. (non OEM)	1.4.12 Calibration	1.4.13 Procurement of Spares/ Supplies/ Consumables	1.4.14 Property Custodian	1.4.15 PVs
			Daily	12/yr	4/yr	Daily	Monthly	Weekly	4/yr	12/yr	Daily	Daily	Daily	Daily	12/yr	Daily	1/yr
IT/ Communications	Experimental Imaging Laboratory	IT1	R	R	R	R	R	N/R	R	N/R	R	R	N/R	R	R	R	N/R
	Advanced Network Development Laboratory	IT2	R	N/R	R	N/R	R	N/R	R	N/R	R	R	N/R	R	R	R	N/R
	Fiber Optics and Communication Laboratory	IT3	R	R	R	R	R	N/R	R	N/R	R	R	N/R	R	R	R	N/R
	Spaceport Processing Systems Development Laboratory	IT4	R	N/R	R	N/R	R	N/R	R	N/R	R	R	R	R	R	R	N/R
	Launch Control System (LCS) Laboratory	IT5	R	N/R	R	N/R	R	N/R	R	N/R	R	R	R	R	R	R	N/R
Physical Sciences	Applied Chemistry	PS1	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
	Analytical and Biological Chemistry Laboratory	PS2	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
	Chemical Analysis Laboratory	PS3	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
	Cryogenics Test Laboratory	PS4	R	R	R	R	R	R	R	R	N/R	R	R	R	R	R	N/R
	Advanced Non-Destructive Evaluation (NDE) Laboratory	PS5	R	N/R	R	N/R	R	N/R	R	N/R	R	R	R	R	R	R	N/R
	Applied Physics Laboratory	PS6	R	N/R	R	N/R	R	N/R	R	R	R	R	R	R	R	R	N/R
	Electrostatics and Surface Physics Laboratory	PS7	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
	Granular Mechanics and Regolith Operations Laboratory	PS8	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
Electrical	Sensors and Transducers Development Laboratory	EL1	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
	Instrumentation and Data Acquisition Development Laboratory	EL2	R	R	R	R	R	N/R	R	R	R	R	R	R	R	R	N/R
	Electronics Development Laboratory	EL3	R	R	R	R	R	N/R	R	R	R	R	R	R	R	R	N/R
	Control Systems Development Laboratory	EL4	R	R	R	R	R	N/R	R	R	R	R	R	R	R	R	N/R
	Power Systems Development Laboratory	EL5	R	R	R	R	R	N/R	R	R	R	R	R	R	R	R	N/R
	Embedded Systems Development Laboratory	EL6	R	R	R	R	R	N/R	R	R	N/R	R	R	R	R	R	N/R
	Range Technology Development Laboratory	EL7	R	R	R	R	R	N/R	R	R	R	R	R	R	R	R	N/R

Category	Laboratory Name	Laboratory Identifier	1.4.1 Management	1.4.2 Chemical Hygiene Plan	1.4.3 Lab Safety Plan	1.4.4 Haz Waste Management	1.4.5 Safety Walkdowns	1.4.6 Eye Wash/ Safety Shower Inspections	1.4.7 Fire Inspections	1.4.8 Personal Protective Equipment (PPE)	1.4.9 OEM Maintenance	1.4.10 Support Equipment Documentation/ Identify Equipment Obsolescence	1.4.11 Prev. Maint. (non OEM)	1.4.12 Calibration	1.4.13 Procurement of Spares/ Supplies/ Consumables	1.4.14 Property Custodian	1.4.15 PVs
			Daily	12/yr	4/yr	Daily	Monthly	Weekly	4/yr	12/yr	Daily	Daily	Daily	Daily	12/yr	Daily	1/yr
Material Properties	Materials Failure Analysis Laboratory	MP1	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
	Electrical Failure Analysis Laboratory	MP2	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
	Mechanical Failure Analysis Laboratory	MP3	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
	Polymer Science and Technology Laboratory	MP4	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
	Corrosion Technology Laboratory	MP5	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
	Physical Testing and Analysis Laboratory	MP6	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
	Metrology Laboratory	MP7	R	R	R	R	R	N/R	R	R	R	R	R	R	R	R	N/R
Payloads	Flight Experiment Development Laboratory	PA1	R	R	R	R	R	R	R	R	N/R	R	R	R	R	R	N/R
Surface Systems	Lighting Testbed Laboratory	SS1	R		R	R	R	R	R	R	N/R	R	R	R	R	R	N/R
	Low Pressure Testbed Laboratory	SS2	R	R	R	R	R	R	R	R	N/R	R	R	R	R	R	N/R
	Micro and Molecular Biology Laboratory	SS3	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
	Controlled Environment Laboratory	SS4	R	R	R	R	R	R	R	R	N/R	R	R	R	R	R	N/R
	Water Processing Laboratory	SS5	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
	Air Revitalization Laboratory	SS6	R	R	R	R	R	R	R	R	N/R	R	R	R	R	R	N/R
Developmental Shops	Launch Equipment Test Facility (LETF) Shop	DS1	R	R	R	R	R	R	R	R	N/R	R	R	R	R	R	N/R
	Engineering Development Laboratory (EDL) Machine Shop	DS2	R	R	R	R	R	R	R	R	N/R	R	R	R	R	R	N/R
	Prototype Development Shop	DS3	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R

Category	Laboratory Name	Laboratory Identifier	1.4.1 Management	1.4.2 Chemical Hygiene Plan	1.4.3 Lab Safety Plan	1.4.4 Haz Waste Management	1.4.5 Safety Walkdowns	1.4.6 Eye Wash/ Safety Shower Inspections	1.4.7 Fire Inspections	1.4.8 Personal Protective Equipment (PPE)	1.4.9 OEM Maintenance	1.4.10 Support Equipment Documentation/ Identify Equipment Obsolescence	1.4.11 Prev. Maint. (non OEM)	1.4.12 Calibration	1.4.13 Procurement of Spares/ Supplies/ Consumables	1.4.14 Property Custodian	1.4.15 PVs
			Daily	12/yr	4/yr	Daily	Monthly	Weekly	4/yr	12/yr	Daily	Daily	Daily	Daily	12/yr	Daily	1/yr
NOTE: THE FOLLOWING CAPABILITIES WILL BE OPTIONS																	
IT/ Communications	Electromagnetic Interference Testing Laboratory	IT6	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
Physical Sciences	Chemical Sampling and Analysis Laboratory	PS9	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
	Component Cleaning and Refurbishment Laboratory	PS10	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
	NDE Laboratory (Institutional)	PS11	R	R	R	R	R	R	R	R	N/R	R	R	R	R	R	N/R
	NDE Laboratory (Shuttle)	PS12	R	R	R	R	R	R	R	R	R	R	R	R	R	R	N/R
Calibration	Standards, Electrical, Physical, and In-Situ Calibration	CA1	R	R	R	R	R	R	R	R	N/R	R	R	R	R	R	N/R

Legend	***R = Required***
	N/R = Not Required

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Laboratory Summary							
Laboratory Category	**Laboratory Names**	**Laboratory Identifier**	**Building**	**Customer***	**Maintenance**	**Operations**	**ESC Tenure**
IT/Communications	Experimental Imaging Laboratory	IT1	EDL	P/D	Contractor	Contractor	Duration
	Advanced Network Development Laboratory	IT2	EDL	P/D/I	Contractor	Contractor	Duration
	~~Fiber Optics and Communication Laboratory~~	~~IT3~~	~~EDL~~	~~P/D/I~~	~~Contractor~~	~~Contractor~~	~~Duration~~
	Spaceport Processing Systems Development Laboratory	IT4	SSPF	P/D	Contractor	Government	Duration
	~~Launch Control System (LCS) Laboratory~~	~~IT5~~	~~SSPF~~	~~P/D~~	~~Contractor~~	~~Blend~~	~~Transfer to EGLS in 2016(after FOC)~~
	Electromagnetic Interference Testing Laboratory	IT6	EML	P/I	Contractor	Blend	Transfer 2011 from IMCS/CAPPS
Physical Sciences	Applied Chemistry Laboratory	PS1	O&C & SLSL	P/D	Contractor	Blend	Duration
	Analytical and Biological Chemistry Laboratory	PS2	SLSL	P/D	Contractor	Blend	Duration
	Chemical Analysis Laboratory	PS3	O&C	P/D/I	Contractor	Government	Duration
	Cryogenics Test Laboratory	PS4	Cryo Building	P/D	Contractor	Blend	Duration
	Advanced Non-Destructive Evaluation (NDE) Laboratory	PS5	VAB	P/D	Contractor	Blend	Duration
	Applied Physics Laboratory	PS6	O&C	P/D	Contractor	Government	Duration
	Electrostatics and Surface Physics Laboratory	PS7	SLSL	P/D	Contractor	Blend	Duration
	Granular Mechanics and Regolith Operations Laboratory	PS8	SLSL	P/D	Contractor	Blend	Duration
	Chemical Sampling and Analysis Laboratory	PS9	Component Refurb & Chemical Analysis Facility	P/I	Contractor	Contractor	Transfer 2014 from ISC
	Component Cleaning and Refurbishment Laboratory	PS10	Component Refurb & Chemical Analysis Facility	P/I	Contractor	Contractor	Transfer 2014 from ISC
	NDE Laboratory (Institutional)	PS11	NDE Building	P/I	Contractor	Contractor	Transfer 2014 from ISC
	NDE Laboratory (Shuttle)	PS12	Hangar N	P/D	Contractor	Contractor	Transfer TBD from SPOC/MSFC
Electrical	Sensors and Transducers Development Laboratory	EL1	EDL	P/D	Contractor	Blend	Duration
	Instrumentation and Data Acquisition Development Laboratory	EL2	EDL	P/D	Contractor	Blend	Duration
	Electronics Development Laboratory	EL3	EDL	P/D/I	Contractor	Blend	Duration
	Control Systems Development Laboratory	EL4	EDL	P/D	Contractor	Blend	Duration
	Power Systems Development Laboratory	EL5	EDL	P/D	Contractor	Blend	Duration
	Embedded Systems Development Laboratory	EL6	EDL	P/D	Contractor	Blend	Duration
	Range Technology Development Laboratory	EL7	EDL	P/D	Contractor	Blend	Duration
Material Properties	Materials Failure Analysis Laboratory	MP1	O&C	P/I	Contractor	Government	Duration
	Electrical Failure Analysis Laboratory	MP2	O&C	P/I	Contractor	Government	Duration
	Mechanical Failure Analysis Laboratory	MP3	O&C	P/I	Contractor	Government	Duration
	Polymer Science and Technology Laboratory	MP4	SLSL	P/D/I	Contractor	Blend	Duration
	Corrosion Technology Laboratory	MP5	SLSL	P/D/I	Contractor	Blend	Duration
	Physical Testing and Analysis Laboratory	MP6	O&C	P/D/I	Contractor	Government	Duration
	Metrology Laboratory	MP7	O&C	P/I	Contractor	Government	Duration
Payloads	Flight Experiment Development Laboratory	PA1	SLSL	P/D	Contractor	Blend	Duration

Laboratory Category	Laboratory Names	Laboratory Identifier	Building	Customer*	Maintenance	Operations	ESC Tenure
Sustainable Systems	~~Lighting Testbed Laboratory~~	~~SS1~~	~~SLSL~~	~~P/D~~	~~Contractor~~	~~Blend~~	~~Duration~~
	~~Low Pressure Testbed Laboratory~~	~~SS2~~	~~SLSL~~	~~P/D~~	~~Contractor~~	~~Blend~~	~~Duration~~
	Micro and Molecular Biology Laboratory	SS3	SLSL	P/D	Contractor	Blend	Duration
	Controlled Environment Laboratory	SS4	SLSL	P/D	Contractor	Blend	Duration
	Water Processing Laboratory	SS5	SLSL	P/D	Contractor	Blend	Duration
	Air Revitalization Laboratory	SS6	SLSL	P/D	Contractor	Blend	Duration
Developmental Shops	Launch Equipment Test Facility (LETF) Shop	DS1	LETF	P/D	Contractor	Blend	Duration
	Engineering Development Laboratory (EDL) Machine Shop	DS2	EDL	P/D	Contractor	Blend	Duration
	Prototype Development Shop	DS3	Prototype	P/D/I	Contractor	Government	Duration
Calibration	There are 26 laboratories underneath the general Standards, Electrical, Physical, and In-Situ Calibration groupings. For breakdown of associated Calibration labs, refer to "Calibration" worksheet with "Breakdown of Calibration Laboratories" data.	CA1	CIF/PMEL	P/I	Contractor	Contractor	Transfer 2014 from ISC

* P - Program Support
D - Development/Research
I - Institutional Support

Breakdown of Calibration Laboratories				
	Standards	**Physical**	**Electrical**	**In-Situ Calibration**
Calibration	Electrical Standards Lab	Force	Photometric, Radiographic, Fiber Optic	Pressure Calibration
	Physical Standards	Gas Flow	Scopes&Analyzers	Torque Calibration
		Particle Counters	Vibration	Mass Calibration
		Hydraulic Flow	Microwave	Optics Calibration
		Mass	Meters	Force Calibration
		Pressure&Vacuum	Sounds	Electrical Calibration
		Temperature&Humidity		Gas&Chemical Calibration
		Gas&Chemical		
		Dimensional		
		Optics		
		Torque		

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Advanced Network Development Laboratory (IT2)

The Advanced Network Development Laboratory has led the research, analysis, design, development, and deployment of all next-generation telecommunications transmission systems for Kennedy Space Center (KSC). The laboratory provides a testbed consisting of past, current, and next-generation systems combined with technical expertise, thus enabling research, analysis, and development activities directed at obtaining maximum efficiency from KSC's current communications investment, while providing the appropriate and optimal level of technology infusion. Laboratory personnel can support research and analysis in virtually any communications environment, including Ethernet, T-Carriers, synchronous optical network, and asynchronous transfer mode. This laboratory is uniquely suited for testing and evaluating industry products for use at KSC in a testbed that accurately reflects the KSC operating environment and eliminates costs associated with the late identification of incompatibilities.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	N/R	R	N/R	R	N/R	R	N/R	R	R	N/R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

<u>1.4.13</u> <u>Spares/Supplies Consumables Management</u>

Consumables/Laboratory supplies include the following types of items:

- Cables
- Connectors
- Patch cables

Advanced Non-Destructive Evaluation (NDE) Laboratory (PS5)

The KSC Advanced NDE Laboratory supports the development and operations of advanced non-destructive evaluation techniques such as laser shearography (vacuum chamber), portable laser shearography, flash thermography, eddy current, and ultrasonic testing for flight hardware and ground systems equipment evaluation. These advances are intended for use in the enhancement of methods and techniques to support multiple NASA programs at KSC.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	N/R	R	N/R	R	N/R	R	N/R	R	R	R	R	R	R	N/R

R= Required
N/R = Not Required

Air Revitalization Laboratory (SS6)

The Air Revitalization Laboratory develops technology for scrubbing trace Volatile Organic Compounds out of the air. Air revitalization requires regenerable technologies with low mass, power and volume. Planned carbon dioxide and water vapor removal systems will utilize solid amines or zeolites. This laboratory has a unique test bed capable of studying a number of commercial, solid amine and zeolite sorbents for removing volatile organic compounds. Further work will concentrate on developing an ammonia monitoring approach during use of solid amine sorbents

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	N/R	R	R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- General supplies (such as pipettes, tips, poly bottles, weighing dishes, bulbs, brushes, absorbent paper, pH paper, wipes, filters, cables, and syringes)
- Calibration gases
- Clamps and small tools
- Fittings and regulators
- Glassware
- Laboratory carts
- Safety supplies (such as laboratory coats, glasses, and gloves)
- Chemicals and permeation devices

Analytical and Biological Chemistry Laboratory (PS2)

The Analytical and Biological Chemistry Laboratory performs qualitative and quantitative analyses of non-volatile organics, volatile organics, elements and ions. This laboratory performs routine analyses of samples to categorize the level of chemical interactions which occur during laboratory investigations. Specifically, this laboratory function addresses the questions of (1) what and how much of a substance or blend of substances is in the sample, (2) how environmental conditions or physical-chemical / biological processes affect its presence and (3) how do chemical signals affect the functions of plants, biological and engineering systems.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.13 Spares/Supplies Consumables Management
Consumables/Laboratory supplies include the following types of items:

- General supplies (such as pipettes, tips, poly bottles, weighing dishes, bulbs, brushes, absorbent paper, pH paper, wipes, filters, cables, and syringes)
- Calibration gases
- Chromatography columns and fittings
- Clamps and small tools
- Fittings and regulators
- Glassware
- Laboratory carts
- Safety supplies (such as laboratory coats, safety glasses, and gloves)
- Chemicals and permeation devices

Applied Chemistry Laboratory (PS1)

The Applied Chemistry Laboratory develops technology for toxic-vapor detection, chemical scrubbers for toxic wastes, *in situ* resource utilization processes, microencapsulation of materials for space applications, hypergolic-fuel dosimetry, hydrogen detection, self-healing wire insulation, minimally intrusive repair methods for electrical wiring, and environmental remediation. Laboratory staff employs expert skills in polymer chemistry, analytical chemistry, physical chemistry, fluorescence, organic synthesis, electrochemistry, capacitance, transport phenomena, analytical-instrument development and testing, sensors, fabrication, and machining. Other laboratory projects include the development of new polyimide-based powder coating systems, production of oxygen from carbon dioxide by electrolysis in ionic liquids, and development of new composite conductors. Work has also been performed on the production of a nontoxic, non-global-warming, non-ozone-depleting fire-extinguishing agent. The laboratory provides research and evaluation for environmental remediation, especially groundwater remediation technologies (permeable reactive barriers and emulsion-based cleanup technologies).

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	S	R	R	R	R	R	R	R	S	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.3 Laboratory Safety Plan

The Contractor shall maintain lab opening/closing records near the entrance to the wet lab area. To ensure proper safety procedures are followed, the contractor shall ensure that proper entrance/exit procedures for the wet lab area (O&C Building, rooms 2212 and 2214) are posted on the doors to this facility. These procedures shall include points of contact and phone numbers of key personnel in case of emergencies

1.4.11 Preventative, Routine, and Reparative Maintenance
The Contractor shall maintain the following facilities, systems and equipment as indicated:

1. The Contractor shall maintain reverse osmosis water system:

Applied Chemistry Laboratory (PS1)

A reverse osmosis system is used to generate pure water for analytical use in the laboratory. A series of carbon filters, ionic exchange resin cylinders, and a polishing cylinder purify city water prior to it being piped into the system for final purification. These cylinders are periodically changed out and recharged. A spare set is always kept to ensure continuous operation of the system.

2. The Contractor shall maintain the gaseous nitrogen supply system:
   The gaseous nitrogen supplied to the laboratory comes from the O&C main supply. A two-stage regulator panel in O&C 1212 takes the house pressure of approximately 3000 psig down to 120 psig for use in the laboratory.

3. The Contractor shall maintain laboratory air system:
   The laboratory air needs to be clean and dry. In the mechanical room of the O&C, a refrigerated dryer and Deltech molecular sieve dryer are physically plumbed into a compressor air outlet. The Deltech molecular sieve cartridges are periodically changed out as they are used and replenished.

4. The Contractor shall maintain Barnstead nanopure de-ionized water system:
   Many of the experiments that are completed in the laboratory require high purity water. Water system cartridges are changed as necessary to maintain water purity.

5. The Contractor shall maintain hypergolic fuel vapor standards:
   This effort shall be completed by performing the following subtasks.

   - The Contractor shall perform periodic maintenance of permeation sources
     The Contractor shall perform periodic maintenance of permeation sources (1 - 2 times/yr.) by delivering to the institutional services contractor for filling.

   - The Contractor shall perform maintenance of low concentration standards
     The Contractor shall perform maintenance of low concentration standards (4 times/yr) to include monomethylhydrazine (MMH) and hydrazine (HZ) standards. The low concentration standards (10 ppb - 1 ppm) are verified by scrubbing the vapor samples into a dilute solution of sulfuric acid. This solution is then analyzed using coulometry to obtain the true concentration of the vapor sample.

Applied Chemistry Laboratory (PS1)

- The Contractor shall perform maintenance of high concentration standards
  The Contractor shall perform maintenance of high concentration standards (4 times/yr.) to include MMH and HZ. The high concentration standards (1 ppm - tens of ppm) are verified by scrubbing the vapor samples into a dilute solution of sulfuric acid. This solution is then analyzed using coulometry to obtain the true concentration of the vapor sample. Monthly vapor checks of undiluted vapor standards (base concentration scrubs) are completed by the laboratory. The scrubbing data on the undiluted vapor standards is kept and periodically processed to ensure reliability.

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- General supplies (such as pipettes, tips, poly bottles, weighing dishes, bulbs, brushes, absorbent paper, pH paper, wipes, filters, cables, and syringes)
- Calibration gases
- Chromatography columns and fittings
- Clamps and small tools
- Fittings and regulators
- Glassware
- Safety supplies (such as laboratory coats, glasses, and gloves)
- Chemicals and permeation devices

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Applied Physics Laboratory (PS6)

The Applied Physics Laboratory develops technology solutions to operational problems involving leak detection, fire detection, flight hardware alignment and positioning, optical detection and measurement, non-destructive evaluation technologies including X-ray, Acoustic Emission, Infra red (IR) Thermography and other technologies. The laboratory develops bench top demonstrations and collaborates with the Prototype Development Shop and the Contractor to produce field test equipment and ground support equipment (GSE).

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	N/R	R	N/R	R	N/R	R	R	R	R	R	R	R	R	N/R

R= Required
N/R = Not Required

Chemical Analysis Laboratory (PS3)

The Chemical Analysis Laboratory performs chemical identification of matter for all states (gas, liquid, and solid) in quantities down to micrometer-sized samples and investigations necessary to understand and solve chemical problems associated with the selection and application of materials for flight hardware, ground support equipment, and facility systems. This laboratory supports all KSC facilities, other NASA Centers, and other Government agencies in the analysis of samples for major and trace components; elemental, molecular, and surface composition; development of new methods of environmental testing; specialized analysis; and short-term chemical research and development.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- General supplies (such as pipettes, tips, poly bottles, weighing dishes, bulbs, brushes, absorbent paper, pH paper, wipes, filters, cables, and syringes)
- Calibration gases
- Chromatography columns and fittings
- Clamps and small tools
- Fittings and regulators
- Glassware
- Laboratory carts
- Safety supplies (such as laboratory coats, glasses, and gloves)
- Chemicals and permeation devices

Chemical Sampling and Analysis Laboratory (PS9)

The Chemical Sampling and Analysis Laboratory provides routine sampling and analytical support for NASA at the Kennedy Space Center and USAF at the Cape Canaveral Air Force Station to support the institution and various programs. A variety of sample matrices, including high pressure gases, hypergolic fuels and oxidizer, cryogens, assorted fluids, and environmental samples are collected and analyzed to various NASA and military procurement and usage specifications and EPA requirements. The laboratory occupies approximately 30,000 sq. ft. comprised of several separate analytical areas including Gas, Gas Chromatography/Mass Spectrometry, Metals, Fuel, Oxidizer, NVR, Particulate and Wet Laboratories. A wide range of services are performed though the Toxic Vapor Detection Laboratory involving instrument calibrations and repairs, and material compatibility and permeation testing. The capabilities for in place/onsite analysis of certain gases and fluids and mercury spill support are also maintained. The Laboratory is ISO 14001, AS 9100, and NADCAP certified. In addition, the Laboratory maintains State of Florida Department of Health/NELAC certification for sampling and analysis of environmental samples for EPA requirements and hazardous waste determinations.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

<u>1.4.13</u> <u>Spares/Supplies Consumables Management</u>

Consumables/Laboratory supplies include the following types of items:

- General supplies (such as pipettes, tips, poly bottles, weighing dishes, bulbs, brushes, absorbent paper, pH paper, wipes, filters, cables, and syringes)
- Calibration gases
- Chromatography columns and fittings
- Clamps and small tools
- Fittings and regulators
- Glassware

Chemical Sampling and Analysis Laboratory (PS9)

- Laboratory carts
- Safety supplies (such as laboratory coats, glasses, and gloves)
- Chemicals and permeation devices

Component Cleaning and Refurbishment Laboratory (PS10)

The Component Cleaning and Refurbishment Laboratory provides cleaning and refurbishment for NASA programs and the KSC institution. Aerospace hardware must meet exacting performance specifications and the laboratory supports hardware processing. Component Refurbishment capabilities include chemical cleaning and surface treatment (e.g., passivation, pickling, electropolishing, etc.), cleaning levels ranging from visual / commercial clean to the extremely stringent 10A, refurbishment of functional components to a "like new" condition, clean room operations (Class 100 / M3.5), functional testing of components, both hydraulically (0-6000 psi) and pneumatically (0-14,000 psi), cleaning and certification of chemical sampling equipment, and modification of fluid system components. The Component Cleaning and Refurbishment Laboratory maintains AS9100 Quality Systems certifications. All component refurbishment work is performed per approved procedures. Contractor engineering maintains an active file of over 4300 Intermediate and Depot Maintenance Manuals (IDMM's) for various components / hardware. New IDMMs are generated / updated as required. A Chemical Cleaning and Testing Manual of over 5000 pages is also maintained. The laboratory develops environmentally friendly cleaning processes that eliminate ozone depleting solvents. The Laboratory maintains an ISO 14001 certified Environmental Management System and is certified by the National Aerospace and Defense Contractors Accreditation Program (NADCAP) for Chemical Processing.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- General supplies (such as pipettes, tips, poly bottles, weighing dishes, bulbs, brushes, absorbent paper, pH paper, wipes, filters, cables, and syringes)
- Calibration gases
- Chromatography columns and fittings

Component Cleaning and Refurbishment Laboratory (PS10)

- Clamps and small tools
- Fittings and regulators
- Glassware
- Laboratory carts
- Safety supplies (such as laboratory coats, glasses, and gloves)
- Chemicals and permeation devices

Controlled Environment Laboratory (SS4)

The Controlled Environment Laboratory develops technology for ground and space applications through the control of air temperature, relative humidity, spectral quality and quantity, and carbon dioxide concentration. The laboratory consists of a state-of-the-art controlled-environment chamber facility and associated laboratories to conduct basic and applied research with emphasis on the support of both ground and space applications. The Lighting Testbed develops technology for new light fixtures by measuring functional photometric parameters…using a two-axis goniometer. The Low Pressure Testbed develops and validates technology for new sensors and pressure dependent systems…from instrument packages. Controlled environmental parameters are readily modified to support a wide range of user-defined environmental control requirements. The laboratory also develops and maintains a centralized command, monitoring and data system with an associated database and caution and warning notification capabilities.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	N/R	R	R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- General supplies (such as pipettes, tips, poly bottles, weighing dishes, bulbs, brushes, absorbent paper, pH paper, wipes, filters, cables, and syringes)
- Calibration gases
- Clamps and small tools
- Fittings and regulators
- Laboratory carts
- Safety supplies (such as laboratory coats, glasses, and gloves)
- Chemicals and permeation devices
- Glassware

Control Systems Development Laboratory (EL3)

The Control Systems Development Laboratory develops, designs, prototypes, tests, and validates automated programmable logic control (PLC) systems for ground support equipment (GSE). It provides PLC software and Supervisory Control and Data Acquisition (SCADA) applications for system monitoring and control. In particular, the Control Systems Development Laboratory has expertise and infrastructure for developing and testing PLC-based systems.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	N/R	R	R	R	R	R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- Electrical/Electronic Components (wiring, terminal blocks, batteries, etc.)
- Cables
- Mechanical Components (hinges, switches, belts, etc.)
- Hand Tools & Components (drill bits, saw blades, etc.)

Corrosion Technology Laboratory (MP5)

The Corrosion Technology Laboratory provides corrosion expertise to NASA, its partners in other Government entities, private industry, and academia. The Corrosion Technology Laboratory develops corrosion control technologies and detection methods, evaluates materials and coatings, investigates material behavior, and recommends approaches to mediate corrosion activity. This work is performed for materials used in aerospace flight hardware, ground support equipment, and related Kennedy Space Center (KSC) facilities. The laboratory consists of an atmospheric Beach Corrosion Test Site, an Electrochemical and General Corrosion Testing Facility, an Environmental Testing Facility, a Photodocumentation Facility, a Seawater Immersion Facility, a Coatings Application Facility, and a complete weather station to support data analysis. The laboratory also has complete network connectivity for real-time data acquisition and Internet video.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	S	R	R	R	R	R	R	S	S	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.4 Hazardous Waste Management
The Contractor shall maintain satellite waste areas

1.4.11 Preventative, Routine, and Reparative Maintenance
The Contractor shall maintain the salt fog chamber. Maintenance of this chamber in terms of water supply, internal test stands, and electronic hardware will be performed on a quarterly basis to ensure proper operability for experiments. Appropriate filters and chemicals needed for system operation will be identified and kept on-hand for use in various projects.

The Contractor shall maintain the acidic salt fog chamber. The Contractor shall perform maintenance to ensure proper operability of the chamber for experiments.

The Contractor shall maintain the Beach Corrosion Test Site data acquisition system. The Contractor shall perform maintenance and upgrades to the weather station. The Contractor shall perform regular maintenance activities for the identified beach

Corrosion Technology Laboratory (MP5)

corrosion facility data acquisition systems. These activities mostly involve periodic checks and parts replacement to assure proper system operations and integrity.

The Contractor shall maintain the pressure washer in working condition through periodic checking of all components and replacement of worn items.

The Contractor shall perform coupon stand refurbishment. The Beach Corrosion Test Site contains several coupon stands that are used to hold experimental hardware. These stands will be checked on a monthly basis for repair requirements such as repainting, welding, or need for replacement of individual stands.

1.4.12 Calibration

The Contractor shall calibrate coupons at the Beach Corrosion Test Site. Carbon steel coupons have been placed at the BCTS to calibrate the corrosion rate of the site. The data from these sets of coupons will validate previously obtained corrosion rates.

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- General supplies (such as pipettes, tips, poly bottles, weighing dishes, bulbs, brushes, absorbent paper, pH paper, wipes, filters, cables, and syringes)
- Calibration gases
- Electrochemical equipment
- Clamps and small tools
- Fittings and regulators
- Glassware
- Laboratory carts
- Safety supplies (such as laboratory coats, glasses, and gloves)
- Chemicals and permeation devices
- Supplies for photo-documentation

Cryogenics Test Laboratory (PS4)

The Cryogenics Test Laboratory provides a quick response for cryogenic troubleshooting, and test and development capability to support Kennedy Space Center (KSC) processing and launch activities. The laboratory also performs focused research and development in areas such as thermal insulation systems, cryogenic components test and evaluation, low-temperature applications, and propellant servicing systems to increase operational safety and lower system life cycle costs. The objectives of this laboratory are to develop materials, produce new technology, and promote engineering for energy-efficient storage, transfer, and use of cryogens and cryogenic propellants on earth and in space. The Cryogenics Test Laboratory maintains a large cadre of external partnerships with other government agencies, commercial vendors and academia to promote technology development and improve the state of the art in materials, components, sub systems and best practices in the field of cryogenics.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	N/R	R	S	S	R	R	N/R

R = Required
N/R = Not Required
S = Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.11 Preventative, Routine, and Reparative Maintenance

The Contractor shall perform preventative and corrective maintenance on laboratory support systems and equipment. The preventative maintenance program is divided into two major categories; facility systems and special test systems. These systems represent significant infrastructure or test assets which will be maintained in accordance with a preventative maintenance instruction. Maintenance will be performed on laboratory equipment, which is typically commercially available, in accordance with manufacturer recommendations. Vendor literature will be used to supplement these maintenance efforts. The contractor shall develop a maintenance plan and maintained monthly to established tasks/frequency.

1.4.12 Calibration

The contractor shall coordinate equipment calibration required for laboratory operations to preclude interruptions to testing. Laboratory personnel shall be responsible for reviewing the equipment calibration schedule and ensuring that items are submitted for calibration on time. Most calibrations will be performed within KSC calibration facilities, however, some laboratory items may periodically need to be returned to the manufacturer for calibration. Calibration records and all other laboratory-generated records will be maintained per NHB 1441.1B Records Management requirements.

Engineering Development Laboratory (EDL) Machine Shop (DS2)

The Machine Shop in the Engineering Development Laboratory (EDL) performs hardware fabrication and modifications in support of laboratories in the EDL. The shop supports development projects with quick turnaround fabrication of prototypes and other custom parts needed to support various development and testing activities. Shop personnel are skilled technicians trained in various machining processes, including sheet metal fabrication.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	N/R	R	R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.13 Spares/Supplies Consumables Management
Consumables/Laboratory supplies include the following types of items:

- General maintenance supplies (such as cutters, blades, bits)
- Safety supplies (such as laboratory coats, safety glasses, and gloves)

Electrical Failure Analysis Laboratory (MP2)

The Electrical Failure Analysis Laboratory performs independent failure analysis investigations to determine the root cause of ground support equipment (GSE) and flight hardware electrical and electronic component failures. This work is performed in support of multiple NASA programs. This analysis service involves both nondestructive parametric evaluations and destructive physical analysis. To support the investigations, the laboratory maintains a real-time radiography system, digital photography and microscopy documentation capability, and infrared (IR) and standard and high-speed videography to document both field conditions and laboratory assessments of the failed components. The laboratory maintains a wide variety of electronic parametric instrumentation, providing waveform analysis for both AC and DC components/devices. Additionally the laboratory develops automated data acquisition and control systems which are often used in conjunction the laboratory's simulation testing equipment and capability, or as stand-alone test systems.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	S	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.11 Preventative, Routine, and Reparative Maintenance

The Contractor shall maintain the supplies of both filled and empty liquid nitrogen dewars and gaseous nitrogen k-bottles needed for operations. The Contractor shall ensure that the appropriate number of bottles with commodity is available for equipment use by calling in a work order to the institutional provider.

The Contractor shall clean, maintain and lubricate the X-ray vacuum pumps. The vacuum system provides the vacuum for the X-ray inspection tube head and requires periodic replenishment of the vacuum oil and periodic maintenance. The system has spare pumps to be used as replacement during maintenance at the institutional provider. The Contractor shall check vacuum pumps and send for service as necessary.

The Contractor shall maintain the compressed air system. The Contractor shall change out appropriate filters and perform air quality and cleanliness tests annually or if in need of replacement.

Electrical Failure Analysis Laboratory (MP2)

The Contractor shall maintain all optical microscopes and camera lenses. The Contractor shall use a fine, dry, grease-free brush to remove dust from all microscope eye pieces at least once a month. The Contractor shall use a linen or leather cloth moistened with alcohol to clean the surfaces of all the microscopes and digital photography lenses.

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- General maintenance supplies (such as gloves, tech wipes, beakers, glassware, cleaning agents, cotton balls, cotton swabs, etc)
- Cutting tools and blank printed circuit boards
- Basic discrete electronic components (resistors, capacitors, inductors, fuses, etc.)
- Test leads (coax and banana plugs and jacks)
- Dissection cutting lubricant
- Audio/Video connectors, crimp connectors, solder supplies and computer media supplies (DVDs, CDs, etc).
- Microscope light bulbs
- Microscopy calibrated scales, sample holders
- Sampling prep items (tweezers, brushes, exacto knives, photography markers, photography scales, etc)
- Safety supplies (such as laboratory coats, clean room hoods face masks and smocks, glasses, face shields and gloves)

Electrostatics & Surface Physics Laboratory (PS7)

The Electrostatics and Surface Physics Laboratory (ESPL) at the NASA Kennedy Space Center is dedicated to investigations in electrostatics and surface physics problems with applications for space flight and planetary exploration. The laboratory is currently carrying out electrostatic analyses and materials characterization to assist in the detection, mitigation, and prevention of electrostatic charge generation on space flight hardware and ground support equipment. The laboratory is also involved in dust mitigation efforts for Lunar and Martian exploration.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- General maintenance supplies (such as weighing dishes, bulbs, brushes, absorbent paper, wipes, filters, cables, and miscellaneous electronic components)
- Clamps and small tools
- Fittings and regulators
- Glassware
- Laboratory carts
- Safety supplies (such as laboratory coats, safety glasses, and gloves)
- Chemicals

Electromagnetic Interference Testing (IT6) Laboratory

The Electromagnetic Effects Laboratory (EML) provides electromagnetic compatibility testing and troubleshooting, electromagnetic interference resolution, payload telemetry reradiating service, mobile and Center-wide fixed radio frequency (RF) surveillance, and general support in the field of electromagnetic physics including electromagnetic interference (EMI) testing in anechoic chambers. The EML includes a test console that is manned during major tests and is the focal point for coordinating field test and mobile RF surveillance activities. The EML includes two shielded enclosures and RF test apparatus necessary to perform compliance testing.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- Cables
- Connectors
- Patch cables
- Miscellaneous fasteners

Electronics Development Laboratory (EL3)

The Electronics Development Laboratory provides design, development, assembly, testing, and integration of instrumentation, electronic systems and components used for a broad spectrum of applications. These systems range from flight components, test equipment, prototypes and ground support equipment (GSE). The laboratory provides access to a wide range of state-of-the-art test equipment including an electromagnetic interference (EMI) chamber, as well as computer-aided design (CAD) software, including AutoCAD, AutoCAD Electrical, LabVIEW, and Pro/ENGINEER, and wide-format color and black and white (B&W) printing and scanning capability. The laboratory encompasses analog, digital, and mixed-signal design; digital signal processing (DSP); advanced imaging, mathematical modeling, Field Programmable Gate Arrays (FPGA) design, Printed Circuit Board (PCB) design & testing, surface mount technology electro-magnetic compatibility. The laboratory develops electronic systems from conception through prototyping and often culminating in small-scale production. Laboratory services include: Data acquisition systems design, DSP algorithm and methodology development, mathematical modeling and computer simulation, design of analog, digital, and mixed-signal electronic circuitry, electronics assembly (through-hole and fine-pitch surface-mount), printed circuit board design, assembly, and testing, schematic capture, surface-mount and through-hole circuit board assembly, and special instrumentation development. In addition, the laboratory provides area for development activities with access to test equipment and fabrication/rework capability, computers, printers, support software, and network connections to CAD/CAE servers, collaboration among the design engineers, develop, test, and troubleshoot custom or commercial off-the-shelf (COTS) systems or subsystems.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	N/R	R	R	R	R	S	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

<u>1.4.11</u> <u>Preventative, Routine, and Reparative Maintenance</u>

The Contractor shall maintain the following:

- Backups on CAD Stations will be performed at least weekly, and more often with elevated workloads.
- Solder stations require inspection to maintain electrostatic discharge (ESD) certification. Stations require cleaning at least weekly.
- Printed Circuit Board Milling Machine calibration

Electronics Development Laboratory (EL3)

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- Filters, tips, fiber-optic light sources, cleaning solvents, solder, flux
- Electrical/Electronic Components, Wiring, Batteries, LCD counters, ADC's, DSP's, etc.
- Hand Tools & Components
- Printed Circuit Board Milling Machine tooling, consumables and nitrogen supplies.
- IT Supplies and Components (cables, media, etc.)
- Safety Supplies, PPE, Signs & Labels
- Cleaning Supplies (gloves, filters, contract, etc.)
- General Maintenance Supplies
- Chemicals/Chem. Supplies (testers, acids, bases, etc.)

Embedded Systems Development Laboratory (EL6)

The Embedded Systems Development Laboratory provides Kennedy Space Center (KSC) with development, debugging, testing, integration, validation and sustaining capabilities in the areas of embedded software, firmware, health management algorithms (failure detection, isolation, and recovery), prognostics algorithms, embedded intelligence and plug-and-play capabilities for transducers and sensors, data acquisition and control, and other ground operations subsystems at KSC. The Embedded Systems Development Laboratory is composed of two physical laboratories: the Systems Health Management Laboratory and Data Acquisition Laboratory.

The Systems Health Management Laboratory provides technical expertise in the field of ground and vehicle health management, diagnostics, and prognostics. The laboratory designs, develops, and implements systems and software algorithms to provide Ground Support Equipment (GSE) the ability to predict, detect, diagnose, isolate, and recover from faults and failures during processing and launch. The Laboratory has complete custom design, development, prototyping, and testing capabilities, as well as extensive software development and modeling tools capabilities. Among the Laboratory's capabilities are design of ground systems health management (requirements generation, architecture formulation, software development and implementation), FDIR algorithms development using software development tools such as TEAMS, SHINE, IMS, and MathLab, mathematical modeling and simulation, and ground operations health Prognosis/Diagnosis.

The Systems Health Management Laboratory, together with the Data Acquisition Laboratory, is also involved in the design and development of intelligent devices (sensors and actuators with embedded intelligence), capable of continuously assess their operation for failure or degradation (diagnostics/prognostics). Laboratory supports the development of hardware and software algorithms to enhance the reliability and reduce maintainability costs of instrumentation systems and GSE. Among the Laboratory's capabilities are digital signal processing intelligent algorithms and methodology development, special Instrumentation systems design and development, development of plug-and-play capabilities for intelligent devices, and specialized software code development.

The embedded software portion of the Data Acquisition Laboratory provides technical expertise in embedded code development, software algorithms development, firmware development, and specialized communication protocols development for transducers, signal conditioners, data acquisition and instrumentation systems at KSC. The laboratory provides design, development and debugging, testing and integration, validation and sustaining expertise to GSE systems at KSC. The Laboratory has complete custom design, development, prototyping, and testing capabilities, as well as extensive software development and debugging capabilities. Among the Laboratory's capabilities are digital signal processing code composer and debugger, microprocessors development tools, simulation tools, and programming languages and development tools.

Embedded Systems Development Laboratory (EL6)

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	N/R	R	R	N/R	R	S	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.11 Preventative, Routine, and Reparative Maintenance
The contractor shall maintain the supplies of both filled and empty liquid nitrogen dewars and gaseous nitrogen k-bottles needed

1.4.13 Spares/Supplies Consumables Management
Consumables/Laboratory supplies include the following types of items:

- Electrical/Electronic Components, Wiring, Batteries, displays, etc.
- Hand Tools & Components such as drill bits, saw blades, etc.
- IT Supplies and Components (cables, media, etc.)

Experimental Imagery Laboratory (IT1)

The Experimental Imaging Laboratory explores current and emerging imaging technologies and characterizes camera, lens, recorder, and tracking methods. The laboratory is a dynamic mixture of field-deployable imaging assets and fixed-location test equipment. Laboratory engineers perform experiments in a controlled environment and compare performance with a field setting. The laboratory staff reflects a mixture of expert backgrounds in image analysis, comprehensive data collection, video engineering, and complex system integration to apply imaging capabilities to tracking and network systems. Rapidly evolving, high speed imaging systems require an extended understanding when attempting to evaluate end-to-end configurations. In addition, recording methods that take advantage of various image compression techniques need to be studied and compared for full-system compatibility and performance. The Experimental Imaging Laboratory provides a testbed for benchmarking those technologies to what is currently available. This valuable service offers direction on practical and cost-effective choices for imaging hardware of all varieties (high definition, high speed, non-visible spectrum) and on choosing the most capable methods to deploy these devices and to acquire the best available images for current and future programs.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	N/R	R	N/R	R	R	N/R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- Cables
- Connectors
- Patch cables

~~Fiber Optics and Communication Laboratory (IT3)~~

~~The Fiber Optics and Communication Laboratory leads the research, analysis, design, development, and deployment of all fiber-optic-based cabling systems used for communications at Kennedy Space Center (KSC), including the conversion, integration, and deployment of digital video systems for the KSC Operational Television and Broadband Communications Distribution System television systems. The laboratory provides a testbed and technical expertise enabling maximum efficiency from current investment in fiber optics and video systems. The laboratory can support research and analysis in virtually any fiber-optic and video technology, including wavelength division multiplexing techniques, cabling technology, free-space optical systems, and high-definition and other digital video systems.~~

~~Laboratory maintenance shall include the following work from the indicated PWS sections:~~

~~1.4.1~~	~~1.4.2~~	~~1.4.3~~	~~1.4.4~~	~~1.4.5~~	~~1.4.6~~	~~1.4.7~~	~~1.4.8~~	~~1.4.9~~	~~1.4.10~~	~~1.4.11~~	~~1.4.12~~	~~1.4.13~~	~~1.4.14~~	~~1.4.15~~
~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~N/R~~	~~R~~	~~N/R~~	~~R~~	~~R~~	~~N/R~~	~~R~~	~~S~~	~~R~~	~~N/R~~

~~R= Required~~
~~N/R = Not Required~~
~~S= Specialized requirements in addition to section 1.4~~

~~Specialized Requirements:~~

~~1.4.13 Spares/Supplies Consumables Management~~
~~Consumables/Laboratory supplies include the following types of items:~~

- ~~Cables~~
- ~~Connectors~~
- ~~Patch cables~~

This lab is being removed from the scope of the ESC – per mod 46 dated May 25, 2012

Flight Experiment Development Laboratory (PA1)

The Flight Experiment Development Laboratory helps scientists develop unique equipment for their experiments into Space Shuttle and/or International Space Station payloads. Its primary areas of responsibility are payload mission management and payload engineering. Payload mission management responsibilities include planning, integration, and operation of the payload, including safety analysis, astronaut training, and in-flight mission monitoring. Payload engineering responsibilities include the design, fabrication, testing, certification, and sustaining engineering of the payload flight hardware. The laboratory has three primary facility resources: the Experiments Monitoring Area, the Orbiter Environmental Simulator, and the bonded storage area. The laboratory provides real-time communications support for flight experiments; the Orbiter Environmental Simulator mimics spaceflight temperature, humidity, and carbon dioxide environment; and the bonded storage area is available both pre- and postflight.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	N/R	R	R	R	R	R	N/R

R= Required
N/R = Not Required

Granular Mechanics and Regolith Operations Laboratory (PS8)

The Granular Mechanics and Regolith Operations Laboratory studies the mechanics of materials in a launch pad environment, especially the mechanics of soil at Lunar and Martian spaceports; how to excavate the soil to prepare berms, landing pads, and roads; how to model the blowing of soil or other materials in a rocket exhaust plume to predict the blast effects. It also develops technologies for handling Lunar and Martian regolith, including excavator technologies, pneumatic transport of soil, and magnetic handling of soil. It studies the basic physics and geology of Lunar and Martian soil in order to support soil-handling technologies, including the particle sizing, particle shapes, bulk mechanical properties of the soil, soil compaction, field sampling technologies, and laboratory testing protocols.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	S	R	R	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.11 Preventative, Routine, and Reparative Maintenance

The contractor shall provide preventative maintenance, inspection, and repairs for the lunar regolith testbed to include necessary modifications to maintain operability and compatibility with associated computer, software, electrical and other systems. The contractor shall make any modifications to the lunar regolith testbed necessary to ensure compliance with all safety and health requirements.

The contractor shall perform routine cleaning of the lunar regolith testbed and surrounding areas to ensure that dust is contained and does not migrate, that the walls of the chamber remain transparent, and that dust does not jam mechanisms or filters in the chamber. Contractor personnel shall perform daily/weekly housekeeping practices for the lunar regolith testbed and surrounding areas and ensure the testbed is kept in an organized, functional and operational condition. Filters, tacky mats, etc. shall be cleaned and/or replaced as needed.

Instrumentation and Data Acquisition Development Laboratory (EL2)

The Instrumentation and Data Acquisition Development Laboratory provides Kennedy Space Center with design, development, fabrication, testing, integration, qualification and sustaining capabilities in the area of instrumentation and data acquisition systems. The laboratory also performs qualification testing of ground support equipment (GSE) instrumentation systems based on NASA program requirements. The Instrumentation and Data Acquisition Development Laboratory is composed of three physical laboratories: the Hazardous Gas Detection laboratory, the Sensor Data Acquisition System Laboratory, and the Weather Subsystem Laboratory. The Data Acquisition Development Laboratory develops data acquisition systems to support NASA Programs.

The Hazardous Gas Detection Laboratory designs and develops instruments to detect cryogenic propellant leakage in launch vehicles and GSE primarily using mass spectrometer and other advanced analytical technologies. The laboratory possesses knowledge in systems and technologies utilized to detect hydrogen, helium, nitrogen, oxygen, argon among other gases, using mass spectrometric techniques. The Sensor Data Acquisition System Laboratory designs and develops high speed, high data rate data acquisition systems in support of ground operations at KSC. These systems are deployed to acquire specific information utilized for engineering assessment of ground systems and equipment. Among the physical disciplines monitored are temperature, pressure, flow, acceleration, vibration, shock, loads and stresses. The Weather Subsystem Laboratory's main responsibility is the design and development, fabrication, testing, deployment and sustaining of weather instrumentation in support of KSC operations. The Laboratory is responsible for developing and sustaining meteorological and lightning instrumentation systems used at launch complex 39.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	N/R	R	R	R	R	S	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

<u>1.4.11 Preventative, Routine, and Reparative Maintenance</u>

The contractor shall maintain the gas sensor and mass spectrometer test beds. Proper operation of mass spectrometers, vacuum pumps, and gas mixers is required to maintain laboratory capabilities for gas sensor and mass spectrometer system design and evaluation efforts. Mass spectrometer performance checks against known gas concentration mixtures shall be

Instrumentation and Data Acquisition Development Laboratory (EL2)

performed. Vacuum pump run-time shall be assessed and pump seals replaced and vacuum pumps cleaned as needed. Gas mixers shall be evaluated against mass spectrometer measurements per manufacturer recommendations to verify proper flow control and gas mixing. Lastly, the proper operating condition of any associated instrumentation cabling, gas tubing, and data acquisition system connections will be verified. These maintenance efforts shall be performed monthly.

The contractor shall coordinate and maintain appropriate levels of compressed gas bottles. Due to the extensive use of compressed gas cylinders within the Hazardous Gas Detection Labs, gas bottle storage maintenance is necessary. In addition to weekly housekeeping activities, gas bottle storage shall also be assessed every month. Personnel shall coordinate with the institutional provider for non-required and empty gas bottles to be returned.

The contractor shall maintain test equipment storage. Large numbers of high accuracy, unique and/or delicate test equipment are necessary for the support and operation of the Laboratory. Most test equipment requires periodic calibrations so coordination of tests and test equipment is required to make sure required test equipment is available for upcoming tests. In addition to routine housekeeping efforts, personnel shall ensure that test equipment is in good physical order before, during, and after testing, and that equipment is properly stored when not in use.

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- Electrical/Electronic Components, Wiring, Batteries
- Hand tools & components such as drill bits, saw blades, etc.
- IT supplies and components (cables, media, etc.)
- Mechanical components (hinges, switches, belts, etc.)
- Safety supplies, PPE, signs & labels
- Compressed gases for equipment calibration and testing
- Cryogenic gases (dewars for environmental chambers, etc)
- Pressure fittings, pressure regulators, tubing, etc

~~Launch Control System Laboratory (IT5)~~

~~The Launch Control System (LCS) Laboratory provides testing, systems integration and launch site processing, and launch support for Exploration vehicles and their associated ground support systems. This includes computer hardware and software and communications equipment integral to command and control. LCS is not a laboratory but it does contain a development environment. Only the development environment is addressed here. It is used primarily for software development, integration and informal testing.~~

~~The development sets are connected to an LCS Backbone Network and use assets from the Development External Enclave (DEE). The application development set contains simulation hardware and software which is used for the development and integration of application software. The LCS Development Set is used for initial development of the LCS System Software, as well as for analysis of possible hardware and software solutions. For most operations, the LCS Development Set is managed from the DEE hardware. This includes security, system monitoring and provisioning. The DEE provides the ability for system software and application software developers to do some initial development at their desks, rather than in the set. This collection of hardware and software includes simulations that can support many simultaneous developers and other assets of the same general class as the final system assets, although they may be earlier models and even different vendors than the final configuration. This facility is also used as a test bed, where software and hardware can be evaluated for possible inclusion into the final solution. The DEE provides the capability to build and manage the operational software and data during the development phases. The DEE also provides security and system monitoring and provisioning capabilities for each of the development sets. These services involve the system administration activities associated with maintaining operations and maintenance on a wide variety of computing systems.~~

~~Laboratory maintenance shall include the following work from the indicated PWS sections:~~

~~1.4.1~~	~~1.4.2~~	~~1.4.3~~	~~1.4.4~~	~~1.4.5~~	~~1.4.6~~	~~1.4.7~~	~~1.4.8~~	~~1.4.9~~	~~1.4.10~~	~~1.4.11~~	~~1.4.12~~	~~1.4.13~~	~~1.4.14~~	~~1.4.15~~
~~R~~	~~N/R~~	~~R~~	~~N/R~~	~~R~~	~~N/R~~	~~R~~	~~N/R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~S~~	~~R~~	~~N/R~~

~~R= Required~~
~~N/R = Not Required~~
~~S= Specialized requirements in addition to section 1.4~~

~~Specialized Requirements:~~

~~1.4.13 Spares/Supplies Consumables Management~~
~~Consumables/Laboratory supplies include the following types of items:~~
- ~~Tapes and supplies for the backup of data~~

Launch Equipment Test Facility (LETF) (DS1)

The LETF supports multiple programs across NASA, including Shuttle, Launch Services, International Space Station and the Constellation Program. The LETF's primary role is Ground Support Equipment (GSE) development and qualification testing, prototype development and rapid response testing/fabrication support. The LETF consists of unique test fixtures, high bay, electrical shops, machine shop, weld shop, pneumatic shop and a Data Acquisition Laboratory. The LETF has the capability to design, fabricate and test unique GSE and test apparatus utilizing the various capabilities and development shops noted.

The following unique test fixtures, facility systems, shops and laboratories are contained within the LETF:

Test Fixtures:

- Hold Down Post Test Fixture- the system is primarily used to calibrate hold down posts in support of the Shuttle Program. The system has a pyrotechnics capability that has been utilized to support Shuttle Hold Down Post development and testing throughout the Shuttle program as well as other NASA program testing that require pyrotechnics firings.
- 600 Ton Test Fixture- This system is used to proof load all Shuttle lifting slings, beams and mechanisms. It has proved invaluable in other areas of testing over the years such as Crawler/Transporter tread/shoe testing.
- Cryogenic System- the LETF has a dual liquid hydrogen and liquid nitrogen test circuit that was primarily developed to support Shuttle umbilical system and tail service mast development ant qualification. It has the capability to test both system and component level test at liquid hydrogen, liquid helium and liquid nitrogen temperatures. It has been utilized in the past to support flight element testing for Shuttle and Station, as well as other NASA programs.
- Water Loop Test Fixture- This system was developed to support fluid systems and component qualification.
- Vehicle Motion Simulator - The simulator is utilized to simulate launch vehicle motion during processing and launch activities. The simulator primary use is the development and qualification of Mobile Launcher launch accessories (access arms and umbilical systems). The simulator consists of the following systems; hydraulic system, electrical system, cooling water system, pump house ventilation system, motion control system and large static and dynamic structure.
- GSE Integration Testbed - The testbed consists of a set of PLC racks that mimic the KGCS system. The system provides the ability to perform launch system command and control development activities.
- North Tower- The North Tower is used to simulate the various launch towers and configurations at KSC in support of GSE systems development.
- East Tower- The East Tower is used to simulate the various launch towers and configuration at KSC in support of the GSE system development.
- Hazardous Gas Detection System - The detection system is used to monitor for fire and hydrogen leaks during liquid hydrogen operations. It is designed to be common with the mobile launcher systems.

Launch Equipment Test Facility (LETF) (DS1)

The LETF facility systems include gaseous nitrogen, gaseous hydrogen, video distribution, water, alternating current power (low voltage), direct current power, area warning light, data acquisition, control room, cable plant, fiber plant, and high bay. The LETF includes a pneumatic, machine, weld, and cable fabrication shops.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	S	R	R	R	R	R	N/R	R	S	R	R	R	N/R

R = Required
N/R = Not Required
S = Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.3 Laboratory Safety Plan
For the LETF, the Contractor shall include and maintain a Security Plan. The Contractor shall develop a physical security plan to ensure the equipment allocated to the Contractor is monitored and maintained in a secured fashion. The plan shall be coordinated with the applicable KSC security organizations. This plan shall include the following at a minimum: access control of non-LETF assigned personnel and Contractors to the LETF area and facilities, plan for securing of areas after normal working hours, call list if incidents happen in regards to safety or security, and control of GFE or critical spares that are stored for later use.

1.4.11 Preventative, Routine, and Reparative Maintenance
The Contractor shall be responsible for maintaining all assigned LETF systems. The preventative maintenance program shall keep all assigned systems in safe and operational condition. The program shall identify and track system/equipment hardware and software problems from identification to resolution and to correct any issues as part of a robust maintenance program. Trending of equipment performance parameters will be maintained, where applicable. The preventive maintenance programs shall take into account KSC policy and guidelines, engineering and/or manufacturer recommendations.

The Contractor shall perform corrective maintenance on assigned systems. Corrective maintenance items are defined as items that require non-scheduled maintenance due to system or component level performance failure or degradation. These items may have been identified during preventive maintenance activities, system operation or inspections. All corrective maintenance items shall follow the Contractor's work control systems to document and track system reliability and maintainability metrics.

~~Lighting Testbed Laboratory (SS1)~~

~~The Lighting Testbed Laboratory develops technology for new light fixtures by measuring functional photometric parameters. Photometric laboratory capabilities include total photopic luminous flux, total scotopic luminous flux, color rendering index, correlated color temperature, radiant efficiency, luminous efficacy, and color coordinates in Tristimulus, CIE1931, CIE 1960, and CIE1976 color spaces. Plant response capabilities include determining total photosynthetic active radiation, photosynthetic photon flux, and phytochrome photostationary state. Intensity distribution profiles are also determined using a two-axis goniometer~~

~~Laboratory maintenance shall include the following work from the indicated PWS sections:~~

~~1.4.1~~	~~1.4.2~~	~~1.4.3~~	~~1.4.4~~	~~1.4.5~~	~~1.4.6~~	~~1.4.7~~	~~1.4.8~~	~~1.4.9~~	~~1.4.10~~	~~1.4.11~~	~~1.4.12~~	~~1.4.13~~	~~1.4.14~~	~~1.4.15~~
~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~N/R~~	~~R~~	~~R~~	~~R~~	~~S~~	~~R~~	~~N/R~~

~~R= Required~~
~~N/R = Not Required~~
~~S= Specialized requirements in addition to section 1.4~~

~~Specialized Requirements:~~

~~1.4.13 Spares/Supplies Consumables Management~~
~~Consumables/Laboratory supplies include the following types of items:~~

- ~~Filters~~

~~Low Pressure Testbed Laboratory (SS2)~~

~~The Low Pressure Testbed Laboratory develops and validates technology for new sensors and pressure dependent systems. Low pressure test bed capabilities include a hypobaric chamber, gas mixing capability, and enriched oxygen environment capability. Instrumentation throughout the chamber is able to handle a number of different sensor types as well as support a number of test protocols. This chamber includes an instrument table with active cooling to study long-term conduction and convection from instrument packages.~~

~~Laboratory maintenance shall include the following work from the indicated PWS sections:~~

~~1.4.1~~	~~1.4.2~~	~~1.4.3~~	~~1.4.4~~	~~1.4.5~~	~~1.4.6~~	~~1.4.7~~	~~1.4.8~~	~~1.4.9~~	~~1.4.10~~	~~1.4.11~~	~~1.4.12~~	~~1.4.13~~	~~1.4.14~~	~~1.4.15~~
~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~N/R~~	~~R~~	~~R~~	~~R~~	~~S~~	~~R~~	~~N/R~~

~~R= Required~~
~~N/R = Not Required~~
~~S= Specialized requirements in addition to section 1.4~~

~~Specialized Requirements:~~

~~1.4.13 Spares/Supplies Consumables Management~~

~~Consumables/Laboratory supplies include the following types of items:~~

- ~~Calibration gases~~
- ~~Clamps and small tools~~
- ~~Fittings and regulators~~
- ~~Glassware~~
- ~~Safety supplies (such as laboratory coats, glasses, and gloves)~~
- ~~Chemicals and permeation devices~~

Materials Failure Analysis Laboratory (MP1)

The Materials Failure Analysis Laboratory provides failure analysis, forensic and accident investigation, mishap board investigation support, and materials testing and evaluation services for metallic/nonmetallic materials and mechanical components used in aerospace flight hardware, ground support equipment, and related facilities. The laboratory provides independent failure analysis for Safety and Mission Assurance, KSC Fire Marshal, the NASA Inspector General, and other KSC institutional entities. Laboratory capabilities include photo documentation, microscopy (optical, stereo, laser-confocal, and scanning electron), fractography, metallography, hardness testing, and thermal analysis. Non-routine failure analysis work is performed in support of multiple NASA programs.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	S	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.11 Preventative, Routine, and Reparative Maintenance

The contractor shall maintain the supplies of both filled and empty liquid nitrogen dewars and gaseous nitrogen k-bottles needed for operations.

The contractor shall maintain the laboratory compressed air system. The contractor shall change out appropriate filters and perform air quality and cleanliness tests annually.

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- General supplies (such as gloves, tech wipes, beakers, glassware, cleaning agents, cotton balls, cotton swabs, etc)
- Mounting resins and polishing media (wheels and suspensions)
- Cutting wheels
- Cutting lubricant
- Microscope light bulbs
- Microscopy tape (carbon and copper), stubs, sample holders, stub cases, tungsten filaments

Materials Failure Analysis Laboratory (MP1)

- Sampling prep items (tweezers, brushes, razor knives, etc)
- Safety supplies (such as laboratory coats, safety glasses, and gloves)

Mechanical Failure Analysis Laboratory (MP3)

The Mechanical Failure Analysis Laboratory provides independent failure analyses, testing, and root cause determinations of mechanical systems or components (such as valves, regulators, motors, shafts, bearings, fasteners, and pumps) used in aerospace flight hardware, ground support equipment, and related facilities. This work is performed in support of multiple programs, including Space Shuttle, International Space Station, Launch Services and Constellation programs. Laboratory services include teardown and dissection of mechanical systems and components, root cause determination of mechanical systems failures, pneumatic testing of mechanical systems, and fabrication of special fixtures and test equipment.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	S	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.11 Preventative, Routine, and Reparative Maintenance
The Contractor shall maintain the compressed air system within the laboratory. The Contractor shall change out appropriate filters and perform air quality and cleanliness tests annually or as required.

1.4.13 Spares/Supplies Consumables Management
Consumables/Laboratory supplies include the following types of items:

- General maintenance supplies (poly bags, bulbs, brushes, absorbent paper, wipes, filters)
- Cutting dies, drill bits, blades, sanding belts
- Clamps, small fixture tools and hand tools
- Fittings and regulators
- Laboratory carts
- Safety supplies (such as laboratory coats, glasses, and gloves)

Metrology Laboratory (MP7)

The Metrology Laboratory provides rapid metrological analyses for critical dimension issues encountered with flight hardware and ground support equipment (GSE) and in support of failure analyses performed by other NASA/KSC laboratories. In-house metrology allows independent verification of quality, alignment, and fit and finish of critical flight hardware and GSE, as well as dimensional analyses of anomalies (e.g., scratches on sealing surfaces) encountered during flight hardware processing. This work is performed in support of multiple NASA programs. Laboratory services include precision measurement, dimensional analysis, alignment and threaded-fastener gauging, mold impressions of scratches, cracks, and defects, and contractual and specification compliance measurements.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	N/R	R	R	R	R	S	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.11 Preventative, Routine, and Reparative Maintenance
The Contractor shall maintain the laboratory compressed air system. The Contractor shall change out appropriate filters and perform air quality and cleanliness tests annually or as required.

1.4.13 Spares/Supplies Consumables Management
Consumables/Laboratory supplies include the following types of items:

- General supplies (such as mold impression materials, styli tips, poly bags, bulbs, brushes, absorbent paper, wipes, filters,)
- Clamps and small fixture tools
- Fittings and regulators
- Safety supplies (such as laboratory coats, glasses, and gloves)

Micro and Molecular Biology Laboratory (SS3)

The Micro and Molecular Biology Laboratory performs scientific testing in support of research and advanced technology development for the detection, enumeration, identification, and control of microorganisms. The Micro and Molecular Biology Laboratory is comprised of five laboratories equipped with state-of-the-art analytical instrumentation for DNA sequencing, bacterial enumeration, biological imaging, microbial identification, molecular biology, and sustainable systems engineering. The Micro laboratory applies the tools of molecular biology, microbiology, genetics, biochemistry, and biological engineering to assess the microbial ecology of spacecraft environmental control and life support systems and terrestrial systems for air, water, and solid waste processing. Micro laboratory projects include advanced microbial monitoring and control for spacecraft potable water systems, bioreactor design for water recovery and wastewater treatment, and microbiological monitoring of spacecraft solid waste management systems.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- General supplies (such as pipettes, tips, poly bottles, weighing dishes, bulbs, brushes, absorbent paper, pH paper, wipes, filters, cables, and syringes)
- Calibration gases
- Chromatography columns and fittings
- Clamps and small tools
- Fittings and regulators
- Glassware
- Safety supplies (such as laboratory coats, glasses, and gloves)
- Chemicals and permeation devices

Non-Destructive Evaluation Laboratory (Institutional) (PS11)

The institutional Nondestructive Evaluation (NDE) Laboratory supports the aerospace community by performing nondestructive testing (NDT) on numerous flight hardware and ground support equipment (GSE) components at KSC as well as Cape Canaveral Air Force Station and Patrick Air Force Base. The laboratory provides two-shift coverage to provide immediate response and support. The Laboratory supports work requests at a customer's job location or the test parts can be transported by the requester to the NDE Laboratory for inspection. Several specialized inspection tools are located at the NDE Laboratory. These include unique exposure areas for X-Ray examination, an industrial Computed Tomographic Analyzer (CAT Scanner), a film digitizer, and a Realtime/Microfocus X-Ray system that allows personnel to view live X-Ray images of a part on a video monitor. The Microfocus system has image enhancement, zoom and rotational capabilities.

The primary methods used by the NDE Laboratory can be separated into eight (8) disciplines. These are Visual Testing, Magnetic Particle, Liquid Penetrant, Radiography, Ultrasonic, Eddy Current, Leak Testing, and Infrared Testing. Visual Testing performed includes Closed Circuit Television, Borescope, and surface/weld inspections. Magnetic Particle, Liquid Penetrant and Eddy Current are considered surface inspections although Magnetic Particle and Eddy Current can inspect sub-surface. Radiography and Ultrasonic inspections are considered volumetric examinations that are capable of detecting internal discontinuities. Leak Testing is a special type of volumetric examination in which the leak rate of a component is determined. Infrared (IR) testing can be both qualitative (insulation anomalies, liquid levels, hydrogen fires) and quantitative (temperature measurements on hot electrical switches).

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	N/R	R	R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- General maintenance supplies (such as bulbs, cables, and greases)
- Calibration gases

Non-Destructive Evaluation Laboratory (Institutional) (PS11)

- Magnetic particle inspection media
- Clamps and hand tools
- Fittings and regulators
- Laboratory carts
- Safety supplies (such as laboratory coats, dosimeters, and gloves)
- X-ray film and associated film processing chemicals
- Liquid dye penetrant and associated cleaners

Non-Destructive Evaluation Laboratory (Shuttle) (PS12)

The Nondestructive Evaluation (NDE) Laboratory supports the Space Shuttle and Constellation programs by performing nondestructive testing (NDT) on numerous flight hardware and ground support equipment (GSE) components. The laboratory supports onsite and offsite NDE inspection, evaluation of data, inspection report generation, and procedure generation. The lab supports the development and certification of new techniques when existing NDE approaches will not provide adequate information.

The primary methods used by the NDE Laboratory can be separated into eight (8) disciplines. These are visual testing, magnetic particle, liquid penetrant, radiography, ultrasonic, eddy current, leak testing, and infrared testing. Visual testing performed includes closed circuit television, borescope, and surface/weld inspections. Magnetic particle, liquid penetrant and eddy current are considered surface inspections although magnetic particle and eddy current can inspect sub-surface. Radiography and ultrasonic inspections are considered volumetric examinations that are capable of detecting internal discontinuities. Leak testing is a special type of volumetric examination in which the leak rate of a component is determined. Infrared testing can be both qualitative (insulation anomalies, liquid levels, hydrogen fires) and quantitative (temperature measurements on hot electrical switches). Developmental NDE systems include laser shearography, terahertz, x-ray backscatter, thermal wave infra red and other techniques which have been found to be useful on aerospace materials. The lab is responsible for proposing new NDE approaches where required and, if funded, carrying out development and testing including potentially certification of a method and probability of detection.

Several specialized inspection tools are located at the NDE Lab. A large-scale robotic radiography system allows the inspection of solid rocket booster aft skirts and includes digital imagers and 3D positioning and coordinate measurement systems. Portable thermal wave imaging systems allow for the in-lab or field inspection of composites, reinforced carbon-carbon panels, and other structures for defects and disbonds.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Non-Destructive Evaluation Laboratory (Shuttle) (PS12)

Specialized Requirements:

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- General supplies (such as bulbs, cables, and greases)
- Calibration gases
- Magnetic particle inspection media
- Clamps and hand tools
- Fittings and regulators
- Safety supplies (such as lab coats, dosimeters, and gloves)
- X-ray film and associated film processing chemicals
- Liquid dye penetrant and associated cleaners

Physical Test and Analysis Laboratory (MP6)

The Physical Test and Analysis Laboratory provides a range of physical testing of materials and mechanical/electrical components used in aerospace flight hardware, ground support equipment, and related facilities. This work is performed in support of multiple programs, including Space Shuttle, International Space Station, Launch Services and Constellation programs. The laboratory performs the following tests/analyses: tensile testing, compression testing, fatigue testing, flammability, electrostatic discharge testing, thermal vacuum and environmental chamber testing, vibration and shock testing, and hydraulic testing.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	S	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.11 Preventative, Routine, and Reparative Maintenance

The Contractor shall maintain fume hoods with the exception of the Flammability Testing Chamber.

The Contractor shall maintain the forklift in the laboratory. The electric forklift requires periodic charging of its batteries.

The Contractor shall maintain the vibration table cooling system. The power amplifier requires water cooling and the system contains replaceable filters.

The Contractor shall maintain the pendant controlled overhead monorail crane.

The Contractor shall maintain the mechanical vacuum pump on the large Altitude Chamber on a quarterly basis.

Physical Test and Analysis Laboratory (MP6)

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- General supplies (such as wipers, rags, cotton swabs, weighing dishes, bulbs, brushes, absorbent paper, pH paper, kraft paper, bags, tapes, adhesives, laboratory bottles, filters, cables, and syringes)
- Clamps and small tools
- Fittings and regulators
- Glassware
- Laboratory carts
- Safety supplies (such as laboratory coats, glasses, and gloves)
- Chemicals and permeation devices
- Fasteners
- Cleaners, hand and general

Polymer Science and Technology Laboratory (MP4)

The Polymer Science and Technology Laboratory provides polymers, materials and composites expertise to NASA, for the purposes of developing and improving polymeric and composite materials used in flight hardware, ground support equipment and related facilities at KSC. This work is performed in support of multiple NASA programs. The laboratory consists of a cone calorimetry fire and testing facility, a laboratory synthesis and characterization area, and a thermoplastics composites fabrication and a small-scale part manufacturing facility.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	S	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.11 Preventative, Routine, and Reparative Maintenance

The Contractor shall maintain the supply of consumable gases (flammable and nonflammable) for cone calorimeter.

The Contractor shall maintain and coordinate the supply of consumable gases for operating thermal analyses equipment. The Contractor shall maintain the supply of compressed air and nitrogen for the operation of equipment in the synthesis and characterization laboratory. The Contractor shall coordinate with institution for delivery of liquid nitrogen (LN_2) dewars for test equipment.

The Contractor shall ensure that the de-ionized water system is maintained.

The Contractor shall maintain miscellaneous equipment/instrumentation. The Contractor will maintain the refrigerated cooling system for the differential scanning calorimeter and dynamic mechanical analyzer and Pro4-4400 Resistivity Measurement Device, water baths for extruder, ovens, and additional laboratory instrumentation that will be periodically checked for meeting performance and standard operation.

Polymer Science and Technology Laboratory (MP4)

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- General maintenance supplies (such as pipettes, tips, poly bottles, weighing dishes, bulbs, brushes, absorbent paper, pH paper, wipes, filters, cables, and syringes)
- Calibration gases
- Clamps and small tools
- Fittings and regulators
- Glassware
- Laboratory carts
- Safety supplies (such as laboratory coats, glasses, and gloves)
- Chemicals and polymer resins
- Supplies for photo-documentation

Power Systems Development Laboratory (EL5)

The Power Systems Development Laboratory supports the design and development of new ground support equipment (GSE) power systems, including equipment rack/subsystem power, direct current (DC) power systems, vehicle special power, and battery-based systems. laboratory services include frequency response analysis (impedance measurements, stability testing), alternating current (AC) three-phase power analysis (frequency, power factor, voltage, current, phase angles, power (real, apparent, reactive)), high potential (HIPOT) testing for single conductor (dielectric breakdown test, dielectric withstanding test, insulation resistance test), transient DC power supply analysis, steady-state DC power supply analysis, GSP design and development for vehicle and GSE.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	N/R	R	R	R	R	R	R	R	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- Misc Wires/Cables
- Test Leads
- Hand Tools
- Misc Electronic Components (Resistors, Capacitors, ICs, Inductors, etc..)
- Blank Media
- Safety Supplies (such as laboratory coats, glasses, and gloves)

Prototype Development Laboratory (DS3)

The Prototype Development Laboratory performs quick-turnaround prototype development (often for solutions to one-of-a-kind problems), hardware fabrication and modifications, and component testing of ground support equipment (GSE) and flight hardware, and provides support to failure analyses performed by other NASA laboratories. The laboratory responds quickly to failures that occur during projects and launch/payload processing operations, with effective and timely design solutions and modifications. Laboratory personnel are highly skilled engineers and technicians trained in the latest computer-aided design (CAD) tools and machining processes, sheet metal fabrication, welding, cryogenics, high-pressure pneumatics testing and electrical/electronics development.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	S	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.11 Preventative, Routine, and Reparative Maintenance
The Contractor shall provide routine water jet service to include emptying the water jet water tank.

The Contractor shall provide service and upkeep for deburring tumblers.

1.4.13 Spares/Supplies Consumables Management
Consumables/Laboratory supplies include the following types of items:

- Consumables/Laboratory supplies includes the following items:
- Safety supplies (such as laboratory coats, safety glasses, and gloves)
- Garnet abrasive and nozzles, etc. for water jet cutters
- Tubing and fittings for pneumatics shop
- Laboratory tooling, (end mills, drill, saw blades, etc.)
- Cables, wire, connectors
- Wire spools and filters/resin for the wire EDM machine

Prototype Development Laboratory (DS3)

- Modeling material for FDM Machine
- Misc tools (worn dial calipers, indicators, etc.)
- Abrasive media for tumbler/de-burring machine
- Dielectric oil/filters/electrodes for die sinker EDM
- Cleaning supplies
- Customer service supplies
- Facility (upkeep, hurricane prep, etc.)
- Down draft unit (filters, maintenance)

Range Technology Development Laboratory (EL7)

The Range Technology Development Laboratory develops and implements technologies which support range operations. The laboratory's mission is to provide design and development, prototype fabrication, laboratory and field (flight) testing, and integration and validation for range technologies. The laboratory also provides technical expertise and problem resolution to NASA Programs, such as the calibration and certification of approach and landing aids and sustaining engineering of ground-based range systems as required.

Technologies developed in the laboratory include high and low data rate telemetry, secured communication, Global Positioning System (GPS) metric tracking, autonomous flight safety systems (AFSS), vehicle and debris' tracking, Unmanned Aerial Systems (UAS) for sensing and surveillance, and RF surveillance. Additionally, it evaluates and tests new emerging communication technologies to support NASA

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	N/R	R	R	R	R	R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- Electrical/Electronic components, wiring, batteries, LCD counters, ADC's, DSP's, etc.
- Hand tools & components such as drill bits, saw blades, etc.
- IT supplies and components (cables, media, etc.)
- Mechanical components (hinges, switches, belts, etc.)
- Safety supplies, PPE, signs & labels

Sensors and Transducers Development Laboratory (EL1)

The Sensors and Transducers Development Laboratory provides Kennedy Space Center with design, development, testing, integration, qualification and sustaining capabilities in the area of transducers and sensors. The laboratory provides technical expertise in the following disciplines: temperature, pressure, flow, acceleration, gas leak detection (point sensors), hydrogen flame detection (point sensors), voltage and current sensing, and load and force measurements. The laboratory also performs sensors and transducers' qualification testing of ground support equipment (GSE) devices based on NASA program requirements. These qualification tests include functional testing, mechanical inspection/compliance, materials compatibility, and environmental testing (vibration, electromagnetic interference, thermal and thermal-vacuum testing, etc).

The laboratory provides design and development capabilities to KSC for new transducers and sensors in support of requirements not met by commercially available products, and quick response technical support in the resolution of transducers problems at KSC.

Among some of the Sensors and Transducers Development Laboratory capabilities are temperature testing in the range of 15 Kelvin (-432 F) to 700 Kelvin (800 F), pressure testing for differential, absolute, and gage transducers from near vacuum (0.10 mTorr) to high pressure (2,000psig), and flow testing for both gas and liquids, hydrogen leak and flame detection testing with real and simulated fire. The laboratory is also a remote hazardous test site for the qualification of flame detectors, capable of hydrogen, alcohols and hypergol fire burns and has a gas mixing capability for five and eight different gases.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	S	R	R	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

<u>1.4.11</u> <u>Preventative, Routine, and Reparative Maintenance</u>

The Contractor shall maintain the pressure test systems. Two pressure test systems are utilized in the Sensors and Transducer Development Laboratory and require periodic maintenance. This includes verifying the proper operating conditions of system cables, pressure flex hoses, pressure tubing, pressure regulators, and the system computer system. These maintenance efforts shall be performed quarterly.

Sensors and Transducers Development Laboratory (EL1)

The Contractor shall maintain the temperature test systems. Four temperature baths are utilized in the Sensors and Transducer Development Laboratory. The temperature baths, used to test various temperature probes, require the following periodic maintenance: cleaning of filter systems; survey and possible replacement of the fluids within the baths; pressure/leak check of the cryostat; and verification of the proper operating conditions of any associated cables, fittings, and tubing. These maintenance efforts shall be performed quarterly.

The Contractor shall maintain the gas and liquid flow test systems. Separate gas and liquid flow test systems are utilized in the Sensors and Transducer Development Laboratory, for testing of various flow meters which require periodic maintenance. This includes verifying the proper operating conditions of gas supply tubing, liquid flow pipes and fittings, and any associated electrical cabling required for system operations. These maintenance efforts shall be performed weekly.

The contractor shall maintain the flame detector test systems (remote hazardous test site). Flame detector testing to be conducted at the remote hazardous test site requires that the facility and its equipment be in working order. This involves maintaining the operating condition, cleanliness and corrosion control of fluid burn pans, test carts, and equipment storage sheds. Additionally, verification of the proper operating conditions of any associated instrumentation cables is necessary. Coordination of test site mowing is also required. These maintenance efforts shall be performed quarterly.

The contractor shall maintain the gas bottle storage. Due to the extensive use of compressed gas cylinders within the Sensors and Transducer Development Laboratory (shared with the Hazardous Gas Detection Laboratory), gas bottle storage maintenance is necessary. In addition to weekly housekeeping activities, gas bottle storage will also be assessed every month. Personnel will coordinate for non-required and empty gas bottles to be returned. Additionally, gas bottle storage shall be kept in logistical order and in compliance with KSC and OSHA standards for storage.

1.4.12 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- Electrical/Electronic components, wiring, Bbatteries, counters, digital signal processors, etc.
- Hand tools & components such as drill bits, saw blades, etc.
- IT supplies and components (cables, media, etc.)
- Mechanical components (hinges, switches, belts, etc.)
- Safety supplies, PPE, signs & labels
- Compressed and cryogenic gases (LN2 dewars for environmental chambers, etc)
- Liquids (de-ionized water for a relative humidity chamber, alcohol for temperature bath, etc.)
- Solids (silica powder for temperature bath, etc)

Spaceport Processing Systems Development Laboratory (IT4)

The Spaceport Processing Systems Development Laboratory is a multifunctional laboratory (test bed) available for designing, developing, prototyping, analyzing, testing, certifying, and implementing hardware, software, and related technologies for small to medium-sized computer control systems. Several different hardware platforms, computer operating systems, development tools, and work control systems may be loaded on the laboratory equipment, thereby providing various build options for customers. Efforts focus on providing flexible, innovative solutions in the areas of command, control, monitoring, and range systems. SPSDL can accommodate up to 30 people engaged in display, implementation, and testing activities. The laboratory can be used as a single large-development environment or can be divided into smaller test sets to simultaneously service multiple customers as requirements warrant.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	N/R	R	N/R	R	N/R	R	N/R	R	R	S	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.11 Preventative, Routine, and Reparative Maintenance

The Contractor shall maintain the ability to reconfigure hardware platforms and enterprise software products for computers in the laboratory and office environments. The Contractor shall function as a customer interface to the computer system vendor.

The Contractor shall maintain a Windows System Management Software (SMS) server, to be used for remote administration of Windows based PCs.

The Contractor shall maintain the Operating System Test Bed (OST) in the development laboratory, to include testing of operating system software updates. The Contractor shall support the research of Linux development by maintaining Linux clients and servers.

Spaceport Processing Systems Development Laboratory (IT4)

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- Cables
- Connectors
- Patch cables
- Tape backup consumables

Standards and Calibration Laboratory (CA1)

The Standards and Calibration Laboratory provides KSC's NASA, NASA Contractor, U.S.A.F. and U.S.A.F. Contractor organizations the highest level of metrology services, with the lowest level of uncertainty, and Institutional calibration services traceable to National Institutes of Standards and Technology. The Reference Standards Laboratory maintains the most accurate measurement standards within NASA KSC and provides traceability to NIST for lower echelon calibration laboratories. The National Institutes of Standards and Technology traceability provided by the Reference Standards Laboratory is vital to consistent measurement and test results within all KSC Calibration Laboratories and is crucial to meeting NASA policy directives, KSC procedural requirements, and national standards such as ANSI/NCSL Z540.1 and ANSI Z540.3 (2006). As the Agency's Lead Center Laboratory, the Reference Standards Laboratory also serves as the pivot laboratory for various NASA Measurement Assurance Programs, providing assessment of Agency-wide measurement capabilities. The Calibration Laboratory calibrates and repairs a wide range of measuring and test equipment for institutional support.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	N/R	S	R	R	R	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.1 Laboratory Management

The Contractor shall ensure that all calibrations are performed in accordance with KNPR 8730.1, KSC Metrology and Calibration Procedural Requirements.

1.4.10 Spares/Supplies Consumables Management

The Contractor shall provide reference standards calibration and maintenance to NASA, and KSC Contractors, 45th Space Wing Air Force and Space Wing Contractors with the appropriate calibration support clauses in their contracts, and other Government agencies with Host Tenant Support Agreements that specify calibration support with approval of Air Force Metrology and Calibration.

Standards and Calibration Laboratory (CA1)

The Contractor shall provide equipment repair if within the current laboratory capability and the time spent attempting or performing the repair will not exceed routine calibration time.

The Contractor shall provide cleaning incidental to calibration.

The Contractor shall maintain KSC reference standards and provide working standard measurement data traceable to National Institute of Standards and Technology or intrinsic standards for KSC, and procure National Institutes of Standards and Technology traceable standards and standard reference materials.

The Contractor shall maintain a NASA Shared Resources Management System, used to control automated calibration work stations.

The Contractor shall maintain PMEL Automated Management System, the USAF-provided data collection system in support of USAF requirements to provide appropriate information to AFMETCAL. Provide an overdue calibration list to 45th Space Wing each month.

Water Processing Laboratory (SS5)

The Water Processing Laboratory is engaged in research and advanced technology development for the detection, enumeration, identification, monitoring and control of microorganisms and microbial processes in spacecraft water systems. The Water Processing Laboratory applies the tools of molecular biology, microbiology, genetics, biochemistry, and biological engineering to assess the microbial ecology of various treatments such as biocides, photolysis and photocatalyis techniques, and point of use filtration systems in order to validate system engineering designs in support of the Exploration Life Support projects. Specifically, this laboratory assesses the feasibility of water post-processing and storage systems.

Laboratory maintenance shall include the following work from the indicated PWS sections:

1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.4.12	1.4.13	1.4.14	1.4.15
R	R	R	R	R	R	R	R	R	R	R	R	S	R	N/R

R= Required
N/R = Not Required
S= Specialized requirements in addition to section 1.4

Specialized Requirements:

1.4.13 Spares/Supplies Consumables Management

Consumables/Laboratory supplies include the following types of items:

- General maintenance supplies (such as pipettes, tips, poly bottles, weighing dishes, bulbs, brushes, absorbent paper, pH paper, wipes, filters, cables, and syringes)
- Calibration gases
- Chromatography columns and fittings
- Clamps and small tools
- Fittings and regulators
- Glassware
- Laboratory carts
- Safety supplies (such as laboratory coats, glasses, and gloves)
- Chemicals and permeation devices

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ENGINEERING SERVICES CONTRACT

APPENDIX D
TECHNOLOGY READINESS LEVELS (TRLS)

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TECHNOLOGY READINESS LEVELS (TRL) DESCRIPTIONS

Technology Readiness Level - (TRL)	Definition	Hardware Description	Software Description	Exit Criteria
1	Basic principles observed and reported	Scientific knowledge generated underpinning hardware technology concepts/applications.	Scientific knowledge generated underpinning basic properties of software architecture and mathematical formulation.	Peer reviewed publication of research underlying the proposed concept/application.
2	Technology concept or application formulated	Invention begins, practical application is identified but is speculative, no experimental proof or detailed analysis is available to support the conjecture.	Invention begins, practical application is identified but is speculative, no experimental proof or detailed analysis is available to support the conjecture. Underlying Algorithms are clarified and documented.	Documented description of the application/concept that addresses feasibility and benefit.
3	Analytical and/or experimental critical function or characteristic proof-of-concept	Analytical studies place the technology in an appropriate context and laboratory demonstrations, modeling and simulation validate analytical prediction.	Development of limited functionality to validate critical properties and predictions using non-integrated software components	Documented analytical/experimental results validating predictions of key parameters.
4	Component or breadboard validation in laboratory	A low fidelity system/component breadboard is built and operated to demonstrate basic functionality and critical test environments and associated performance predictions are defined relative to the final operating environment.	Key, functionally critical, software components are integrated, and functionally validated, to establish interoperability and begin architecture development. Relevant environments defined and performance in this environment predicted.	Documented test performance demonstrating agreement with analytical predictions. Documented definition of relevant environment.

Technology Readiness Level - (TRL)	Definition	Hardware Description	Software Description	Exit Criteria
5	Component or breadboard validation in a relevant environment	A mid-level fidelity system/component brassboard is built and operated to demonstrate overall performance in a simulated operational environment with realistic support elements that demonstrates overall performance in critical areas. Performance predictions are made for subsequent development phases.	End to End Software elements implemented and interfaced with existing systems conforming to target environment, including the target o software environment. End to End Software System, Tested in Relevant Environment, Meets Predicted Performance. Operational Environment Performance Predicted.	Documented test performance demonstrating agreement with analytical predictions. Documented definition of scaling requirements.
6	System/subsystem model or prototype demonstration in a relevant environment	A high-fidelity system/component prototype that adequately addresses all critical scaling issues is built and operated in a relevant environment to demonstrate operations under critical environmental conditions.	Prototype software partially integrated with existing hardware/software systems and demonstrated on full scale realistic problems.	Documented test performance demonstrating agreement with analytical predictions.
7	System prototype demonstration in space	A high fidelity engineering unit that adequately addresses all critical scaling issues is built and operated in a relevant environment to demonstrate performance in the actual operational environment and platform (ground, airborne or space).	Prototype software is fully integrated with operational hardware/software systems demonstrating operational feasibility.	Documented test performance demonstrating agreement with analytical predictions.

Technology Readiness Level - (TRL)	Definition	Hardware Description	Software Description	Exit Criteria
8	Actual system completed and flight qualified through test and demonstration	The final product in its final configuration is successfully demonstrated through test and analysis for its intended operational environment and platform (ground, airborne or space).	The final product in its final configuration is successfully [demonstrated] through test and analysis for its intended operational environment and platform (ground, airborne or space).	Documented test performance verifying analytical predictions.
9	Actual system flight proven through successful mission operations	The final product is successfully operated in an actual mission.	The final product is successfully operated in an actual mission.	Documented mission operational results.

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ENGINEERING SERVICES CONTRACT

APPENDIX E
GOVERNMENT SUPPORT SYSTEMS HARDWARE AND SOFTWARE RESOURCES

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Government Support Systems Hardware and Software Resources (SUMMARY)				
Device Name	**Hardware**	**Model Number**	**Serial Number**	**Location**
1. ASRCDEV03.ndc.nasa.gov	Dell	PowerEdge 2950	7350PC1	M6-0342 (CIF) 243
2. ASRCDEV04.ndc.nasa.gov	Dell	PowerEdge 2950	6350PC1	M6-0342 (CIF) 243
3. ASRCSTORE01.ndc.nasa.gov	Dell	PowerEdge MD3000i	1432NH1	M6-0342 (CIF) 243
4. ASRCSTORE02.ndc.nasa.gov	Dell	PowerEdge MD3000i	9JLT4M1	M6-0342 (CIF) 243
5. ks2301sv2189987.ndc.nasa.gov	Dell	PowerEdge 2950	4RR69C1	M6-0342 (CIF) 243
6. ks2301sv2584507.ndc.nasa.gov	Dell	PowerEdge R710	424XPS1	M6-0342 (CIF) 243
7. NetworkIT1155	Dell	PowerConnect 5448	GF2V7F1	M6-0342 (CIF) 243
8. NetworkIT1156	Dell	PowerConnect 5424	12NT7F1	M6-0342 (CIF) 243
9. NetworkIT1270	Dell	PowerConnect 5424	C9FRFH1	M6-0342 (CIF) 243
10. NetworkIT1271	Dell	PowerConnect 5424	B9FRFH1	M6-0342 (CIF) 243
11. Tape2215986	Dell	PowerVault TL 2000 LTO-4	CDZV3J1	M6-0342 (CIF) 243
12. Tape2293882	Dell	PowerVault TL 2000 LTO-4	98WRJL1	M6-0342 (CIF) 243
13. Tape2294332	Dell	PowerVault TL 2000 LTO-4	G72TXS1	M6-0342 (CIF) 243
14. Tape2294344	Dell	PowerVault TL 2000 LTO-5	6VGB7X1	M6-0342 (CIF) 243
15. Tape2294418	Dell	PowerVault TL 2000 LTO-5	FLWB7X1	M6-0342 (CIF) 243
16. Tape2295528	Dell	PowerVault TL 2000 LTO-4	33Q56Q1	M6-0342 (CIF) 243
17. VMHOST01.ndc.nasa.gov	Dell	PowerEdge R905	6QQ9PH1	M6-0342 (CIF) 243
18. VMHOST02.ndc.nasa.gov	Dell	PowerEdge R905	FR489K1	M6-0342 (CIF) 243
19. VMHost03	Dell	PowerEdge R710	FGGTNS1	M6-0342 (CIF) 243
20. VMHost04	Dell	PowerEdge R710	FGFVNS1	M6-0342 (CIF) 243
21. vmspt01.ndc.nasa.gov	Dell	PowerEdge R710	9YF8XV1	M6-0342 (CIF) 243
22. vmspt02.ndc.nasa.gov	Dell	PowerEdge R720	40FGYV1	M6-0342 (CIF) 243
23. ECN2189807	Hewlett-Packard	Hewlett-Packard/ 2420DN	-	M6-0399 (HQ) 3364

Government Support Systems Hardware and Software Resources (Descriptions)	
Device Name	**Description**
1. ASRCDEV03.ndc.nasa.gov	Product Type: Server Operating System: VMWare ESX Description: Spare - Offline
2. ASRCDEV04.ndc.nasa.gov	Product Type: Server Operating System: VMWare ESX Description: Spare - Offline
3. ASRCSTORE01.ndc.nasa.gov	Product Type: Storage Area Network (SAN) Operating System: N/A Description: Storage Area Network (SAN) allows multiple virtual servers to access a pool of storage space in which any server can access. Provides a large amount of storage to the VM's, increases data access performance, improves recoverability of a VM's data due to data redundancy. The host operating systems treats the SAN as if it is a storage devices, such as a disk volume assigned to a local drive letter, this allows the SAN to provide storage and additional storage can be allocated in event a VM gets low due to amount of data being stored or number of applications being used. Increases data storage performance, availability, and efficiency of applications.
4. ASRCSTORE02.ndc.nasa.gov	Product Type: Storage Area Network (SAN) Operating System: N/A Description: Storage Area Network (SAN) allows multiple virtual servers to access a pool of storage space in which any server can access. Provides a large amount of storage to the VM's, increases data access performance, improves recoverability of a VM's data due to data redundancy. The host operating systems treats the SAN as if it is a storage devices, such as a disk volume assigned to a local drive letter, this allows the SAN to provide storage and additional storage can be allocated in event a VM gets low due to amount of data being stored or number of applications being used. Increases data storage performance, availability, and efficiency of applications.

Government Support Systems Hardware and Software Resources (Descriptions)	
Device Name	**Description**
5. ks2301sv2189987.ndc.nasa.gov	Product Type: Server Operating System: Windows 2003 Enterprise R2/SP2 Description: File Share server. Shares included, but not limited to, Common - Mostly archived materials like the photo library. This share has controlled access as a place where different contract organizations could 'put' related shared documents. Some of the subfolders pertaining to payload development could be moved to the Flight folder. Dwg_Resources – Flight Development DAC drawings, contract sensitive. Flight - This share contains all of the technical, engineering, and operations data for both the 50+ biological payloads developed at KSC and payloads currently in active development. Engineers are encouraged to keep their files on the server instead of their local machines for security and backup services. Most of this information does not exist anywhere else. Access is restricted to the payload development group only, may be considered contract sensitive. Ground_Research – store science research information and data used by ESC Group 870 and CBS on a regular basis, contract sensitive. Payolad_Dev_Sched_NASA – This is a repository requested by our NASA UB Customer for placing Payload Project Schedules for their review and analysis. This folder allows for separation of our schedules from other ESC sensitive Payload folders. This contract sensitive folder is accessed and utilized weekly. SRM&QA – Flight Safety and Quality Assurance, used on a regular basis, contract sensitive.

Government Support Systems Hardware and Software Resources (Descriptions)		
Device Name	**Description**	
6. ks2301sv2584507.ndc.nasa.gov	Product Type: Operating System: Description:	Server Windows 2008 Standard (x64) Simple file sharing. Shares included, but not limited to: The ENGFS01 Share_1_NASA share structure is where information is shared between NASA and ESC personnel. NASA personnel also use the server for storing some of their working and reference files. The ENGFS01 Share_2_Working share structure is mostly restricted to ESC personnel and contains engineering reference information from previous designs and programs as well as working files. This share structure also contains contract sensitive management information such as Task Order development details consisting of resource planning, funding, scope, activity reports, and metrics. For the SHE&MA organization - shares included are: Systems Safety & Reliability (SSR) and SHEMA Management. Files in the SSR share are related to conducting safety analyses of subsystem designs. Files in the SHEMA_Mgmt share are related to managing SHEMA resources so access to this information is limited to personnel in SHEMA management/supervisory roles. The Project Cost Estimating group shares contain cost estimating data, engineering design cost estimates, material and equipment costs, ongoing contractor proposals and change order proposals. Cost estimates should be considered contract sensitive. ENGFS01 is also the engineering backup media controller used for backing up ENGFS01, AEF001s and FS03 (ESCPDM backup is also planned to transition to this media server).
7. NetworkIT1155	Product Type: Operating System: Description:	Switch N/A Ethernet network switch used to connect multiple servers and hardware to send information and access shared resources such as backup units, VM host, SAN, physical standalone servers, etc. These are used for the NDC domain and private domain that is used for backups.

Government Support Systems Hardware and Software Resources (Descriptions)	
Device Name	**Description**
8. NetworkIT1156	Product Type: Switch Operating System: N/A Description: Ethernet network switch used to connect multiple servers and hardware to send information and access shared resources such as backup units, VM host, SAN, physical standalone servers, etc. These are used for the NDC domain and private domain that is used for backups.
9. NetworkIT1270	Product Type: Switch Operating System: N/A Description: Ethernet network switch used to connect multiple servers and hardware to send information and access shared resources such as backup units, VM host, SAN, physical standalone servers, etc. These are used for the NDC domain and private domain that is used for backups.
10. NetworkIT1271	Product Type: Switch Operating System: N/A Description: Ethernet network switch used to connect multiple servers and hardware to send information and access shared resources such as backup units, VM host, SAN, physical standalone servers, etc. These are used for the NDC domain and private domain that is used for backups.
11. Tape2215986	Product Type: Backup Tape Library Operating System: N/A Description: Backup Tape Library used to backup server data. Connected to the VMSPT01 backup exec server; servers backed up are: offste1, eng-admin, and nasaeng.
12. Tape2293882	Product Type: Backup Tape Library Operating System: N/A Description: Backup Tape Library used to backup server data. Connected to the VMSPT01 backup exec server; servers backed up are: ks-kdc-adesk01, SQLP05, EDCCP01, EDCWS05, and KS2127web190017.

Government Support Systems Hardware and Software Resources (Descriptions)	
Device Name	**Description**
13. Tape2294332	Product Type: Backup Tape Library Operating System: N/A Description: Backup Tape Library used to backup aef001s and FS03, and ks2301sv2584507.
14. Tape2294344	Product Type: Backup Tape Library Operating System: N/A Description: Backup Tape Library used to backup server data. Connected to the VMSPT01 backup exec server; servers backed up are: fileserv01, KS2301vsvPDM, KSESCMESD, and VMSPT02.
15. Tape2294418	Product Type: Backup Tape Library Operating System: N/A Description: Backup Tape Library used to backup server data. Connected to the VMSPT02 backup exec server; servers backed up are: WWS01, WWS02, SQLApp01, and KS2301dev212814.
16. Tape2295528	Product Type: Backup Tape Library Operating System: N/A Description: Backup Tape Library used to backup server data. Connected to the VMSPT02 backup exec server; servers backed up are: VSQLTest01, VSQLD01, VSQLP01, VSSCF, and VSQLTest.

Government Support Systems Hardware and Software Resources (Descriptions)	
Device Name	**Description**
17. VMHOST01.ndc.nasa.gov	Product Type: Virtual Machine (VM) Host Server Operating System: VMWare ESX 3.5 Description: Production Virtual Machine Host, this machine hosts the production guest virtual machines (VM's). It's the hardware that provides computing resources, such as processing power, memory, disk and network I/O, and so on. There are two production virtual host for redundancy where VM's are moved between each host to provide best performance, balancing workload, network traffic and so on and provides migration from one host to the other in event of a host failure. The production VM guest machines hosted on this server are: EDCCP01, EDCWS05, Eng-Admin, KSESCMESD, OFFSTE1, KS2301VSVPDM, SQLAPP01, SQLP05, VSQLP01, WWS01, and NASAENG
18. VMHOST02.ndc.nasa.gov	Product Type: Virtual Machine (VM) Host Server Operating System: VMWare ESX 3.5 Description: Production Virtual Machine Host, this machine hosts the production guest virtual machines (VM's). It's the hardware that provides computing resources, such as processing power, memory, disk and network I/O, and so on. There are two production virtual host for redundancy where VM's are moved between each host to provide best performance, balancing workload, network traffic and so on and provides migration from one host to the other in event of a host failure. The production VM guest machines hosted on this server are: EDCCP01, EDCWS05, Eng-Admin, KSESCMESD, OFFSTE1, KS2301VSVPDM, SQLAPP01, SQLP05, VSQLP01, WWS01, and NASAENG

Government Support Systems Hardware and Software Resources (Descriptions)	
Device Name	**Description**
19. VMHost03	Product Type: Virtual Machine (VM) Host Server Operating System: VMWare ESXi 4.1 Description: Development and Test Virtual Machine Host, this machine hosts the development and test guest virtual machines (VM's). It's the hardware that provides computing resources, such as processing power, memory, disk and network I/O, and so on. There are two development and test virtual host for redundancy where VM's are moved between each host to provide best performance, balancing workload, network traffic and so on and provides migration from one host to the other in event of a host failure. There is a total of 6 development and test VM's hosted. The development VM guest machines hosted on this server are: FILESERVER01, VSQLD01, VSQLTEST, VSQLTEST01, VSSCF AND WWS02.
20. VMHost04	Product Type: Virtual Machine (VM) Host Server Operating System: VMWare ESXi 4.1 Description: Development and Test Virtual Machine Host, this machine hosts the development and test guest virtual machines (VM's). It's the hardware that provides computing resources, such as processing power, memory, disk and network I/O, and so on. There are two development and test virtual host for redundancy where VM's are moved between each host to provide best performance, balancing workload, network traffic and so on and provides migration from one host to the other in event of a host failure. There is a total of 6 development and test VM's hosted. The development VM guest machines hosted on this server are: FILESERVER01, VSQLD01, VSQLTEST, VSQLTEST01, VSSCF AND WWS02.

Government Support Systems Hardware and Software Resources (Descriptions)	
Device Name	**Description**
21. vmspt01.ndc.nasa.gov	Product Type: Server Operating System: Windows 2008 Standard (x64) Description: This server is used as a backup media server and a VM virtual center. (Server Admin Management Tools). Software installed includes, but not limited to, Symantec Backup Exec 2010 Server, Microsoft SQL 2005 and 2008, Virtual Center 5.0, Microsoft Visual Studio 2008, Broadcom Tools, and Java7update 51.
22. vmspt02.ndc.nasa.gov	Product Type: Server Operating System: Windows 2008 Standard (x64) Description: This server is used as an antivirus management server and a backup media server. (Server Admin Management Tools). Software installed included are Symantec Backup Exec 2010, Microsoft SQL 2005, Symantec Endpoint Manager, Broadcom Tools, and Java7update 51.
23. ECN2189807	Product Type: Printer Operating System: N/A Description: Printer used to support System Administrator printing.

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ENGINEERING SERVICES CONTRACT

APPENDIX F
IT SECURITY REQUIREMENTS

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ESC NNK11EA08C Mod 91		Engineering Systems IT Security Component List									Appendix F
Lab Type	**Lab Name**		**Total Systems**	**Work-stations**	**Lap-tops**	**Servers**	**Virtual**	**Tablets**	**Printers**	**Network Equipment**	**Other**
Support Systems	ESC-2	Office Automation Systems	**226**	14	24			96	89	1	2
	ESC-3	IT Security Systems	**17**	1	15					1	
Development Shops	DS-1	Launch Equipment Test Facility (LETF)	**28**	15	12				1		
	DS-2	EDL Machine Shop	**0**								
	DS-3	Prototype Dev Shop	**9**	2	5				2		
Electrical	EL-1	Sensor & Transducer Dev Lab	**5**	3	1					1	
	EL-2	Instrumental & Data Acquisition Lab	**58**	35	11	3		3		6	
	EL-3	Electronics Development Lab	**54**	30	13	7			3	1	
	EL-4	Control Systems Development Lab	**47**	23	4	12			1	7	
	EL-5	Power Systems Development Lab	**8**	3	5						
	EL-6	Embedded Systems Development Lab	**0**								
	EL-7	Range Technology Development Lab	**62**	20	15	3		1		8	15
IT/COMM	IT-1	Advanced Imaging Lab	**48**	23	5	2		12		5	1
	IT-4	Spaceport Processing Sys Lab	**72**	25	2	11	27			2	5
	IT-6	Electromagnetic Interference Testing Lab	**38**	27	8				3		
Materials	MP-1	Materials Failure Analysis Lab	**7**	7							
	MP-2	Electrical Failure Analysis Lab	**42**	28	8				4		2
	MP-3	Mechanical Failure Analysis Lab	**0**								
	MP-4	Polymer Science & Technology Lab	**2**	2							
	MP-5	Corrosion Technology Lab	**20**	5	2				1	1	11
	MP-6	Physical Testing & Analysis/Vibration Lab	**9**	6	2						1
	MP-7	Metrology Lab	**6**	4					2		
Payloads	PA-1	Flight Experiment Development Lab	**2**		2						
Physical Sciences	PS-1	Applied Chemistry	**26**	13	10				3		
	PS-2	Analytical & Biological Chem Lab	**21**	17	4						
	PS-3	Chemical Analysis Lab	**33**	29	2				2		
	PS-4	Cryo Test Lab	**26**	7	10	1					8
	PS-5	Advanced NDE Lab	**0**								
	PS-6	Applied Physics Labs	**36**	22	12			1		1	
	PS-7	Electrostatic & Surface Physics	**3**	3							
	PS-8	Granular & Regolith Ops Lab	**9**	3	3				3		
Sustainable Systems	SS-3	Micro & Molecular Biology Lab	**1**	1							
	SS-4	Controlled Environments Lab	**18**	18							
	SS-5	SS-5 - Water Processing Lab	**3**	3							
	SS-6	Air Revitalization Lab	**2**	2							
TOTAL			**938**	**391**	**175**	**39**	**27**	**113**	**114**	**34**	**45**

*** Highlighted:** *These systems are under a stop work order (since 1/1/2013), thus IT Security does not perform any work on these. As no work is being done on these, this information is good as of 3/1/2013.*

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ENGINEERING SERVICES CONTRACT

APPENDIX G
ENHANCEMENTS AND IMPLEMENTATION APPROACHES

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ENHANCEMENTS:

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IMPLEMENTATION APPROACHES:

[redacted]

[redacted]

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