AMENI	DMENT OF SOLICITATION	MODIFICATION O	F CONTRACT	1. CONTRACT ID CO	DDE	PAGE 1	OF PAGES
2. AMENDMEN	T/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCH.	ASE REQ. NO.	5. PROJEC	T NO. (If ap	plicable)
000001	200	06/22/2012					
6. ISSUED BY	CODE	HQ	7. ADMINISTERED BY (if other than Item 6) CODE HQ				
	dard Space Flight Center ers Procurement Office MD 20771		NASA/Goddard Sp Headquarters Prod Greenbelt MD 207	curement Office	er		
8. NAME AND A	DDRESS OF CONTRACTOR (No., street, o	county, State and ZIP Code)		(X) 9A. AMENDMEN	NT OF SOLIC	ITATION	
Digital Man	agement Inc. ocracy Boulevard, Suite 500		· •	NO.  NNH11351: 98. DATED (SE 04/08/2011 10A. MODIFICA NNH12CF3 10B. DATED (SE	TION OF CO		DER NO.
CODE	FA	ACILITY CODE	748 77	06/22/2012			
7	11. THIS ITEM	ONLY APPLIES TO	AMENDMENTS OF S	OLICITATIONS			
(a) By completing or (c) By separa PLACE DESIGN amendment you and this amendment 12. ACCOUNTILE CHECK ONE	te letter or telegram which includes a referent NATED FOR THE RECEIPT OF OFFERS PR or desire to change an offer already submitter ment, and is received prior to the opening ho NG AND APPROPRIATION DATA (If require	copies of the amendmen noe to the solicitation and ame RIOR TO THE HOUR AND DAd, such change may be made our and date specified.  ONLY APPLIES TO MOSTHE CONTRACT/ORIOR SUANT TO: (Specify authority CREIMBURSEMENT. (DRDER IS MODIFIED TO RESUANT TO THE AUTHORITY CONTRACTION TO TH	t; (b) By acknowledging recendment numbers. FAILURE of the SPECIFIED MAY RESUlts by telegram or letter, provide DDIFICATION OF CONDER NO. AS DESCRIVED THE CHANGES SET FOR AUG 1987) — ALTEFLECT THE ADMINISTRATIVED FAR 43.103(b).	ipt of this amendment of YOUR ACKNOWLE LT IN REJECTION OF and each telegram or letter of the second	on each copy EDGMENT TO YOUR OFFE or makes refe RS. IADE IN THE	of the offer s D BE RECEIN R. If by virtue erence to the  CONTRACT	/ED AT THE e of this solicitation
	D. OTHER (Specify type of modification and	authority)					
E. IMPORTA	ANT: Contractor is not,	is required to sign this o	document and return	1 copie	es to the is	ssuing offic	 ;е.
14. DESCRIPTI	ON OF AMENDMENT/MODIFICATION (O/g	ganized by UCF section headi	ngs, including solicitation/con	tract subject matter wh	ere feasible.)	ļ	
The purpos	se of this modification is to upda	ate clauses B.1 throug	gh J.1, Attachment I	and Attachment	М.		
replaced w	y, clauses B.1 through J.1 of co ith Revision 1 - NNH12CF39C, MODIFICATION	ontract NNH12CF39C Revision 1 - Attachm	, Attachment I and A nent I and Revision 1	Attachment M are	e deleted I.	in their e	ntirety and
<u>-</u>	annum est (CO TOTAL COLORS)						
15A. NAME AN	ded herein, all terms and conditions of the do D TITLE OF SIGNER (Type or print) KS-Craft, Vice President of Conf		A or 10A, as heretofore change 16A. NAME AND TITLE OF Ricarda Mason				ct.
atriles	Grenofferon Control of person authorized to sign)	15C. DATE SIGNED 06/27/2012	16B. UNITED STATES OF	AMERICA  of Contracting Officer	7)	— 6/	ATE SIGNED

STANDARD FORM 30 (REV. 10-83) Prescribed by GSA FAR (48 CFR) 53.243

#### NNH12CF39C Modification 01

1. Clause B.13 Contract Funding (1852.232-81) (JUN 1990) is revised to provide incremental funding to the CORE portion of the contract as follows:



This allotment of funds covers performance through November 30, 2012

PR#	Accounting and Appropriation Data	Amount
4200450202	10LM020/6100.2572/10/FC000000/437673.09.10/000/ 2570/10/CASX12012D/618I/1/2	\$2,837,794.00
4200451070	10JF000/6100.2572/10/FC000000/618325.36.06.02.10/000 2570/10/CASX12012D/922A/1/2	\$20,000.00
4200451843	10LM020/6100.2572/10/FC000000/437673.09.10/000/ 2570/10/CASX12012D/618I/1/2	\$337,363.00
4200452202	10BC000/6100.2520/10/FC000000/424606.01.02.14.02. 0/1/000/2520/EXCX22012D/733BI/1/2	\$485,302.00
4200452368	10MA000/6100.2520/10/FC000000/449048.08.10/000/ 2520/10/CASX12012D/618I/1/2	\$8,500.00
	10MA000/6100.2520/10/FC000000/449048.08.10/000/ 2520/10/CASX12012D/618I/1/43	\$730.00
Total		\$3,689,689.00

#### NNH12CF39C Modification 01

2. Clause B.11 Estimated Cost and Incentive Fee (1852.216-84) (OCT 1996) for CORE portion of the contract is as follows:

Cost:
Fee:

Total: \$17,077,646.00

3. All other terms and condition remain unchanged.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT  1. CONTRACT ID CODE  PAGE OF PAGES						
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	I A PEO	UISITION/PURCHASE REQ. NO.		1	2
000002	See Block 16C	The state of	DISTRIBUTE ORGINAL REQ. NO.	5. PR	OJECT NO	. (If applicable)
6. ISSUED BY CO		7. ADN	INISTERED BY (If other than Item 6)	CODE	1170	
NASA/Goddard Space Flight Headquarters Procurement C Greenbelt MD 20771	Center ffice	NASA Head	d/Goddard Space Flight Equarters Procurement Enbelt MD 20771	Cent	er	
8. NAME AND ADDRESS OF CONTRACTOR (No., 8						
TO THE MILE AND ADDRESS OF CONTRACTOR (No., 8	treet, county, State and ZIP Code)	(x) <sup>9A</sup>	AMENDMENT OF SOLICITATION NO.			
DIGITAL MANAGEMENT INC.						
6550 ROCK SPRING DR 7TH FLO BETHESDA MD 20817-1124	DOR	9B. I	DATED (SEE ITEM 11)			
		x 10A	MODIFICATION OF CONTRACT/ORDER	NO.		
		I NN.	H12CF39C			
		10B.	DATED (SEE ITEM 13)			
CODE 3BDL6	FACILITY CODE	I	5/22/2012			
	11. THIS ITEM ONLY APPLIES					
The above numbered soficitation is amended as so Offers must acknowledge receipt of this amendmentations A and 15, and returning.	et forth in Item 14. The hour and date s	specified for rec	eipt of Offers ☐ is ext	tended,	is not ex	tended.
THE PLACE DESIGNATED FOR THE RECEIPT ( virtue of this amendment you desire to change an a to the solicitation and this amendment, and is received.  ACCOUNTING AND APPROPRIATION DATA (If	nce to the solicitation and amendment to FF OFFERS PRIOR TO THE HOUR At offer already submitted, such change in ved prior to the opening hour and date required)	numbers. FAIL ND DATE SPEC nay be made by specified.	CIFIED MAY RESULT IN REJECTION OF telegram or letter, provided each telegram	O BE REC YOUR OF	EIVED AT FER. If by lakes refere	ence
10LM020/6100.2572/FC000000	<u>/43/6/3.09.10/000/2</u>	570/10/C	ASX12012D/618I		00,000	
13. THIS ITEM ONLY APPLIES TO	MODIFICATION OF CONTRACTS/OF	RDERS. IT MOI	DIFIES THE CONTRACT/ORDER NO. AS D	ESCRIBE	D IN ITEM 1	14.
A. THIS CHANGE ORDER IS ISSUE ORDER NO. IN ITEM 10A.	D PURSUANT TO: (Specify authority)	THE CHANGE	S SET FORTH IN ITEM 14 ARE MADE IN	THE CON	TRACT	
B. THE ABOVE NUMBERED CONTR appropriation date, etc.) SET FOR	ACT/ORDER IS MODIFIED TO REFL TH IN ITEM 14, PURSUANT TO THE	ECT THE ADM AUTHORITY O	INISTRATIVE CHANGES (such as change F FAR 43.103(b).	s in paying	office,	
C. THIS SUPPLEMENTAL AGREEM	ENT IS ENTERED INTO PURSUANT	TO AUTHORIT	Y OF:			
D. OTHER (Specify type of modification	*-					
	.852.232-81) (JUN 199	90)				
E. IMPORTANT: Contractor 🗵 is not.	is required to sign this documen		O copies to the issuir	ng office.		
14. DESCRIPTION OF AMENDMENT/MODIFICATIO	N (Organized by UCF section heading	s, including sol	citation/contract subject matter where feas	ible.)		
The purpose of this modific Stay on Contract Performan (1852.232-81)(JUN 1990) is	ce." Accordingly,	Clause I	contract funding as a 3.13, Contract Funding	ı resu	ılt of	the
COST						
TROM: b(4) BY:	b(4) TO: b(4)	(IDI)	Minimum Value Fundin	ıg)		
ΈΕ						
ROM: b(4) BY:	b(4) TO:	b(4)	l			
-END OF MODIFICATION						
Continued						
except as provided herein, all terms and conditions of	the document referenced in Item 9A or	r 10A, as hereto	fore changed, remains unchanced and in fi	ull force er	nd effect	
5A. NAME AND TITLE OF SIGNER (Type or print)		16A. NA	ME AND TITLE OF CONTRACTING OFFI	CER (Type	or print)	
			rda Mason			
5B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	D 168, UN	TED STATES OF AMERICA		16C.	DATE SIGNED
(Signature of person authorized to sign)		Ki	ta 110		07	/10/2012
ISN 7540-01-152-80?0		<u> </u>	(Signature of Contracting Officer)	TANDARD		(REV 10.83)

Previous edition unusable

Prescribed by GSA FAR (48 CFR) 53,243

#### REFERENCE NO. OF DOCUMENT BEING CONTINUED **CONTINUATION SHEET** PAGE OF NNH12CF39C/000002 2 2

NAME OF OFFEROR OR CONTRACTOR DIGITAL MANAGEMENT INC

1 NO. A)	SUPPLIES/BERVICES	QUANTITY		UNIT PRICE	AMOUNT
-/	(B)	(C)	(D)	(E)	(F)
	Payment Terms:				
	Net 30 days	ı	1		
	Cost Center: 10LM020 GI Account: 6100.2572 Order:	1			
	FC000000 WBS Element1: 437673.09.10 Item Number:	1			
	000 Commitment Item: 2570 Funds Center: 10 Fund:	1	1 1		
	CASX12012D Functional Area: 618I	1	1		
	FOB: Destination		1		
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AMENDM	ENT OF SOLICITATION/N	IODIFIC	ATION OF CONTRACT		1. CONTRACT ID CODE		PAGE OF PAGES
	ENT/MODIFICATION NO.		3. EFFECTIVE DATE	120	REQUISITION/PURCHASE REG. NO.		1 2
000003					egoistioneronchase reg. No.	5. PR	OJECT NO. (If applicable)
. ISSUED B	Υ	CODE	See Block 16C	7.	ADMINISTERED BY (If other then item 6)	CODE	HQ
leadqua	oddard Space Flig arters Procuremen alt MD 20771	ht Ce	nter	H-	ASA/Goddard Space Fligh Padquarters Procurement Reenbelt MD 20771	t Cent	er
NAME AN	DADDRESS OF CONTRACTOR	(No., stroet,	county, State and ZIP Code;	(x)	9A. AMENDMENT OF SOLICITATION NO.		
IGITAL	MANAGEMENT INC.			۲			
550 RO	CK SPRING DR 7TH A MD 20817-1124	FLOOR	ı		9B DATED (SEE ITEM 11)		
				×	10A, MODIFICATION OF CONTRACT/ORDE NNH12CF39C	R NO.	
					10B. DATED (SEE ITEM 13)		
ODE 3E	BDL8		FACILITY CODE	1	06/22/2012		
			11. THIS ITEM ONLY APPLIES TO	AME			
PGroup:	A. THIS ITEM ONLY APPLI A. THIS CHANGE ORDER IS I ORDER NO. IN ITEM 10A 52.243-2 CHANGES B. THE ABOVE NUMBERED C appropriation data, etc.) SE	SSUED PI S - CC CONTRAC T FORTH	DUFFICATION OF CONTRACTS/ORDER  URSUANT TO: (Specify authority) THE  DIST-REIMBURSEMENT (INTERPLECT  TARDER IS MODIFIED TO REFLECT IN ITEM 14, PURSUANT TO THE AUT  18 ENTERED INTO PURSUANT TO	AUG THE	MODIFIES THE CONTRACTION DER NO. AS INGES SET FORTH IN ITEM 14 ARE MADE INGES SET FORTH IN ITEM 14 ARE MADE INGES (Such as change) of FAR 43 103(b).  ORITY OF:	NTHE CO	NTRACT
IMPORTAN		-	🗵 is required to sign this document ar				
, DEŞÇRIP	TION OF AMENDMENT/MOD/FK	CATION (C	Organized by UCF section headings, is	ciudi	g solicitation/contract subject matter where fe	asible.)	
erforma	ance as a result	of th	<pre>ion is to: (1) che e "Stay on Contract dingly,</pre>	inge : Pe	the effective start dark control to the control of	ate of d; and	contract (2) update
	E SEE PAGE 2 Terms:						
st 30 c							
	stination						
cept as pro	rided herein, all terms and conditi	ions of the	document referènced in Item SA or 10		neretofore changed, remains unchanged and i		
	ed time of signer (Type or p	•	t of Contracts	16	A NAME AND TITLE OF CONTRACTING OF	FICER (7)	pe or print)
	ooks-Craft, Vice Pr	aprined.	\		carda Mason		
Juli	CTORIDEFEROR  NO OUT  (Signature of person authorized to sign		15C, DATE SIGNED 08/27/2012	16	I. UNITED STATES OF AMERICA (Signature of Contracting Officer)		16C DATE SIGNED
N 7540-01- evious ecilio	152-8070	$\subset$	)	-		Prescribed	RD FORM 30 (REV. 10-83) 1 by GSA FR) 53,243

- 1. Clause B.2, Option to Extend is hereby changed from July 25 (start dates) and July 24 (end dates) for Options 1 through 4, to October 1 (start dates) and September 30 (end dates) for Options 1 through 4. The years of each option period remain unchanged.
- 2. Clause F.3, Period of Performance/Effective Ordering Period is hereby changed to read (changes identified in **bold** and *italic*):

The period of performance/effective ordering period of this Contract is from the effective date of the Contract, *October 1, 2012, through September 30, 2013*.

3. DMI's mailing address is revised to read:

6550 Rock Spring Dr 7<sup>th</sup> Floor Bethesda, MD 20817

---END OF MODIFICATION---

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT					1. CONTRACT ID CODE			PAGES	
2. AMENDMENT/MODIFICATION NO. 3. EFFECTIVE DATE					QUISITION/PURCHASE REQ. NO.	5, PR	1 OJECT NO	3 . (If applicable)	
000004		See Blo	ock 16C	See	Schedule			(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
6. ISSUED BY	COD			7. AI	OMINISTERED BY (If other than Item 6)	CODE	HQ	-	
NASA/Goddard Space Flight Center Headquarters Procurement Office Greenbelt MD 20771					NASA/Goddard Space Flight Center Headquarters Procurement Office Greenbelt MD 20771				
DIGITAL 6550 ROO	DADDRESS OF CONTRACTOR (No., str MANAGEMENT INC. CK SPRING DR 7TH FLO A MD 20817-1124		nd ZIP Code)	91	A. AMENDMENT OF SOLICITATION NO.  B. DATED (SEE ITEM 11)  DA. MODIFICATION OF CONTRACT/ORDER N. NH12CF39C	O.			
								<u>_</u>	
CODE 2E	BDL6	FACILITY CO	)DF	1 1	08. DATED (SEE ITEM 13)				
				1 1	06/22/2012				
☐ The about	numbered solicitation is amended as set				MENTS OF SOLICITATIONS  receipt of Offers   is exter		is not ex		
to the solicit	tation and this amendment, and is received.  FING AND APPROPRIATION DATA (19 )  equile  13. This ITEM ONLY APPLIES TO  A. THIS CHANGE ORDER IS ISSUED CROER NO. IN ITEM 10A.	ed prior to the operation of the operati	OF CONTRACTS/ORDER  S: (Specify authority) THE	Ind S. IT M CHAN THE A	GES SET FORTH IN ITEM 14 ARE MADE IN TO DMINISTRATIVE CHANGES (such as changes Y OF FAR 43.103(b).	SCRIBE	9,689.	00	
	D. OTHER (Specify type of modification	e and authoritul							
x	Clause B.13 Contrac		7 /1852 232_1	۵١	/ TUN 1990)				
E. IMPORTAN			to sign this document and						
14. DESCRIPT	TION OF AMENDMENT/MODIFICATION	(Organized by	UCF section headings, inc	luding	copies to the issuing solloitation/contract subject matter where feasibemental funding to the Co	(e.)	portic	on of	
15A. NAME AN		ha dòcument ref	erenced in Item 9A or 10A	16A. Ter	eretofore changed, remains unchanged and in fur NAME AND TITLE OF CONTRACTING OFFICE TENCE L. Haynes UNITED STATES OF AMERICA		pe or print)	DATE SIGNED	
	(Signature of person authorized to sign)			_	Interve of Contracting Officer	gre			

STANDARD FORM 30 (REV. 10-83) Prescribed by GSA FAR (48 CFR) 53.243

AMENDMENT OF SOLICITATION/MODIFIC	ATION OF CON	TRACT	1. CONTRACT ID CODE	PAGE	PAGE OF PAGES		
AMENDMENT OF SOLICITATION/MODIFIC	ATION OF CON	IIKACI		1	2		
2. AMENDMENT/MCDIFICATION NO.	3. EFFECTIVE DA	TE 4.	REQUISITION/PURCHASE REQ. NO.	5. PROJECT N	NO. (If applicable)		
000005	See Block	16C S€	ee Schedule	Į			
6. ISSUED BY CODE	HQ	7.	ADMINISTERED BY (If other than item 6)	CODE HQ			
NASA/Goddard Space Flight Ce Headquarters Procurement Off Greenbelt MD 20771		Н	ASA/Goddard Space Flight eadquarters Procurement reenbelt MD 20771				
8. NAME AND ADDRESS OF CONTRACTOR (No., street	t, county, State and ZIP	(x)	9A. AMENDMENT OF SOLICITATION NO.				
DIGITAL MANAGEMENT INC. 5550 ROCK SPRING DR 7TH FLOO BETHESDA MD 20817-1124	R		9B. DATED (SEE ITEM 11)				
		х	10A. MODIFICATION OF CONTRACT/ORDE NNH12CF39C	R NO.	=		
			10B. DATED (SEE ITEM 13)				
CODE 3BDL8	FACILITY CODE		06/22/2012				
· · · · · · · · · · · · · · · · · · ·	11. THIS ITEM (	ONLY APPLIES TO AME	NDMENTS OF SOLICITATIONS				
CHECK ONE A. THIS CHANGE ORDER IS ISSUED ORDER NO. IN ITEM 10A.	PURSUANT TO: (Sp CT/ORDER IS MOD H IN ITEM 14, PURS	CONTRACTS/ORDERS. Decify authority) THE CH	Increase: IT MODIFIES THE CONTRACT/ORDER NO. AS HANGES SET FORTH IN ITEM 14 ARE MADE E ADMINISTRATIVE CHANGES (such as chan RITY OF FAR 43.103(b). HORITY OF:	IN THE CONTRAC	EM 14.		
D. OTHER (Specify type of modification	and authority)						
X   Clause B.13 Contract	t Funding	(1852.232-18)	(JUN 1990)				
E. IMPORTANT: Contractor X is not.	is required to s	ign this document and re	turnO copies to the is:	suing office.			
14. DESCRIPTION OF AMENDMENT/MODIFICATION The purpose of this modificathe contract. See Page 2					ion of		
Continued  Except as provided herein, all terms and conditions of to 15A. NAME AND TITLE OF SIGNER (Type or print)  15B. CONTRACTOR/OFFEROR			as heretofore changed, remains unchanged and 16A. NAME AND TITLE OF CONTRACTING O Terence L. Haynes 16B. UNITED STATES OF AMERICA				
			Jereme I, Ha	yper	9/28/12		
(Signature of person authorized to sign)			(Signature of Contracting Officer)	<i></i>	1/0-0//-		

STANDARD FORM 30 (REV. 16-83) Prescribed by GSA FAR (48 CFR) 53.243 1. Clause B.13 Contract Funding (1852.232-81) (JUN 1990) is revised to provide incremental funding to the CORE portion of the contract as follows:



This allotment of funds covers performance through November 30, 2012

PR#	Accounting and Appropriation Data	Amount
4200452266	10NC000/6100.2601/10/FC000000/779345.04.10/000/ 2600/10/CASX12012D/618I/1/2	\$51,800.00
4200453338	10LP040/6100.2572/10/FC000000/148537.08.10/000 2570/10/CASX12012D/618I/1/2	\$30,000.00
Total		\$81,800.00

2. All other Terms and Conditions remain unchanged.

End of Modification No. 05

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE	PAGE OF PAGES		
AMENDINE	. TO SOCIOTATION MODIFIC	A HON OF CONTRACT		·	1	2	
2. AMENDME	NT/MODIFICATION NO.	3. EFFECTIVE DATE	4. RI	EQUISITION/PURCHASE REQ. NO.	5. PROJECT	NO. (If applicable)	
000006		See Block 16C					
6. ISSUED BY	CODE	НQ	7. A	DMINISTERED BY (If other than Item 6)	CODE HQ	<u> </u>	
Headqua:	ddard Space Flight Ce rters Procurement Off 1t MD 20771		He	SA/Goddard Space Fligh adquarters Procurement eenbelt MD 20771			
B. NAME AND	ADDRESS OF CONTRACTOR (No., street	, county, State and ZIP Code)	(x) <sup>[5</sup>	IA. AMENDMENT OF SOLICITATION NO.			
			\ <u>^</u>				
	MANAGEMENT INC.						
	CK SPRING DR 7TH FLOOR	₹	اا	B. DATED (SEE ITEM 11)			
BETHESDA	A MD 20817-1124						
			x 1	OA MODIFICATION OF CONTRACT/ORDE VNH12CF39C	R NO.		
			-	OB. DATED (SEE ITEM 13)			
CODE 3B	DL8	FACILITY CODE	7 I	06/22/2012			
		11. THIS ITEM ONLY APPLIES TO	O AMENI	DMENTS OF SOLICITATIONS			
The above r	numbered solicitation is amended as set fo	rth in Item 14. The hour and data she	acified for	receipt of Offers	extended. Disin	nt evtended	
CHECK ONE	41			MODIFIES THE CONTRACT/ORDER NO. AS			
	151			ADMINISTRATIVE CHANGES (such as chan TY OF FAR 43.103(b).	ges in paying offic	9,	
	C. THIS SUPPLEMENTAL AGREEMEN	T IS ENTERED INTO PURSUANT TO	O AUTHO	PRITY OF:			
$\overline{}$	D. OTHER (Specify type of modification	and authority)					
x	Clause B.13 Contract	Funding (1852,232	-18)	(JUN 1990)			
E. IMPORTAN		s required to sign this document			suino office	<u> </u>	
				g solicitation/contract subject matter where fe			
				ding that was incorrec		nd to the	
	rtion of the contract		s Luii	ding that was incorrec	cly appri	ed to the	
See Page	e 2						
				(4			
Continue	ed						
		e document referenced in Item 9A or	10A, as h	neretofore changed, remains unchanged and	in full force and ef	ect.	
	ND TITLE OF SIGNER (Type or print)			NAME AND TITLE OF CONTRACTING O			
				erence L. Haynes			
15B. CONTRA	CTOR/OFFEROR	15C. DATE SIGNED		B. UNITED STATES OF AMERICA		16C. DATE SIGNED	
				Berne I la	M.	12/21	
	(Signature of person authorized to sign)	_	-	(Signature of Contracting Efficer)	1	12/18/12	
	10	<u> </u>				- / - / / -	

STANDARD FORM 30 (REV. 10-53) Prescribed by GSA FAR (48 CFR) 53,243 1. Clause B.13 Contract Funding (1852.232-81) (JUN 1990) is revised to decrease funding to the CORE portion of the contract as follows:



This allotment of funds covers performance through November 30, 2012

PR#	Accounting and Appropriation Data	Amount
4200453338	10LP040/6100.2572/10/FC000000/148537.08.10/000 2570/10/CASX12012D/618I/1/2	\$ -30,000.00
Total		\$-30,000.00

2. Total value of the CORE portion of the contract remains as follows:

Cost:
Incentive Fee:

Total Funding: \$17,077,646.00

3. All other terms and conditions remain unchanged.

End of Modification No. 06

AMENDME	ENT OF SOLICITATION/MODIFIC	ATION OF CON	TRACT		1. CONTRACT ID CODE		GE OF PAGES
2 AMENDME	ENT/MCDIFICATION NO.	3. EFFECTIVE DAT	re la	BEO	JISIT:ON/PURCHASE REQ. NO.		1 2 CT NO. (If applicable)
000007	The state of the s	See Block			Schedule	S. PROJE	CT NO. (ir applicable)
6. ISSUED BY	CODE	HQ		7. ADM	INISTERED BY (If other than Item 6)	CODE I	10
Headqua	oddard Space Flight Ce arters Procurement Off olt MD 20771	nter	1	Head	./Goddard Space Flight quarters Procurement O nbelt MD 20771	L Center	-
DIGITAL 6550 ROG	DADDRESS OF CONTRACTOR (No., street, MANAGEMENT INC. CK SPRING DR 7TH FLOOR A MD 20817-1124		Į.	9B.	AMENDMENT OF SOLICITATION NO.  DATED (SEE ITEM 11)  MODIFICATION OF CONTRACT/ORDER N	0.	
			×	1414	H12CF39C  DATED (SEE (TEM 13)	_	
CODE 3E	BDL8	FACILITY CODE			5/22/2012		
		11. THIS ITEM O	NLY APPLIES TO AM		ENTS OF SOLICITATIONS		
THE PLACE virtue of this to the solici	E DESIGNATED FOR THE RECEIPT OF ( s amendment you desire to change an offer tation and this amendment, and is received TING AND APPROPRIATION DATA (If req aedule	OFFERS PRIOR TO or already submitted, if prior to the opening juired)	THE HOUR AND DAT such change may be r hour and date specific Net	TE SPE made by ed. Inc:	LURE OF YOUR ACKNOWLEDGEMENT TO CIFIED MAY RESULT IN REJECTION OF YO I telegram or letter, provided each telegram of cease:  SI  DIFIES THE CONTRACT/ORDER NO. AS DE	OUR OFFEI r letter mak	R. If by es reference 824.64
	B. THE ABOVE NUMBERED CONTRAC appropriation date, etc.) SET FORTH     C. THIS SUPPLEMENTAL AGREEMEN     D. OTHER (Specify type of modification)	CT/ORDER IS MODII I IN ITEM 14, PURSI T IS ENTERED INTO and authority)	FIED TO REFLECT TO UANT TO THE AUTHO D PURSUANT TO AUT	HE ADI			
X	Clause B.13 Contract						
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	wided herein, all terms and conditions of the ND TITLE OF SIGNER (Type or print)	e document referenc	ed in Item 9A or 10A,	16A. N	Notore changed, remains unchanged and in for AME AND TITLE OF CONTRACTING OFFI PICE L. Haynes	_	
	ACTOR/OFFEROR	150	. DATE SIGNED		Derence L. Ha	gren	16C. DATE SIGNED
NON 7540 04	(Signature of person authorized to sign)				(Signature of Contracting Officer)		

STANDARD FORM 30 (REV. 19-83) Prescribed by GSA FAR (48 CFR) 53.243 1. Clause B.13 Contract Funding (1852.232-81) (JUN 1990) is revised to provide incremental funding to the Core portion of the contract as follows:



This allotment of funds covers performance through March 27, 2013

PR#	Accounting and Appropriation Data	Amount
4200459775	10LM020/6100.2572/10/FC000000/437673.09.10/000 2570/10/CASX22013D/618I/1/2	\$5,000,000.00
4200454133	10JD000/6100.2514/10/FC000000/752374.36.24.02.10/000 2510/10/CASX22013D/922A/1/2	\$3,824.64
Total		\$5,003,824.64

2. Total value of the Core portion of the contract remains as follows:



Total Funding: \$17,077,646.00

3. All other terms and conditions remain unchanged.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE		PAGE OF PAGES	
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	MANAGEMENT INC. CK SPRING DR 7TH FLOOR	2		B. DATED (SEE ITEM 11)			
	A MD 20817-1124			,			
			x 1	0A MODIFICATION OF CONTRACT/ORDER NNH12CF39C	NO.		
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		11. THIS ITEM ONLY APPLIES 1	O AMENI	DMENTS OF SOLICITATIONS	<del>.</del>		
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	B. THE ABOVE NUMBERED CONTRAC appropriation date, etc.) SET FORTH	CT/ORDER IS MODIFIED TO REFLE IN ITEM 14, PURSUANT TO THE A	CT THE A	ADMINISTRATIVE CHANGES (such as changes IY OF FAR 43.103(b).	in paying office,	<u>.</u>	
-	C. THIS SUPPLEMENTAL AGREEMENT	T IS ENTERED ÎNTO PURSUANT T	O AŪTHO	RITY OF:	<u>.</u>		
-	D. OTHER (Specify type of modification	and authority)					
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		e document referenced in Item 9A or	10A, as h	eretofore changed, remains unchanged and in fu	ıll force and effec	t.	
		e document referenced in Item 9A or		eretofore changed, remains unchanged and in fu n NAME AND TITLE OF CONTRACTING OFFIC			
Except as prov	vided herein, all terms and conditions of the	e document referenced in Item 9A or	16,4				
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STANDARD FORM 30 (REV. 10/83) Prescribed by GSA FAR (48 CFR) 53.243 1. Clause B.13 Contract Funding (1852.232-81) (JUN 1990) is revised to provide incremental funding to the Core portion of the contract as follows:



This allotment of funds covers performance through May 31, 2013

PR#	Accounting and Appropriation Data	Amount
4200462215	10DM000/6100.2572/10/FC000000/383807.02.05/000 2570/10/SCEX22013D/728A/1/2	\$1,170,000.00
4200463446	10CH000/6100.2572/10/FC000000/102434,01.03.01,05/000 2570/10/EXPX22012D/201E/1/2	\$631 ,591.00
4200465211	10CH000/6100.2572/10/FC000000/102434.01.03.01.05/000 2570/10/EXPX22012D/201E/1/2	\$1,004,503.00
4200463840	10NAA00/6100.2520/10/FC000000/356085.10.07/000 2520/10/EDUX22013D/137B/1/2	\$244,996.00
Total		\$3,051,090.00

2. Total value of the Core portion of the contract remains as follows:



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3. All other terms and conditions remain unchanged.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE	PAGE	E OF PAGES
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NASA/Goddard Space Flight Ce Headquarters Procurement Off Greenbelt MD 20771	enter	1	Head	A/Goddard Space Flight of dquarters Procurement Of enbelt MD 20771	Center	×
8. NAME AND ADDRESS OF CONTRACTOR (No., street) DIGITAL MANAGEMENT INC. 6550 ROCK SPRING DR 7TH FLOOM BETHESDA MD 20817-1124		(P Code)		AMENDMENT OF SOLICITATION NO.  DATED (SEE ITEM 11)		
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D. O'THER (Specify type of modification						
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15B, CONTRACTOR/OFFEROR		5C. DATE SIGNED	16B.	UNITED STATES OF AMERICA Flerica L. Alexa	ver	16C. DATE SIGNED 5/07//3
(Signature of person authorized to sign)	<u> </u>		L	(Signature of Contracting Officer)		13/0///3

STANDARD FORM 30 (REV. 10-83) Prescribed by GSA FAR (48 CFR) 53.243 1. Clause B.13 Contract Funding (1852.232-81) (JUN 1990) is revised to provide incremental funding to the Core portion of the contract as follows:



This allotment of funds covers performance through June 30, 2013

PR#	Accounting and Appropriation Data	Amount
4200474415	10LM020/6100.2572/10/FC000000/437673.09.10/000 2570/10/CASX22013D/618I/1/2	\$1,400,000.00
Total		\$1,400,000.00

2. Total value of the Core portion of the contract remains as follows:

Cost:

Incentive Fee:

Total Funding: \$17,077,646.00

- 3. Liteshia Dennis is added as Alternate Contracting Officer Representative to the contract.
- 4. All other terms and conditions remain unchanged.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE		PAGE OF PAGES	
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DIGITAL	ADDRESS OF CONTRACTOR (No., street MANAGEMENT INC. K SPRING DR 7TH FLOOI			AMENDMENT OF SOLICITATION NO.  DATED (SEE ITEM 11)			
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			10	B. DATED (SEE ITEM 13)			
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15B. CONTRA	CTOR/OFFEROR	15C. DATE SIGNED		UNITED STATES OF AMERICA		16C. DATE SIGNED	
	Signature of person authorized to sign)		-	Lever of Contracting Officer	er	5/16/13	

STANDARD FORM 30 (REV. 10-83) Prescribed by GSA FAR (48 CFR) 53.243 1. Clause B.13 Contract Funding (1852.232-81) (JUN 1990) is revised to provide incremental funding to the Core portion of the contract as follows:



This allotment of funds covers performance through June 30, 2013

PR#	Accounting and Appropriation Data	Amount
4200474969	10NC000/6100.2601/10/FC0000000/779345.04.10/000 2600/10/CASX22013D/618I/8013/140122/1	\$27,188.42
Total		\$27,188.42

2. Total value of the Core portion of the contract remains as follows:

Cost:
Incentive Fee:

Total Funding: \$17,077,646.00

3. All other terms and conditions remain unchanged.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			ITRACT	1. CONTRACT ID CODE		F PAGES
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6550 RO	CK SPRING DR 7TH FLOO A MD 20817-1124	DR		9B. DATED (SEE ITEM 11)		
			x	10A. MODIFICATION OF CONTRACT/ORDE NNH12CF39C	R NO.	
				10B. DATED (SEE ITEM 13)		
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	oks-Craft, Senior Vice Presidence of the Control of			Terence L. Haynes		C DATE SIGNED
Tyle	CY Brooks—Craft (Signer re of person euthorized to sign)		05/31/2013	Hume L. Hary (Signature of Contracting Ontoff)	nes-	5/3///3

STANDARD FORM 30 (REV. 10,83) Prescribed by GSA FAR (48 CFR) 53,243

# CLAUSE J.1, ATTACHMENT A PERFORMANCE WORK STATEMENT

# **FOR**

# HEADQUARTERS INFORMATION TECHNOLOGY SUPPORT SERVICES (HITSS)

NNH12CF39C

**MAY 8, 2013** 

**NASA Headquarters** 

**Information Technology and Communications Division (ITCD)** 

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6.0 NASA HQ Data Center7.0 Systems Engineering and Integration (SE&I)	
	64
7.0 Systems Engineering and Integration (SE&I)	

#### 1.0 Introduction

The Chief Information Officer in the NASA Headquarters Information Technology and Communications Division (ITCD) is providing this Performance Work Statement (PWS) on behalf of NASA Headquarters. The purpose of this Performance Work Statement is to provide a framework for information technology support services to NASA Headquarters.

The mission of NASA Headquarters is to provide overall guidance and direction to the Agency. Headquarters is organized into four Mission Directorates (Aeronautics, Exploration Systems, Science, and Space Operations), the Mission Support Directorate, and several Administrator Staff Offices, including the Chief Financial Officer, Chief Information Officer, Chief Technologist, and Chief Engineer.

The mission of ITCD is to support NASA Headquarters (HQ) by providing quality IT services, enabling HQ customers to accomplish NASA's mission. ITCD's vision is to deliver reliable, innovative and respected IT solutions. Its key organizational values are integrity, responsibility, helpfulness, effectiveness, and collaboration. As the Agency is moving forward with the NASA IT Infrastructure Integration Program (I<sup>3</sup>P), collaboration is of special importance.

The HQ IT Support Services (HITSS) Contractor is expected to:

- a. Provide expert advice and value-added guidance to Headquarters in developing cost effective solutions for its customer's IT requirements;
- Provide an IT environment that fosters development of custom applications in a robust and evolving environment and takes full advantage of industry standards and emerging technologies;
- c. Operate the NASA Headquarters data center environment in an efficient and effective manner;
- d. Support IT requirements that utilize specialized IT skills and knowledge of technology trends to significantly increase user productivity and efficiency;
- e. Provide excellent customer service for a variety of IT disciplines and functional areas;
- f. Incorporate IT security in all aspects of the work to ensure protection of NASA Headquarters' data and systems;
- g. Effectively collaborate with other Headquarters and Agency IT Contractors to provide seamless services to customers; and
- h. Ensure that all IT activities meet all applicable Federal, OMB, OPM, Agency, and Headquarters requirements.

The specific support services required under this contract include: planning and management of information systems; life-cycle support for applications and information systems; operation of

the NASA HQ Data Center; systems engineering and integration services; IT security; technology innovation and infusion; and customer support.

Not included within scope of this PWS are services provided through the NASA I<sup>3</sup>P initiative and the NASA Shared Services Center (NSSC). The HITSS Contractor shall collaborate and integrate with the I<sup>3</sup>P Contractors as well as the NSSC Contractor providing NASA-wide Enterprise Service Desk (ESD) and Enterprise Service Request System (ESRS) services. A high level view of the five I<sup>3</sup>P acquisitions includes the following enterprise services:

- ACES (Agency Consolidated End-user Services): End-User Services to include NASA desktops, laptops, cell phones, Personal Digital Assistants (PDAs), Agency-wide Active Directory, e-mail and calendaring functionality;
- NICS (NASA Integrated Communications Services): Communications Services to include data, voice, video, LAN and WAN services;
- NEDC (NASA Enterprise Data Center): Data Center Services to include application/data hosting and housing;
- WEST (Web Enterprise Service Technologies): Web Services to include public-facing website hosting and applications; and,
- EAST (Enterprise Applications Service Technologies): Enterprise Applications Services

   to include applications services associated with the NASA Enterprise Applications
   Competency Center and Agency-wide collaboration services including NASA's Identity,
   Credentialing, and Access Management (ICAM) in addition to new intranet environments and applications.

This PWS represents a comprehensive set of core requirements in the areas of program management, program-wide services, customer relationship management, application development and information management, NASA HQ Data Center support, systems engineering and integration, and IT security. Other related services may be required during the life of the contract to provide direct support to Mission Directorates and Mission Support organizations in the areas of dedicated system development and/or subject matter expert support. These other services will be ordered through the indefinite delivery, indefinite quantity provisions of the contract.

# 2.0 Program Management

Effective program management is the cornerstone of successful contract execution. The Contractor will be responsible and accountable for ensuring the quality and timeliness of products and services delivered under this contract. This requires technical expertise and the ability to establish technical credibility among HQ customers. However, good program management also includes, but is not limited to, the following characteristics:

- <u>Leadership</u> The Contractor's program management team should lead its team by example toward the successful accomplishment of its mission, despite the problems that any program/project will encounter. Leadership implies more than managerial skills. It includes looking ahead to see the big picture, anticipating potential problems, resolving them as quickly as possible, and providing the environment that enables the team to be successful. Commitment to excellence and respect for team members and partners are strong elements of leadership.
- <u>Communications</u> The Contractor is responsible for doing its part to facilitate productive communications among all parties, including the Government, customers, and other service providers. Open communications and transparency breeds trust and mutual respect, even if the news isn't always good news. Involving the right people in the conversations can lead to quicker problem solving and a stronger team.
- Managing Relationships Building and maintaining effective relationships with stakeholders is critical to success of this program. Stakeholders include HQ management, customers, other NASA Centers, and other service providers that depend on services performed under this contract. Managing expectations is an important component of healthy relationships – don't over-promise or under-deliver.
- <u>Teambuilding</u> A strong, integrated Government-Contractor team is supportive and proactive. Good program management includes strategies to keep the team together and working toward mutual goals.
- <u>Institutional Support</u> Although technical expertise is important, a strong organization with access to resources for staffing and budgeting is a critical component of effective program management.

Other program management requirements specific to this contract include:

# 2.1 Online Documentation Environment for Metrics, Analysis and Deliverables (On DEMAnD)

Throughout the life of this contract, the Contractor shall leverage opportunities for collaboration and shall satisfy all stated deliverables and metrics that are identified throughout this PWS. The Government requires minimizing the submission of paper documents during this contract and maximizing the online discovery of and relationship between documentation, inventory assets, plans and analytical artifacts. To accomplish this, the Government expects the Contractor to establish, provide, and then continue to develop and enhance an online environment that achieves the following goals:

a. provides a secure site for Contractor and HQ personnel to collaborate in the execution of HITSS activities and to develop products. Content posted to the site shall include

- linkages to and between related deliverables and supporting artifacts, outage notifications, training documentation, technical documentation, task order documentation, security plans, baselined inventory, standard procedures, as-built drawings, processes, guidelines and DRDs (Data Requirements Documents);
- b. leverages existent authoritative data sources such as IDAMS, Solarwinds, Nagios, server logs, and configuration management databases (e.g. ROSA (Repository of Supported Applications), RAM (Rational Asset Manager), STACR (Subversion/Trac Application Code Repository)), procedural databases (e.g. SOPR (Standard Operating Procedures Repository)) and graph-based data aggregation systems (e.g. RTC CR Module (Rational Team Concert)). HQ currently has 212 SOPs in SOPR and uploads approximately 120 documents in to ROSA per month;
- c. establishes technical approaches, procedures, standards and mechanisms to ingest new authoritative data sources in to the On DEMAnD service;
- d. ensures visibility, at varying levels as appropriate, to project plans and management activities, including schedule, resources, milestones, and trending sufficient to discuss alternatives or priority tradeoffs;
- e. contains current information as well as history of key areas to determine risks, mitigations and areas for improvement;
- f. can be leveraged as the environment to ingest data from authoritative sources outside of HQ for the purpose of activity reporting (e.g. On Boarding);
- g. manages service requests by utilizing on-line tools that enable users to initiate and track them through an online system, and integrates this system with the NSSC's Enterprise Service Desk and Enterprise Service Request System;
- h. is accessible, at varying levels as appropriate, via web browsers to the Contracting Officer's Technical Representative (COTR), Contracting Officer (CO), ITCD Performance Monitors, Mission Directorate and Mission Support Task Managers, and other HQ personnel;
- i. contains financial reporting, task order management, invoicing and similar business information from the contractor's business system;
- j. provides ability to view documents and analysis and an option to download;
- k. is searchable, sort and retrievable by relationships and/or by common attributes;
- 1. provides an index and explanations of variances for metrics falling outside the minimum standard; and
- m. provides visibility into all aspects of technology updates including schedules for quarterly refresh, bi-annual technical infusion, prototypes, pilots, and plans.

DRD	Description	Frequency
DRD #1	Documentation environment	Updated and available weekly
	of metrics, analytics and	during the first two months of
	deliverables implementation	contract start date; enhancements
	plan and migration schedule.	and additional content added
		monthly thereafter until established
		baseline schedule is met.

#### 2.2 Contract Transition and Stabilization

The contract transition and stabilization period will be from contract award and continue for six months. There are several plans, reports and reviews the government requires during the first 6 months of the contract and theses activities shall be well coordinated, tightly integrated, and professionally implemented. The goals will be to provide uninterrupted services to our customers, continuous visibility in to the performance of transition activities, and continued improvement.

Technical performance incentives for the first six months of the contract will be focused on five overarching plans that are foundational to the success of contract transition and stabilization activities and the continued success for the duration of the contract. The plans are:

- Application Service Framework
- Application Service Roadmap and Implementation Plan
- Data Center Modernization Plan
- Legacy Application Disposition Plan
- Training Program and Outreach Plan

These plans along with a successful closure of actions from the ORR and with customer satisfaction surveys from key stakeholders will form the basis of the incentive fee available.

In support of contractor transition activities the contractor shall:

- a. deliver a detailed integrated schedule depicting status for each of the discrete transition activities;
- b. ensure uninterrupted service delivery from data center assets;
- c. ensure uninterrupted IT security surveillance and services;
- d. ensure software, hardware, application and similar maintenance and license agreements are covered and transitioned;
- ensure application development activities are uninterrupted and that software development assets are transitioned to assure that development effort schedules are maintained;

- f. ensure projects in development are transitioned in a manner where customer satisfaction will be maintained or improved;
- g. ensure Operational Level Agreements (e.g. with the NASA Data Center, ACES, NSSC) and Task Orders are signed and in place;
- h. ensure customer outreach and communication activities are maintained or improved; and
- i. ensure DRDs and plans are delivered and available.

Description	Frequency
Transition plan and integrated schedule	Available at contract start date with significant weekly updates for the transition period up to Operational Readiness Review and acceptance.
	Transition plan and

Metric	Description	Performance Level to Achieve Fee
Metric #T&S-1	Completion of Actions from	90% - 95% of the actions are
	Operational Readiness	completed by the due date.
	Review (ORR). Outstanding	
	actions from the ORR shall	
	be completed within the	
	required time period.	
Metric #T&S-3	Stakeholder Satisfaction	91%-94% meet the criteria.
	with Transition and	
	Stabilization. Stakeholder	
	ratings from transition shall	
	be no less than a "4" on a	
	scale of 1-5 with "5" being	
	the highest.	

#### 2.3 Program Management Reports and Reviews

A goal for the ITCD and HITSS team is for management and staff to be aware of program/project status on a continuous basis facilitated by precise, accurate and timely reporting and reviews. In addition to face-to-face meetings, the Contractor shall provide and promote online postings of current knowledge products in an orderly and intuitive manner and minimize the need to generate and email products for distribution. The success of this service should minimize issues of versioning, multiple email attachments and enable meetings to focus more on details of status, issues, initiatives and opportunities. To support specific meeting requirements the Contractor shall:

- a. provision scheduling, invitation lists, and accurate documentation of minutes and actions;
- b. plan, operate and support daily operational status tag-up meetings to brief the team on previous day's issues/status and current day's plans, review of escalated Service Requests (SRs), status of critical operational issues;
- c. plan, operate and support weekly Configuration Control Board (CCB) meetings to review Services Requests, Preliminary Design Reviews (PDR), Critical Design Reviews (CDR), and Operational Readiness Reviews (ORR) status, changes to the baseline, issues of cross-Contractor or cross-service support and similar CCB functions; and
- d. plan, operate and support monthly program meetings, and other forums/reviews as required to ensure focus on specific issues requiring leadership attention and coordination such as project risk versus planned, priority adjustment requests and analysis, outstanding critical project or program issues.

DRD	Description	Frequency
DRD #3	Contract Status Meeting.	Monthly – no later than last week of the month.
DRD #4	Daily Tag Up Review.	Daily.

#### 2.3.1 Plan Development

A plan gives the government and the Contractor a mechanism to achieve desired results. It must be fact-based, implementable, and sustainable. As such, all plans delivered shall:

- a. align with an identified goal or goals that have previously been concurred in by the Government:
- b. identify the required skills needed;
- state that overall implementation can be accomplished within the estimated cost of the contract, or includes an estimated cost and basis of estimate (must provide both to successfully meet this element);
- d. discuss technology maturity that can be supported within the current or projected NASA IT infrastructure;
- e. include 5-10 quantifiable short-term objectives that will be accomplished over the succeeding six months (does not apply to the Application Service Framework); and
- f. be delivered and available on or before the due date.

Metric	Description	Performance Level to Achieve Fee
Metric #T&S-2	Content of Selected Initial	86%-92% of the required elements
	Plans. The following Initial	are included.
	Plans will include the	
	required elements specified	
	in the PWS and IFQAP:	
	-Application Service	
	Framework	
	-Application Service	
	Roadmap and	
	Implementation Plan	
	-Data Center Modernization	
	Plan	
	-Legacy Applications	
	Disposition Plan	
	-Training Program and	
	Outreach Plan	

#### 2.3.2 Plan Updates

Plans are often subject to new requirements, new constraints, and new technology opportunities. To effectively manage our workload, all plans shall be kept up to date and the relative priorities of plans shall be reflected in a Program-wide integrated schedule. All plan updates shall:

- a. be kept current reflecting changes within 48 hours of project scheduled updates and approved re-baselined activities;
- b. be reflected to the second level milestone in a Program-wide integrated schedule to the second milestone level; and
- c. adhere to the plan's objectives unless variances are approved.

Additionally, the five overarching plans shall:

- d. align with an identified goal or goals that have previously been concurred in by the Government:
- e. identify the required skills needed;
- f. state that overall implementation can be accomplished within the estimated cost of the contract, or includes an estimated cost and basis of estimate (must provide both to successfully meet this element);
- g. include specific actions taken during the past six months, and associated results, that definitively demonstrate that the objectives from the previous update or plan have been accomplished;
- h. includes 5-10 quantifiable short-term objectives that will be accomplished over the succeeding six months; and
- i. be delivered and available on or before the due date.

Metric	Description	Performance Level to Achieve Fee
Metric #1	Content of Selected Initial	83%-95% of the required elements
	Plans Updates. Semi-annual	are included.
	updates to the following	
	Plans will include the	
	required elements specified	
	in the PWS and IFQAP:	
	-Application Service	
	Framework	
	-Application Service	
	Roadmap and	
	Implementation Plan	
	-Data Center Modernization	
	Plan	
	-Legacy Applications	
	Disposition Plan	
	-Training Program and	
	Outreach Plan	
Metric #2	Accomplishment of Plan	81%-92% of the objectives are
	Objectives. All objectives	completed.
	identified in the semi-annual	
	updates to the following	
	plans will be met:	
	-Application Service	
	Roadmap and	
	Implementation Plan	
	-Data Center Modernization	
	Plan	
	-Legacy Applications	
	Disposition Plan	
	-Training Program and	
	Outreach Plan	

#### **2.4 Integrated Master Schedule**

The Contractor shall develop and maintain an ITCD Integrated Master Schedule (IMS) of all ongoing and planned activities. The primary purpose of the ITCD IMS, for use by the Contractor and Government, is to provide a day-to-day tool for executing the HQ IT Program, tracking individual project technical and schedule status sufficiently to depict any significant risks and priority trade-offs. It also serves to strengthen the effectiveness of Contractor/Government communications, providing an early warning system of issues and concerns regarding critical projects. The Contractor shall:

- a. when specified by the COTR, include those projects for which the Contractor is not primarily responsible;
- b. create and maintain the IMS using a scheduling tool that utilizes features such as resource loading and project dependencies to facilitate accuracy in reprioritization scenarios;
- c. enable alternate categorization views that group projects by strategic portfolio, by department, or resources;
- d. provide secure web access to the IMS for NASA and Contractor project management leads;
- e. use IMS briefings to ITCD staff, including progress assessments, identification of problems and workarounds, and a discussion of critical path activities and urgent priorities; and
- f. provide schedule adherence data that summarizes schedule performance for all milestones to include reporting of project re-baselines with explanations.

DRD	Description	Frequency/Standard
DRD #5	Integrated Master Schedule	Updated every 2 weeks from month
	with ability to drill down to supporting data, including	two of contract start date.
	resource loading.	
DRD #6	Project Schedule Adherence	Monthly – no later than second
	Report.	week of the month.

Metric	Description	Performance Level to Achieve Fee
Metric #3	Adherence to Project	94% - 97% meet the criteria.
	Schedules. For all new	
	Service Requests completed	
	during the evaluation period,	
	all end dates shall be met in	
	accordance with the baseline	
	schedule.	

#### 2.5 Project Management

Effective coordination and implementation of tasks is critical to the management of multiple activities of different sizes and types. The Contractor shall implement project management tools and techniques for measuring progress and to achieve successful completion of project goals and objectives.

The Contractor 's activities shall be consistent with NASA Procedural Requirements (NPR) 7120.7, NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements.

ITCD requires project management and tracking support for both internal and external projects. Internal projects are projects that are directly assigned to the Contractor by ITCD. An internal project could be a project sponsored by any HQ office and have a significant IT content. In providing this support, the Contractor shall use the governing documents specified by the requiring HQ office.

External projects are projects where the implementation lead is not the HITSS Contractor but where the Contractor shall be responsible for coordination, participation, or analysis. The Contractor shall provide comments and recommendations to HQ on project plans prepared by other Contractors and other NASA Centers, the Office of the CIO, or other Government agencies.

#### 2.6 Risk Management

The Contractor shall identify and characterize IT-related risks, devising mitigation steps, and monitoring risks and mitigation activities on an ongoing basis. The Contractor shall provide support in drafting, for NASA consideration, risk management plans associated with IT investments. The requiring office will specify the format and overall requirements for the risk management activities, including the risk management plan. Those requirements shall be consistent with NASA policy concerning risk management. Currently, the following policy documents are relevant to this activity: NPR 8000.4 (Risk Management Procedural Requirements), Procurement Information Circular (PIC) 99-09 (Risk Management), NPR 7120.5 (NASA Program and Project Management Requirements and Processes), and NPR 2810.1 (Security of Information Technology).

#### 2.7 Quality Assurance

The Contractor shall ensure the quality of Contractor provided products and services. The Contractor is responsible for assuring conformance of products to requirements, methods, and standards established by NASA, including verification and validation of products and services delivered under this contract. This shall include software assurance for all applications development activities. The Contractor shall provide, implement, and maintain a quality assurance process that includes plans and procedures to ensure that products and services delivered conform to contract requirements, reflect industry best practices, and are consistent with a lifecycle approach.

#### 2.8 Logistics and Property Management

The Contractor shall maintain accurate asset records for all Government property for which the Contractor is responsible. This includes but is not limited to hardware, hardware maintenance, software, and software licenses. The records in the NASA property management application (e.g., N-PROP) shall be kept up to date. The Contractor shall conduct periodic inventories and

adhere to the pertinent provisions and procedures of the most current NASA property management regulations. The contractor shall describe how they will meet the requirement and process for managing the onsite government property, government furnished equipment, and contractor acquired property. The Contractor shall, based on original quantity of inventory items, maintain lost property rate at 0.25% or less per year.

DRD	Description	Frequency
DRD #7	Logistics Management Plan.	Three months after contract start
		date.

#### 2.8.1 Support for Onsite Contractors

The Government shall provide office, desk and associated infrastructure to house up to 28 contractor employees for onsite support of the core requirements at NASA Headquarters. This includes, but is not limited to required onsite support in the following functional areas: Data Center Operations, Systems Engineering and Integration Test Facility, Video Teleconference Systems Support, User Resource Center, Computer Training Center, and Communications Security Support and Services (COMSEC). Additional office space may be made available for support of task orders under the IDIQ portion of the contract.

#### 2.9 Contractor Training

The Contractor is responsible for all technical training of Contractor staff, unless otherwise directed by the Government. The Contractor shall provide technical staffing proficient in the tools and technologies utilized and supported under this contract. The Contractor may seek an exception when directed to implement a new technology and it is in the Government's best interest to utilize existing contract staff.

# 3.0 Program-wide Services

A goal of this contract is to provide an approach that will provide exceptional support across the program. Program-wide Services are those support activities that traverse all functional areas including; Enterprise Architecture, Concept of Operations, Problem and Incident Management, Change Management, Configuration Management, Safety, and Records Management. Customer Relationship Management and Service Delivery (section 4) are crosscutting for HITSS and extend to Agency Service Requests and Help Desk Management.

#### 3.1 Enterprise Architecture

Enterprise Architecture (EA) is a comprehensive framework being used to manage and align NASA's Information Technology (IT) portfolio with its operational characteristics. The EA defines how information and technology will support the business operations and provide benefit for the business and illustrates an organization's core mission and each component critical to performing that mission. Critical components of the EA include:

- Guiding principles
- Organization structure
- Business processes
- Stakeholders
- Applications, data, and infrastructure
- Technologies upon which networks, applications and systems are built, and
- Security plans associated with these applications and systems.

#### 3.1.1 HQ Enterprise Architecture Program

It is the mission of the NASA HQ Enterprise Architecture Program to engage stakeholders to better understand their mission requirements, and then apply architecture methods, tools, and products to produce higher fidelity information that improves their integrated planning, decision-making, and service delivery. The Contractor shall support NASA in developing and maintaining an architecture that is mission enabling, integrated and efficient. Subject to the issuance of service requests, the Contractor shall:

- a. in conjunction with ITCD, engage stakeholders to proactively seek to understand their business challenges and needs before enabling architectural decisions;
- b. act collaboratively to promote Agency-wide interaction in everything that it does;
- c. foster transparency by making all of its decisions and artifacts available for Agencywide consumption as is practical given security constraints and stakeholder concerns;
- d. be agile so that it can respond quickly to changing business priorities, requirements, and demands from internal and external stakeholders;
- e. communicate effectively to foster understanding about the role that enterprise architecture plays in enabling the stakeholder to meet its goals;
- f. value diversity when as it seeks to facilitate building a consensus between NASA stakeholders in developing and gaining buy-in to future state architectures, implementation plans, projects, and operations;
- g. build trust by ensuring all of its activities are aligned and in support of our stakeholders' needs;
- h. promote innovation by providing visibility into how new technologies can be applied,

- i. demonstrate competence in their broad understanding of the NASA business environment, and how the strategic use of IT can help enable business achievement,
- j. capture and maintain the elements of the Current State Architecture used in determining gaps with the Future State Vision and obtains consensus with the Agency's stakeholders; and
- k. develop the Future State Vision and maintain the Current State Architecture in the same general format to enable comparisons, gap analysis and trending data reporting.

The Current State Architecture does not attempt to document everything. Only the information that is necessary to make strategic decisions are documented and/or maintained. When persistent data is required, maintenance should be a matter of process and not a discrete activity.

The HQ Enterprise Architecture Team expects the Contractor to adhere to EA overarching principles. The Contractor shall:

- a. integrate Enterprise Architecture throughout the business lifecycle and not as a discrete activity or independent activity;
- b. provide enhanced understanding for decision makers to make informed decisions;
- c. use Enterprise Architect as a strategic tool before decisions are made so that the decisions are founded in logic based on the Agency's vision, Strategic Plan, customer requirements and current assets; and
- d. employ Enterprise Architecture as a distributed responsibility; many domains of expertise influence all areas of architecture development.

It is anticipated that NASA will have an EA program plan baselined by the start of the HITSS contract and each NASA center will have an EA plan consistent with the Agency direction. The HITSS Contractor shall:

- a. adopt the HQ center EA plan and make recommendations for improvement within the first 240 days of contract award; and
- b. maintain, update and assure alignment with the Agency EA plan and with the EA plans from other NASA centers to most appropriate level.

DRD	Description	Frequency
DRD #8	HQ Enterprise Architecture Plan Updates.	8 months after contract start date.
	Pian Opuates.	

# **3.2 Operational Level Agreements**

The Contractor shall develop Operational Level Agreements (OLAs) as necessary with other Contractors (e.g., I<sup>3</sup>P Contractors and other HQ Contractors) to ensure clarity regarding availability, responsiveness, functionality and return to service. To provide transparency to NASA customers and providers, OLAs shall be in a consistent format, be published and available. Variance reporting is required as needed.

DRD	Description	Frequency
DRD #9	Operational Level	Initial set due 3 months after contract
	Agreements.	start; subsequent due in accordance with
		Government schedules.

# 3.2.1 Problem and Incident Management

The Contractor shall implement and sustain Problem and Incident Management Processes in accordance with the NASA OCIO ITIL implementation strategy. The contractor shall implement and sustain Problem and Incident Management Processes with the goal of preventing problems and resulting incidents from happening. The purpose of Problem Management is to provide a pre-defined and approved process for managing the lifecycle of all problems to include diagnosis, determination of resolutions, implementing solutions through appropriate control and change management procedures, trending and preventing problem recurrence. The purpose of Incident Management is to deal with all unplanned interruptions to an IT service or a reduction in the quality of IT service. This can include failures, questions or queries reported by users via telephone, email, face-to-face, or automatically detected and reported by event monitoring tools. The primary goal of Incident Management is to restore normal service operation as quickly as possible, minimize adverse impact on business operations, document sufficiently to facilitate substantive analytics (e.g. root cause), and ensure that the best possible levels of service quality and availability are maintained. The contractor shall implement and sustain a work management tracking system to ensure effective Problem and Incident Management. The contractor shall be responsible for:

- a. designing and implementing Problem and Incident Management procedures;
- b. identifying problems by proactively performing on-going trend analysis on Incident information;
- c. documenting, tracking and managing all problems and incidents;
- d. investigating and diagnosing problems in collaboration and coordination with Government, I<sup>3</sup>P contractors and other contractors;
- e. retaining ownership of each problem/incident assigned by either the Enterprise Service Desk or Government Service Integration Management (SIM) office;
- f. validating problem workarounds;
- g. maintaining regular communications between all parties to include ITCD, HQ users, the Enterprise Service Desk, the Service Integration Management office, and other NASA contractors as appropriate;
- h. performing Root Cause Analysis and as appropriate develop Corrective Action Plans;
- i. resolving problems/incidents in collaboration and coordination with ITCD and other NASA contractors such as I<sup>3</sup>P contractors.

DRD	Description	Frequency
DRD #10	Report on response times, ticket aging, and customer satisfaction, delivered.	1 month after contract start date and monthly after that.
DRD #11	Root Cause Analysis and Corrective Action Plan.	As requested by ITCD.

The following metrics are associated with Problem Management during Prime Time hours:

Metric	Description	Performance Level to Achieve Fee
Metric #4	Problem Ticket Response Time.	Meet metrics 93%-96% of the time.
	Respond to problem tickets	
	within 4 business hours (time to	
	first response), resolution time	
	within 3 business days, and user	
	completion notification within 4	
	hours of ticket closure.	
Metric #5	Prime Time Password Resets.	Meet metrics 90%-95% of the time.
	Respond to application password	
	reset requests during Prime Time	
	hours within 30 minutes and	
	accomplish resets within 60	
	minutes.	
Metric #6	Restore Prime Time Service	Meet response and mitigation metrics
	Outages for Applications and	90% - 95% of the time.
	Servers. For service outages	
	affecting more than one person,	
	respond within 5 minutes with	
	daily updates provided until the	
	outage is mitigated.	
Metric #7	Resolve Prime Time Application	Meet response and mitigation metrics
	and Server Hardware and	90% - 95% of the time.
	Software Problems. For reported	
	hardware and software problems,	
	respond within 30 minutes with	
	a fix accomplished within 12	
	prime-time business hours.	

# 3.3 Configuration Management

Configuration management (CM) is critical to HQ's complex integrated IT environment as it provides process and products that assure or aid in the clear and accurate understanding of our IT assets, their function (services provided, etc.), their form (platform, OS, etc.) and their fit (location, reliance, dependency, etc). Accurate CM is the cornerstone for efficient operations, effective IT Security, and agile adaptation to change. The contractor shall maintain and enhance the HQ's CM program, incorporating all practical portions of the existing ITCD CM practices and adapting and modifying the program as new conditions and requirements arise.

A motivating driver for a quality CM program is to assure appropriate rigor is applied to project execution and that changes to the infrastructure do not adversely or unexpectedly impact services, costs, or inhibit strategic goals. It essential that the review processes (e.g. Service, Request Review Team. Service Requirements Review, Preliminary Design Review, Critical Design Review, Test Readiness Review and Operational Readiness Reviews) are adhered to and that documentation is accurate, current, and complete (e.g. Systems Description Document, Version Description Document, Change Requests Documents, Security Review Documents, Design Specification and Requirements Specification).

One of the CM goals is to communicate our baseline and our changes to a wider community. NASA HQ has several repositories that provide essential infrastructure information for systems and services. These repositories consist of the HQ Applications ROSA, SOPR, STACR, and IBM Rational as well as Agency wide repositories such as DDI (DNS, DHCP, IPAM) and IDAMS (IT Discovery and Application Mapping Service). Because the monitoring of infrastructure and services is reliant on the accuracy of the source data, the contractor shall ensure that the sources are maintained, kept up-to-date and ensure secured web access to baseline documentation, linkages to procedures, linkages to applications and the ability to view from system, service, customer, portfolio and other query vectors.

### 3.3.1 Configuration Management Plan

The Configuration Management Plan may require updates to adapt to new processes, organizational structures or technologies. The contractor shall maintain and enhance the existing IT Configuration Management Plan that describes how CM shall be maintained and how new capabilities will be implemented across the contract including ease of availability and search for baselined and version controlled documents, as-built drawings, change packages, Standard Operating Procedures, Policies, Interfaces, Agreements and other artifacts which collectively comprise the HQ IT Architecture.

DRD	Description	Frequency
DRD #12	Configuration Management Plan.	Update as required by ITCD.

### 3.3.2 Configuration Control Board Support

The Configuration Control Board (CCB) is an open meeting that invites participation from our customers and providers. In support of ITCD's administration of the CCB, the contractor shall support approximately 270 milestone reviews per year half of which are formally presented at CCB and half are reviewed "out of board" via email. Additionally, the contractor shall:

- a. set up meeting rooms, maintain notification lists, provide supporting material and schedules, and provide CCB minutes posted within one (1) business day assuring completeness and accuracy of documentation;
- b. ensuring integration of all HQ contractors and customers into the process;
- c. compiling, coordinating, providing and in executing the agenda for the CCB;
- d. management, coordination, execution and reporting of the review processes (e.g. PDR, CDR, TRR, ORR);
- e. management, coordination, execution and reporting of the requirements processes to assure consistency, completeness and alignment; and
- f. supporting new requirements to integrate change process and configuration control with the NASA Data Centers at JSC, the NASA Enterprise Applications Competency Center, the NASA Shared Services Center (NSSC), and potentially other NASA, Government, and commercial service centers.

DRD	Description	Frequency
DRD #13	CCB Meeting Minutes.	Weekly – 2 days after meeting.

### 3.3.3 NASA HQ Data Center Configuration Management

The contractor shall perform CM of all data center hardware and supporting infrastructure, operating system software, as well as standard operating procedures and documentation developed or maintained by and for the HQ Data Center. The contractor shall process and execute successfully approximately 200 change requests per year (approximately 12 change packages 'in-work" at any time). Specifically, the contractor shall:

- a. keep this documentation up-to-date within 2 business days;
- securely store and make continuously available to NASA management and the HQ IT Security team administrative passwords and similar credentials contained in the data center safe;

- c. maintain and provide visibility to an inventory of systems, appliances and subsystems that are part of the Data Center and the Systems Engineering Facility and similar physical assets;
- d. maintain and provide visibility to an inventory of spare parts sufficient for emergency repairs; and
- e. maintain written detailed documents at the same levels that reflects the current configurations of servers, cable distribution, rack distribution, inventories, licenses, systems descriptions, and changes.

DRD	Description	Frequency
DRD #14	Spare Parts Inventory	3 months after contract start date,
	Report.	quarterly thereafter.

### 3.3.4 Application Configuration Management and Version Control

To aid application sharing and code re-use and to mitigate risk of loss or loss of continuity to the government, the contractor shall use a NASA hosted code library as HQ's single authoritative source for the development, packaging and release of application software developed at HQ. The contractor shall assure that all application packages and versions are entered and maintained in the HQ Subversion (SVN) /Trac system (aka STACR) service and is available to all of their developers, designated NASA employees and that index and inventory data is available for query outside of the SVN system.

### 3.3.5 Catalog of Current Software Applications

The contractor shall use the NASA-provided Repository of Supported Applications (ROSA) system, and update, augment, validate, and maintain current the HQ's catalog of application assets (those in development, production, or archived locally). Specifically, the contractor shall:

- a. document requirements, design, code, test scripts, planned test results, actual test results, number of customers, software version, version description documents, all current fields in the application documentation in the HQ documentation repository (ROSA);
- b. inventory all HQ applications regardless of host or network (e.g., mainframes, virtualized hosts, etc);
- c. inventory all sites and web applications that are developed and maintained by the contractor;
- d. ROSA will be kept current and documentation shall be posted within 24 hours as CCB milestones and related activities are completed;
- e. report changes to ROSA via an automated method, provision a quarterly summary view; and

f. provide both machine-to-machine and human access.

DRD	Description	Frequency
DRD #15A	Summary of updates to ROSA	One time deliverable due with Data
	showing what was created.	Migration Plan for RAM.
DRD #15B	Summary of updates to RAM	Available quarterly after RAM
	showing what was created and	Implementation
	modified over previous 3	
	months	

#### 3.3.6 Diagrams of Applications, Services, Servers and Networks

Diagrams of our services are an important asset for analysis, modeling, problem solving and conveying ideas. Graphic depictions will be used by NASA and contractor management staff in order to visualize the relationships between and the characteristics of the various production software applications, services and hardware and will be reused to generate analysis, code, and work-flows. Graphic representations need to be accurate and versioned. Each should retain sufficient annotation. They can be computer generated but must be available in formats that lend themselves to editing and reuse and not only in static (jpg) format. Generating these diagrams is an important part of our overall CM service. The contractor shall:

- a. provide, update, augment, validate, and maintain current graphic depictions of logical and physical connectivity and relationship (e.g. communication paths) of servers, services and functions of all supported hardware and software within the NASA HQ facility or tied logically to HQ services (e.g. a network extending to another building);
- b. graphically illustrate the various supported production applications, their interfaces among themselves, get versus pull, logic and services;
- c. provide ability to link graphic representations together when browsing between logical and physical representations;
- d. be web viewable and editable regardless of OS;
- e. indicate authorship, validation, revision and currency and adherence to proper names of applications and services for data consistency and to provide machine assisted linkages;
- f. be linked to similar relevant supporting documentation; and
- g. be discoverable by search or query of the similar systems, applications, hosts or services.

DRD	Description	Frequency
DRD #16	Diagrams of Application	90 days after contract start date and
	logic, connectivity,	update continuously.

	interdependence and data flow.	
DRD #17	Diagrams of Server dependencies (sinks/sources), physical placement and relationship.	Draft 90 days after contract start date; 6 months final; and update continuously.

### 3.4 NASA IT Infrastructure Library (ITIL) Version 3 Approach

As the Agency Chief Information Officer's (OCIO's) vision is to use Version 3 of the ITIL framework as the NASA IT operational model, the Contractor shall be capable of implementing elements of this model at HQ. ITIL version 3.0 focuses on Service Management and seeks to align IT with business objectives. ITIL version 3.0 outlines a set of integrated processes that encompass the full scope of the IT service lifecycle. By defining a common set of ITIL version 3.0 aligned processes, HQ strives to attain maximum efficiencies while ensuring seamless, integrated services for IT customers. The contractor shall, at a minimum, support the ITIL-3 processes as they are implemented in accordance with the OCIO.

- Incident Management
- Problem Management
- Request Fulfillment
- Change Management
- Configuration Management

### 3.5 Safety

Safety for NASA's civil service and contracted employees is a top priority. The contractor shall implement and maintain a comprehensive safety, housekeeping, and health program for all assigned areas and activities. In this regard, the contractor shall:

- a. develop, submit, implement, and maintain a Safety and Health Plan. The contractor shall submit reports on occupational injuries and illnesses experienced by contractor personnel in an Occupational Injuries and Illnesses Report;
- b. comply with applicable NASA safety standards and reporting requirements, and ensure that the proper handling and/or disposition of hazardous materials and waste are observed;
- c. conduct quarterly, and unscheduled, safety inspections of the NASA HQ Data Center, the User Resource Center (URC), and other areas in the HQ building or other HQ facilities that are administered by the contractor. The results shall be reported to the COTR and the HQ Safety & Occupational Health Manager as part of the Occupational Injuries and Illnesses Report; and
- d. conduct periodic safety and health training for all contractor employees, and promptly report matters of concern to the COTR and CO. The contractor is encouraged to make recommendations and to actively participate in supporting NASA in improving the safety and health environment of HQ in addition to the contractor's facilities.

Data Center and Systems Engineering & Integration (SE&I) Lab facilities shall be neatly organized and kept clean at all times. The contractor shall:

- a. report any safety issues related to the Data Center and coordinate all activities to resolve them; and
- b. maintain strict and orderly computer rack and wire distribution, maintain continuously updated "as-built" diagrams and maps of the HQ Data Center and be responsible for a clean, clutter free, professional environment.

DRD	Description	Frequency
DRD #18	Health & Safety Plan.	Submit with Proposal; update if
		directed.
DRD #19	Occupational Injuries and	One month from contract start and
	Illnesses Report.	monthly thereafter.

### 3.6 Records Management

The contractor shall maintain data qualifying as Federal records in compliance with Federal and Agency records requirements as required by the Federal Records Act, 44 U.S.C. §§ 3101 et seq. as codified in 36 CFR 1220-123 and including Federal Enterprise Architecture (FEA) Records Management Services functional requirements. NASA HQ owns the rights to all electronic information (electronic data, electronic information systems, electronic databases, etc.) and all supporting documentation created as part of this contract. In support of Records Management the contractor shall:

- a. effectively and efficiently manage records, regardless of format or media (including paper, microform, electronic, and audiovisual);
- b. preserve, maintain, and only dispose of NASA records in accordance with authorized retention schedules such as NPR 1441.1, NASA Records Retention Schedules and the National Archives and Records Administration's General Records Schedules. Destruction of any Federal records, regardless of format, without an approved schedule is a violation of Federal law;
- c. where the contractor develops or provides systems or applications, the contractor shall ensure that records management and records archival functions are addressed in the requirements phase for the design, development, and implementation of new or significantly revised information systems;
- d. ensure systems protect the trustworthiness of electronic records, including their reliability, authenticity, integrity, and usability to meet its internal business and legal needs, as well as external regulations and requirements; and
- e. for systems or applications created or supplied by the contractor that contain Federal records, sufficient technical documentation of the system or application such as design and maintenance records are Federal records and shall be managed as such.

# 4.0 Customer Relationship Management

A goal of this contract is to provide IT services that enable HQ employees to conduct their business effectively and efficiently. A key component of delivering successful services is establishing and maintaining good customer relationships. To plan, establish, and manage these relationships, the contractor will support the development and implementation of a customer relationship program. The program includes identification of key stakeholders and change agents, customer communication, customer business process knowledge, customer problem tracking and mitigation, customer training, and identifying and facilitating customer solutions. The contractor shall serve as an agent for ITCD and simultaneously serve as a customer advocate. The contractor shall work with customers under the direction of ITCD to identify problems, opportunities, requirements, and risks. In collaboration, ITCD and the contractor shall identify solutions and mitigation strategies to deliver effective IT solutions geared to customer's requirements. Contractor employees may at times be the first point-of-contact for HQ customers. In all instances of customer contact, contractor employees shall adhere to an approach that "One call does it all". Accordingly, when a customer makes an initial request to the contractor, the contractor shall ensure the request is routed to the appropriate service provider correctly (regardless of contract vehicle), communicated to and, if required, approved by ITCD Customer Service Managers. If the HITSS contractor is responsible for completing the action, the contractor shall make contact with the customer to provide periodic updates and ensure that the action was completed to the customer's satisfaction.

#### 4.1 Customer Service Model

The contractor shall provide a consolidated approach to delivering a comprehensive range of end user support services for HQ employees.

Essential for building a strong relationship with customers is an effective Customer Service Model that focuses on understanding customer requirements and values and consistently monitors customer feedback for signs of problems or difficulties. The contractor shall implement a customer service model that:

- a. is perceived by each individual customer as competent, responsive, and timely
- b. supports all ITCD programs, projects, and services. Contract staff shall identify themselves as contractors representing all ITCD programs, regardless of where the end service is provided;
- c. anticipates issues, concerns, and problems and preemptively initiates resolution;
- d. encourages and facilitates customer self-sufficiency;
- e. effectively develops and disseminates information regarding available services and technologies, system outages, new initiatives, etc.;
- f. effectively coordinates with ITCD Customer Service Managers, HQ Organizational IT Points of Contact, Task Managers, the Enterprise Service Desk, and other contractor Customer Service representatives to provide a uniform approach to customer service;
- g. understands the evolving IT requirements of the customer;

- h. coordinates with ITCD to ensure recommendations and approaches can be supported;
- i. coordinates with IT Security to ensure any recommended solution or changes are secure;
- j. provides a method, subject to NASA approval, to obtain after-hours emergency support (defined as support for senior NASA officials, time-sensitive critical action, or a service interruption that involves a significant percentage of the HQ population);
- k. proposes, for Government approval, metrics that describe service delivery activities to measure contract performance with regard to service delivery, customer feedback, quality assurance and timely delivery of products and services; and
- 1. provides contractor developed surveys and the means to administer them. Upon completion of each end user Service Request or Help Desk Ticket, the contractor shall conduct a web-based customer survey appropriate to the work delivered. The first question shall be "Does the customer accept the work as complete". If the customer's answer is "no", then the work order shall remain open. If the answer is "yes" then the customer shall be provided with a customer satisfaction survey. Contractor developed surveys and the means to administer them shall be demonstrated and delivered to the government for approval 15 days before contract start date. The contractor may use existing survey mechanisms such as the Enterprise Service Desk Remedy system.
- m. provides continuously available customer feedback and other information to the Government of sufficient detail to identify trends and gaps of customer requests for service and services rendered; and incorporates ITIL3 principles and practices to align with NASA service delivery and provide continuous service improvement.

DRD	Description	Frequency
DRD #20	Customer Service Metrics	Deliver final three months after
	Proposal.	contract start.
DRD #21	Customer Satisfaction Survey	Deliver at contract start with the
	Report.	customer satisfaction survey, monthly
		summary analytics and trending.

Metric	Description	Performance Level to Achieve Fee
Metric #8	Customer Satisfaction Surveys.	Customer surveys shall include an
	Achieve a "4" or "5" (on a scale	Overall Rating of no less than a
	of 1-5 with 5 being the highest)	"4" (on a scale of 1-5 with 5 being
	on customer satisfaction surveys.	the highest).
	(a minimum number of surveys	
	received will be established).	

### **4.2 User Resource Center (URC)**

The contractor shall operate and maintain an on-site User Resource Center that provides generalized and specialized IT information and support for small ad-hoc and walk-in requests, currently approximately 69 customers per month. The contractor shall keep abreast of current

and emerging technologies that are relevant to the NASA IT environment and mission and serve as office environment experts for advice. The User Resource Center shall accommodate walk-in customers and be available from 7:30 AM to 5:00 PM, Monday through Friday excluding holidays. Services available in the URC include:

- Scanning
- File conversions
- Above core applications (e.g. Photoshop, Visio) assistance
- File archiving to CD

#### 4.3 Customer Education and Outreach

The Contractor shall provide customer training, end-user documentation, and communication activities for IT applications, services, and issues that affect the HQ user community (NASA employees, contractors, and NASA HQ consultants). The contractor shall provide training using classes, video files, online content and printed materials. Classroom training will be conducted in the on-site training facility (Computer Training Center), Monday through Friday, except Federal holidays, between 8:00 a.m. until 4:30 p.m. local time.

ITCD's IT communications program provides strategic, tactical, and proactive communication support for HQ CIO and all supported IT projects/programs. The contractor shall provide customer communication support, including development, maintenance, and execution of the ITCD Communications Plan. Program support includes content development and maintenance of ITCD-managed Web pages; identification of stakeholders/audience; message delivery methodologies; message timing; message content; technology to business terminology translation. Additionally the contractor shall provide timely submission for recurring outreach messages, including NASA HQ Web sites, HQ Facebook page; Heads Up articles; and others as defined. Specific outreach will also be required to communicate "IT Notices" and associated distribution list. The contractor shall support the drafting of approximately 10 IT Notices per month.

The contractor shall provide training for IT applications and services. The contractor shall develop and document a Training Program approach and framework and provide to the government within two months of contract start. Training methods shall include one-on-one, group, instructor led, remote, tutorial self paced, virtually over the web, and on recorded media. Training is required for both legacy applications and newly development applications. In addition, HQ users are increasingly impacted by NASA applications and services housed outside of HQ, and HQ is at times called upon to develop and/or deliver end-user documentation, outreach and computer training if no existing materials are available prior to deployment at HQ. Training materials shall be provided for both instructors and students to facilitate use of applications and solutions provided or supported under this contract. The contractor will recommend the appropriate training scope for each project for government approval and should include approach, timing, dependencies, and audience. The contractor shall schedule and facilitate training sessions including facilities and equipment.

Customer advocacy and coordination groups will be supported and facilitated by the contractor. This includes recurring meetings for the Customer Service Project Reviews and Customer Advisory Committee. Coordination and communication with customer advocacy groups is a critical success component for ITCD projects.

The contractor shall support NASA in planning for and implementing change associated with new IT capabilities within HQ and the Agency. NASA may call upon the contractor to provide support not only for HQ-specific system implementations, but also for Agency-wide initiatives that may impact HQ's infrastructure, processes or policies. Those activities include impact assessment of proposed change(s), modification and coordination of required changes, and documentation of change management processes and procedures.

The contractor shall develop, submit and regularly update the Training Program and Outreach Plan detailing plans during the upcoming period and the top five to ten quantifiable objectives expected to be achieved. The Government and Contractor will discuss, modify (if necessary), and agree to the top five to ten objectives, which will form the basis for a portion of the incentive fee determination (technical performance) during that period. The contractor shall release an update to the Training Program and Outreach Plan every six months. The contractor shall submit a report at the end of each period to describe the accomplishments against the objectives met from the previous period and which 5-10 objectives will be targeted for the next period. The Training Program and Outreach Plan shall adhere to the guidance in section 2.3.1 and 2.3.2 of this Performance Work Statement.

DRD	Description	Frequency
DRD #22(A)	Training Program and Outreach Plan, detailing materials, methods and approach and to include communications, and facilitating relationship building activity. Two plans submitted each year with each plan covering the period of performance April 1 thru September 30 and October 1 thru March 31.	Draft 45 days from contract start; final 2 months from contract start. Subsequent draft plan due each August 1 with final due Oct 1; and Feb 1 with final due April 1.
DRD #22(B)	ITCD Communications Plan	Draft 45 days from contract start; final 6 months from contract start. Updates as required by ITCD.
DRD #23	Customer Advisory and Service Review, meeting notes, action items, results, and schedule.	As required within 2 business days of meetings.

# **4.4 Event Support**

The contractor shall serve as the IT expert for events requiring audio-visual services at HQ and provide support to separate contractors whose responsibility centers on operating the HQ A/V equipment and facilities. IT support includes both on-site and off-site activities such as providing and configuring the necessary IT hardware and software, checking LAN connections, interfacing with other systems or facilities, providing dedicated support for the entire length of multi-day meetings, training the A/V contractor who operate the A/V equipment, and coordinating with multiple organizations and contractors. The contractor shall develop standard procedures available at contract start for obtaining advance coordination for A/V IT support. Work products and procedures must also adhere to standards of federal web publishing, IT security and Section 508 conformance along with all other applicable federal, Agency and departmental regulations.

### 4.4.1 Web-Streaming

The contractor shall operate and maintain the Headquarters Web Streaming services ensuring effective delivery of content provide by NASA TV. In support of NASA events which occur at on-site and off-site locations the contractor shall provide services to digitally capture events and meetings for the purpose of live Web-streaming, post event Web-streaming, or event recording. The contractor shall support approximately 4 Web-streaming events per month. The contractor shall:

- a. ensure proper coordination with public affairs, NASATV, and others is maintained to ensure reliable and timely broadcast of content through the HQ streaming media servers;
- b. ensure that the HQ streaming servers are maintained and are compliant with correct compression and service requirements of NASA TV and the Agency portal;
- c. participate in the planning, coordination, and setup of video recording and streaming of NASA events with event planners and hosting locations;
- d. provide on location technical staff to record NASA events using provided portable recording and encoding systems for posting to websites, DVD releases, or streaming over the web; and
- **e.** evaluate new and emerging technologies to continually enhance service offerings associated with the capability to capture and Web-stream NASA events (live and recorded formats).

# 4.4.2 Video Teleconference Systems (ViTS) Support

The ViTS room operations team provides a full range of support services and technical expertise in support of point-to-point and multi-point video teleconferences at Headquarters. These services include the scheduling, conference consultation, conference setup, coordination with end points, and room operations. The contractor shall:

- understand at an expert level the systems and components within the Headquarters ViTS
  rooms and ensure that all elements of the system are maintained in an operational and
  available state;
- b. provide the scheduling function of the Headquarters ViTS rooms and coordination of conference setup with remote end points (approximately 36 per month);

- c. assure staffing of rooms during video teleconferences and support services that include but not limited to room preparation, system and camera operation, recording, monitoring audio/video quality, and problem solving;
- d. log attendance and customer satisfaction survey for each event and report survey data in the Customer Satisfaction Survey Report (DRD #21); and
- e. coordinate facility repairs and system maintenance as needed to ensure all elements of ViTS room services remain in an operational and available for use state.

### 4.5 On-Boarding and Off-Boarding Support

The contractor shall provide support in the On-Boarding and Off-Boarding of all types of NASA workers (civil servants, contractors, temporary workers, remote users, etc.). This shall include executing On and Off-boarding processes as well as providing outreach support and training/education related to On and Off-Boarding. The contractor shall provide support in the On-Boarding of approximately 34 employees per month The contractor shall support HQ in implementing process re-engineering as defined by the Agency On-Boarding Initiative for NASA (OBIN) project.

It is NASA's goal to equip all employees with the necessary assets to enable them to be productive on day one with NASA. This means that all IT assets such as computers, user accounts and system access is coordinated and delivered in advance of their start date. The contractor shall work with other NASA organizations and contractors to ensure this happens. These organizations include the following HQ and Agency offices: HQ Human Resources Management Division, HQ Security Office, HQ IT Points-of-Contact, HQ Administrative Officers, NASA Shared Services Center, and the NASA/ACES contractors. The contractor shall enhance the current On-Boarding Statistics Report by working with the other process stakeholders and data systems. This report shall be enhanced to include Off-Boarding data and shall provide summary statistical data as well as report status on an individual basis. The contractor shall utilize the Identity and Access Management Tools (IdMAX). The contractor is required to take a proactive approach in On-Boarding and is sometimes called upon to support and help trouble shoot delays in on-boarding. The contractor shall participate in HQ and Agency level working groups aimed at continuous improvement in this area.

DRD	Description	Frequency
DRD #23A	On-Boarding and Off-Boarding	Deliver weekly beginning 3
	Statistics Report	months from contract start.

#### 4.6 Service Coordination and Collaboration

Effective service coordination and collaboration with all internal and external customers is critical to the success of ITCD and the contractor. The contractor is required to coordinate services and collaborate with the following internal and external customers: HQ end users, ITCD, NASA leadership, I<sup>3</sup>P Contractors, and other HQ and Agency contractors. The contractor shall support ITCD in the development of processes and procedures that will facilitate coordination and collaboration between contractors. ITCD must ensure that coordination and

collaboration is effective and efficient. The contractor shall be prepared to report on issues or status regarding coordination and collaboration.

### **4.7 Service Management**

A goal of this contract is to ensure proactive management of all requests for service from HQ customers. This includes Help Desk Management, Service Desk Management, and Service Request Management.

The contractor shall implement a service management program that provides comprehensive support in the planning for and execution of customer requirements. The contractor shall work closely with ITCD and become knowledgeable of individual Mission Directorates and Mission Support organization's mission, programs, and organizational structure, and work closely with their Points of Contact (POCs) and ITCD. The contractor shall support the Mission Directorates and Mission Support POCs in defining requirements for their organization; developing, tracking and coordinating schedules for their activities; and ensuring that configuration and inventory controls are maintained.

For efforts that are considered projects and are subject to the processes of the Service Request process, IT Project Management Review Board, SDLC, and Operations the contractor shall:

- a. propose, for Government approval, metrics that describe service delivery activities to measure contract performance with regard to adherence to Customer Requirements which include; service delivery, customer feedback, quality assurance and timely delivery of products and services; and
- b. anticipate issues, concerns, and problems and coordinate with ITCD to preemptively initiate resolution.

DRD	Description	Frequency
DRD #24	Customer Requirements	Deliver within 75 days of contract start;
	Adherence Metrics Proposal.	final due three months after contract
		start.
DRD #25	Requirements Adherence	Deliver three months after contract
	Report.	start, monthly thereafter.

#### 4.7.1 Help Desk Management

HQ intends for the HITSS contractor to use the NASA Enterprise Service Desk (ESD) located at and managed by the NASA Shared Services Center (NSSC) to manage all Tier 1 and 2 Help Desk calls. The ESD serves as the single point of contact for Enterprise Services (Tier 1) support providing a unified interface between the I<sup>3</sup>P customers and the I<sup>3</sup>P service providers (i.e. I<sup>3</sup>P contracts – ACES, NICS, NEDC, EAST, and WEST). The Enterprise Service Desk ticket system utilizes the BMC/Remedy 7.5 software and sufficient license and access will be provisioned to the HITSS contractor.

For Tier 1 and 2 support the contractor shall work directly to resolve and triage calls directly and interface with the ESD for a number of activities. The contractor shall support approximately 250 HELP desk tickets per month. This includes (but is not limited to):

- a. utilizing the same service as provisioned by the I<sup>3</sup>P Tier 1 Enterprise Service Desk (ESD). The contractor shall leverage the processes and procedures to ensure close integration with ESD. The contractor is responsible for all integration work with the NSSC. For reporting and analysis, the contractor shall leverage dashboard and analysis services functions provisioned by the ESD;
- b. providing Tier 2 help desk support during the prime time work hours of 6 a.m. to 6 p.m. Eastern U.S. time on days when the federal government is open, even if contractually the contractor is closed on that day;
- c. providing Tier 2 help-desk support via phone and e-mail;
- d. reviewing all customer feedback received from the ESD customer satisfaction survey;
- e. reviewing with NASA all surveys rated by customers as "dissatisfied" or "very dissatisfied";
- f. providing 24/7 contact information and revising the information as necessary to keep it current;
- g. providing and updating knowledge articles used by call agents to resolve and/or triage Incidents that pertain to HITSS specific contract service;
- h. resolving, reporting status and completing escalated incidents that cannot be resolved at the Tier 2 level;
- i. providing appropriate training materials in a compatible format and scripts to the ESD to help them triage calls properly;
- j. providing and updating knowledge articles used by call agents to resolve and or triage Incidents that pertain to HITSS specific contract service. This includes knowledge articles for the Tier 0 self-service I<sup>3</sup>P Web site for commonly identified incidents and or user self service activities;
- k. providing notifications and community/organization lists for dissemination of planned and unplanned outages, service configuration changes affecting HQ customers for services provided by the HITSS Contractor;
- 1. providing status related to incident/problem resolution for those incidents assigned to the HITSS contract:
- m. providing information to the ESD as to HQ specific configuration changes of importance for Tier 1 or Tier 0 levels;
- n. providing escalation procedures to the ESD;
- o. providing a POC for ESD-to-HITSS-Contractor escalation processing for both normal business and after hours:
- p. providing metrics to the ESD as requested;
- q. reporting all downtime, planned and unplanned to the ESD; and
- r. providing initial load of Configuration Items (CIs) to the ESD/ESRS CMDB during the transition period of the Contractor or in accordance with a specific contract Service Asset and Configuration Management Plan.

Important ESD reference information can be found in the following documents:

• Enterprise Service Desk Concept of Operations

- Enterprise Service Desk Performance Work Statement and associated Appendices
- ESD/ESRS Interface Definitions Specification
- ESD/ESRS 7120.7 Program/Project Systems Requirements documents.

DRD	Description	Frequency
DRD #26	Summary and Trend Ticket Reporting including number of tickets opened, completed and pending (e.g. under a week, under two or over three) number escalated, rating, closed, times to first respond, customer satisfaction. Summary and reporting of phone support, email support, and drop-in support.	One month from contract start and monthly thereafter.

# **4.7.2** Service Request Management

The contractor shall efficiently receive and promptly process all Service Requests assigned to them. The Agency is migrating to the Agency-wide Enterprise Service Request System (ESRS). At contract start, however, HQ will not be fully utilizing ESRS. The Agency ESRS will be operational at contract start but will only be used for Service Requests assigned by the Agency to HQ for fulfillment. At some time in the future HQ will use the Agency ESRS for all HQ Service Requests. The current HITSS contractor is using the HQ ISEM Work Management System (IWMS). The contractor shall use the IWMS for performing Service Request Management. The contractor shall manage and support approximately 23 Service Requests per month.

#### 4.7.2.1 HQ Service Request Management System

The current HQ work management system, IWMS, is a web-based collaborative tool that allows customers to create, track, and monitor the status of IT SRs. The contractor shall:

- a. maintain web-based SR initiation and browse capability;
- b. maintain user permissions based on specific tasks;
- c. maintain standard permissions for any customer who does not have a system USERID;
- d. maintain ability to initiate a new service request, search for existing service requests, run standard and custom reports;
- e. maintain ability to browse the SR review agenda;
- f. maintain ability to browse the CCB Agenda; and
- g. maintain automatic notification via e-mail for any change in status of the SR throughout the SR lifecycle.

For all SR's submitted and within scope of this PWS, the contractor shall:

- a. enter all SRs into the work management and tracking system within 12 prime time hours of receipt and shall enter the agreed upon SR completion date within three business days of SR receipt (approximately 25 SRs per month);
- b. coordinate the CCB date or the completion date of all service requests with the customer;
- c. complete service requests by the approved completion date, customer concurrence is required prior to Service Request closure;
- d. coordinate any extension of completion dates with the customer. The COTR will approve requests for all extensions after two extensions have already been granted;
- e. coordinate the closure of SRs with the customer. The contractor shall insure that SRs are closed within 72 hours of completion;
- f. coordinate extensions to approved completion dates or project milestones with the customer and/or the HQ CCB. The customer and/HQ CCB has the right to disagree with the date proposed by the contractor. This shall be tracked as an unapproved completion date; and
- g. provide a web-based customer survey appropriate to the work delivered. The first question shall be "Does the customer accept the work as complete". If the customer's answer is "no", then the work order shall remain open. If the answer is "yes" then the customer shall be provided with a customer satisfaction survey.

DRD	Description	Frequency
DRD #27	Service Request Processing Plan describing	Within 2 weeks of contract
	overall management and execution of the SR	start.
	system and customer satisfaction report.	

### 4.7.3 SR&QA Customer Surveys – Moved to Section 4.1

DRD	Description	Frequency
DRD #28		

### 4.7.4 Use of Agency Enterprise Service Request System (ESRS)

The ESRS is anticipated to be operational for Tier 1 requests during the phase-in of the HITSS contract in which case, the HITSS contractor shall receive service requests from the Agency Enterprise Service Request System for fulfillment. The HITSS contractor shall plan for a period of integration and testing to integrate their contractor order fulfillment systems with the ESRS. As the Agency ESRS service matures, the HITSS contractor will continue to adopt the Agency

service and migrate dependence from a HQ only solution. The specific interface definition between the ESRS and HITSS contract is defined in the ESD/ESRS Interface Definitions Specification.

The ESRS utilizes the same IT Service Management software as the Enterprise Service Desk ticket system (BMC/Remedy 7.5). The HITSS contractor shall interface with the ESRS for a number of activities. These include:

- a. building interfaces between the ESRS Remedy system and the HITSS contractor system during the transition period. The contractor is responsible for all integration work with the NSSC;
- b. building linkages between the NASA Enterprise Architecture Registry (NEAR) and the contractor system during the transition period;
- c. fulfilling, reporting status and closing service requests and updating CIs (definition) in the ESD/ESRS CMDB (more definitions needed);
- d. providing a POC for ESRS-to-HITSS-Contractor interfacing/integration for both normal business and after hours incident/problem resolution/service fulfillment; and
- e. populating and updating HITSS service system and component information in the NASA Enterprise Service Catalog (ESC) in accordance with the NEAR IDS (NASA Enterprise Architecture Repository (NEAR): Interface Definition Specification).

### 4.8 Catalog Services

The contractor shall provide a full catalog of commercial IT components for ordering on the first business day of the contract. Each catalog entry shall clearly define, in precise and understandable terms, what hardware, software, service, coverage, warrantee, support, etc., is included in the catalog price. The catalog provided shall be on a commercial web-site with government pricing (e.g., pcmallgov.com; gtsi.com; cdwg.com, etc.) and shall meet all FAR requirements. The catalog provided shall allow alternate shipping methods. All NASA Headquarters employees may order from the catalog. The contractor shall support between 500 to 800 orders per year. All items ordered for Government use shall be approved in the following sequence, first by the organization IT POC, then the organization budget official, and lastly the IT and Communications Division point of contract. The Contractor shall be responsible for delivery and when required, for installation of the product, except for desktop installations, which are performed by the ACES vendor. The Contractor shall be responsible for returning to the catalog vendor all or some portion of orders as required. For catalog items, the Contractor has no responsibility for integration into the customer's environment, consultation services, training, data conversion, or maintenance. If the product cannot be installed without causing anomalies with the customer's computer, then the product shall be removed and the customer's computer shall be restored to its original state. If problems occur after the installation that can reasonably be traced to the product, then the product shall be removed and the customer's system shall be restored to its original state. The catalog shall contain a disclaimer for each item that clearly limits the Contractor responsibility. The Government shall approve items and categories of items placed into the catalog.

DRD	Description	Frequency
DRD #29	Catalog Orders Report/Checkbook includes number of orders by category, requisition number and funding source (if known), number complete, funds used versus available, funds in process, summary total of	2 weeks from contract start, monthly thereafter.
	monthly catalog invoice and break out of ITCD funded monthly total.	

# **5.0 Application Development & Information Management**

Application Development provides comprehensive information services, delivering software and web applications to meet customer's business needs and search, query and information management tools to meet enterprise objectives. Much of the current HQ application inventory consists of legacy stove-piped applications that were replicated multiple times, so our challenge is to migrate as many of these instances as practical to a modern information framework that will extend reuse of data sources, information organization, and application functions while provisioning a faster more efficient environment to create and field applications.

This new environment will be guided by design goals of provisioning modern customer-facing interfaces, automated data exchanges from validated sources, and of reducing our dependence on specific hardware, and increasing our ability to employ analytics across our application inventory. Our objective is to provide decision support and knowledge services to the leadership of NASA and to support similar needs across the Agency.

The Applications Development program shall be aligned with Agency and HQ Enterprise Architecture, the ITCD Innovation Program, and Agency I<sup>3</sup>P contract service providers. Success of the program requires clear communications with all stakeholders, establishing consistent and realistic expectations, delivering innovative, quality, timely, and cost effective solutions.

#### 5.1 Establishment of an Application and Information Framework

Our goal is a comprehensive information service, efficiently delivering software applications and web sites to meet specific, though ever-evolving, customer business needs while employing a strategy that maximizes enterprise objectives. It is anticipated that business needs will be across multiple domains (e.g. finance, project management, facilities, capabilities, missions, legislative, organizational, etc) and that the formats of data sources will be equally diverse. As the content of applications (source, entity relationship, logic) often needs to be shared, leveraged, aligned or reused, the framework should provision methods for ingestion to search indexes, query services and registration as HQ-wide capabilities. Therefore a strategy beyond traditional warehousing will require a capability for data source management, link management, service relationship management, registration services, metadata management, data model management, data and

service exchange management and linkages to monitoring and management controls for capacity planning, information usage and data and service exchange.

The establishment of a 21<sup>st</sup> century information management environment worthy of our customers and their mission requires the contractor to employ innovative thinking, complex problem solving, communication, customer relationship and organizational change management, strategic and tactical planning, adherence to documented process, technical expertise, and legacy support. The contractor shall deliver an Application Service Framework that is extensible and sustainable. The contractor shall:

- a. develop plans to test and deploy the essential components of an application development framework:
- ensure mechanisms for operations and management of services in the framework are integrated and supportable by the contractor as a critical element of each phased deployment;
- c. restrict and otherwise minimize point-to-point service and data exchanges while promoting service advertisement, utilization, and management;
- d. Data Exchange Agreements (DEA) will be migrated to fully automated service advertisements in order to maximize reuse of software functions and minimize point-to-point data exchanges;
- e. automate DEAs sufficiently so that monitoring of success, schedule, and availability for more capacity can be determined;
- f. ensure monitoring for every application and service that detailed records indicating customer use, including access, duration and relevant transactions are captured and viewable as a critical factor of determining performance and customer satisfaction;
- g. ensure that vocabularies including data dictionaries, and metadata, and portfolio attributes are shared and used by a HQ search and query service;
- h. adhere to goals of high availability and extreme responsiveness from a customer's point of view;
- i. adhere to goals of hardware independence for customer environments regardless of OS and in support of mobile devices;
- j. adhere to hosting goals of hardware independence, OS agnostics, and virtualized environments;
- k. provision capabilities to add metadata elements of provenance and similar data validation and quality verification;
- 1. provision mechanisms to ingest data dictionaries, metadata, and similar sources in to search indexes and query builders; and
- m. emphasize maximum flexibility in the use of customer facing interfaces that enable self service (e.g. query services, mashups).

The contractor shall develop, submit and regularly update the Application Service Roadmap and Implementation Plan detailing plans during the upcoming period and the top five to ten quantifiable objectives expected to be achieved. The Government and Contractor will discuss, modify (if necessary), and agree to the top five to ten objectives, which will form the basis for a portion of the incentive fee determination (technical performance) during that period. The contractor shall release an update to the Application Service Roadmap and Implementation Plan every six months. The contractor shall submit a report at the end of each period to describe the accomplishments against the objectives met from the previous period and which 5-10 objectives will be targeted for the next period. In addition to the general guidance in section 2.3.1 and 2.3.2 of this Performance Work Statement, The Application Service Roadmap and Implementation Plan shall address the following requirements:

- a. an approach to improve/enhance the Software Management Guide and Application Development processes;
- b. a description of the roles and responsibilities for developing, managing, and executing the roadmap and implementation plan;
- c. a recommended software development methodology (RAD, Iterative, Agile, Spiral, etc.) and its integration to the SMG with emphasis on areas for modification and improvement to reduce cost and development time;
- d. a recommendation for an Application Service Framework and a plan for implementing, testing and evaluating the essential components of the framework;
- e. a communication plan that addresses the synergy and collaboration needed with other components of customer service, engineering/operations, security and all other applicable areas and addresses; monitoring of applications and related service, customer satisfaction of application services provided, and meeting performance and availability requirements;
- f. an approach for analyzing the effectiveness/usefulness of existing tools and make recommendations for potential tool solutions that can support the Application Service Framework and related reporting;
- g. a recommendation, plan and schedule for a Quality Assurance and Quality Control improvement process that addresses; number and type of applications, technologies in the application portfolio, the architecture of each application, type of data processed in the application portfolio; validation and verification of the application at critical milestones in the software development lifecycle;
- h. an assessment of the existing test labs and test environment with recommendations for improvement;
- i. an assessment of testing tools and reporting;
- j. an approach for evaluating the existing information/knowledge management and CM tools;
- k. a schedule for developing a plan for the evaluation of new and existing information/knowledge management and CM tools for recommended improvement, redesign, or replacement;
- 1. an approach for implementing and utilizing current investment in the IBM rational tools for areas of the framework;
- m. an approach for reviewing and updating Application Development templates based on Application Framework recommendations;

- n. a detailed description of the planning, requirements, design, development, verification & validation, and deployment disciplines that will be employed;
- o. a description of how EA will be addressed in the plan and the verification points for ensuring that EA is part of the implementation plan;
- a methodology for executing recommendations from analysis conducted on the SMG and App Dev processes;
- q. a technical approach for how lessons learned and suggested improvements are recorded, tracked, and vetted; and
- r. a managerial approach for monitoring execution of the plan.

DRD	Description	Frequency
DRD #30	Application Service Framework.	Two months after contract start,
		modifications reflecting
		approved changes as required.
DRD #31	Application Service Roadmap and	Six months after contract start
	Implementation Plan.	and every 6 months thereafter,
		modifications reflecting
		approved changes as required.
		(Due last business day of each
		Incentive Fee Period)

#### **5.2 Support for Legacy Applications**

NASA HQ has approximately one hundred applications of varying complexity and customer use. General business services supported by the existing application inventory include: Finance; Budget; Communication; Human Resources; Asset Management; Administration; and Program Management. Application types include several instances of Oracle and MS SQL databases with web interfaces via ColdFusion and reporting via Crystal Report, and simple Document Management services via Basis / Basis Webtop. The contractor shall be responsible for sustainment and maintenance of the current applications inventory while aggressively assessing which shall be consolidated, modernized, or decommissioned. Support for these applications will be provided until each has been dispositioned and our reliance on stovepiped infrastructure is reduced. The contractor shall evaluate each of the existing applications and provide a recommended disposition plan, including technology, data migration strategies, impact on operations, schedule and cost. The contractor shall conduct a quarterly assessment of the Legacy Application Portfolio with identification of the following:

- The number of legacy applications in the portfolio approaching end of life.
- The number of legacy applications in the portfolio requiring technology refreshes.
- The number of legacy applications in the portfolio with low utilization.
- The number of legacy applications in the portfolio with large footprints on the infrastructure and large resource consumption.

- The reduction of legacy applications in the portfolio.
- The reduction of maintenance required for applications.

The contractor shall develop, submit and regularly update a roadmap detailing plans during the upcoming period and the top five to ten quantifiable objectives expected to be achieved. The Government and Contractor will discuss, modify (if necessary), and agree to the top five to ten objectives, which will form the basis for a portion of the incentive fee determination (technical performance) during that period. The contractor shall submit a report at the end of each period to describe the accomplishments against the objectives. The contractor shall release an update to the Legacy Application Disposition Plan every six months. The contractor shall submit a report at the end of each period to describe the accomplishments against the objectives met from the previous period and which 5-10 objectives will be targeted for the next period. In addition to the general guidance in section 2.3.1 and 2.3.2 of this Performance Work Statement, The Legacy Application Disposition Plan shall define an approach for analyzing the legacy applications and a description of the roles and responsibilities for developing, managing, and executing the plan. The plan shall have a description of the methodologies for legacy application disposition that addresses the following:

- a. analyzing and evaluating legacy applications for consolidation;
- b. data migration strategies;
- c. operations and management (O&M) impacts;
- d. schedule and cost of implementing and executing;
- e. records management considerations;
- f. categorizing the types of legacy applications to support decision-making within budget, technology, data, and architecture as drivers for: Modernizing specific legacy applications within budget and determining appropriate enhancements for short-term use until a new application is developed to replace the legacy application; and
- g. the identification of key factors for determining an application's end of life.

DRD	Description	Frequency
DRD #32	Legacy Application Disposition	6 months from contract start,
	Plan.	modifications reflecting status and
		approved changes every 60 days.
		(Initial plan due last business day of
		Incentive Fee Period (3/29/2013);
		60 day status due the first business
		day of July, September, November,
		January and March)

DRD #33	Legacy Application Portfolio	6 months from contract start,
	Report.	modifications reflecting status and
		approved changes every 60 days.
		(Initial plan due last business day of
		Incentive Fee Period (3/29/2013);
		60 day status due the first business
		day of July, September, November,
		January and March)

# 5.3 Support for Information and Knowledge Management

The existing HQ application inventory supports multiple business functions, ultimately influencing knowledge management and decision support, but often as a step-function outside the specific application. The contractor shall provide support for the development of information management and knowledge management capabilities to enhance NASA HQ in organizing and retrieving information, retaining and sharing knowledge, and furnishing information elements to support decision-making and minimize the steps required. The scope of this support includes modeling processes and workflows and providing improvements to NASA HQ offices in developing, maintaining, and implementing information and knowledge management architectures, ontologies, taxonomies, process models, and other tools and techniques that will assist NASA in meeting its knowledge management responsibilities.

The contractor shall provide technical support in assisting HQ offices in defining their information needs to support decision-making, in developing technical and business process solutions for obtaining and organizing the information, in protecting information that is sensitive and not appropriate for general distribution, and in defining and deploying mechanisms and tools for retrieving the information in an efficient, intuitive/contextual, and cost-effective manner.

# **5.4** Applications and Web Site Development

The contractor shall develop application software and web sites based on requirements and design specifications approved by NASA HQ (approximately 5 new (1.0) applications / web-applications per year and approximately 90 1.x releases per year). The contractor shall build software applications, establish baseline configurations, and perform such other tasks as are required to make the developed application ready for operational use. Formal configuration management controls shall be adhered to in coding application software and web sites. The contractor shall maintain the baselines under configuration management and enable current and continuous access to all application data and documentation. The contractor shall:

- a. adhere to FIPS (Federal Information Processing Standards), Agency, and Division Standards;
- b. adhere to the full range of application lifecycle management activities as defined in the HQ Software Management Guide;

- c. formally propose modification to current standards prior to any deviation in accordance with the approved NASA HQ CCB;
- d. document tools and technologies in the NASA HQ Application Technology Library;
- e. prepare appropriate application and system documentation, (typically the software Version Description Document, an application Implementation Plan, and a User and Operations guide) prior to NASA acceptance;
- f. adhere to interface controls including coordinating with computer operations and system engineering organizations within HQ and other NASA Installations to properly define operational and system requirements in the development of applications and in the planning of system capabilities. The contractor will document interfaces via Interface Control Documents and/or Memoranda of Understanding/Agreement and clearly depict times, flow, content and assure monitoring;
- g. support hosting and development changes required to migrate relevant web and application services to I<sup>3</sup>P providers;
- h. develop data models to support design and reuse in accordance with target framework;
- i. generate test data to ensure functionality and results prior to release;
- j. deliver software test plans and test cases reflective of requirements and use cases;
- k. deliver Logical Data Base Design and the Physical Data Base Design at the PDR and CDR. Data element and types, primary and secondary key fields, and dependencies among data shall be identified. Other pertinent characteristics shall be presented as determined by the contractor or directed by ITCD;
- 1. adhere to baseline requirements for all software documentation, including requirements, data sources, design, source code, test scripts, planned test results, actual test results, and version description documentation; and
- m. maintain the baselines under configuration management and enable immediate and continuous access to all application data and documentation.

DRD	Description	Frequency
DRD #34A	Framework for Development Program.	Due at contract start, modifications reflecting approved changes as required.
DRD #34B	Framework for Web Site Development Program	Due nine months after contract start.
DRD #35	Interface Control Documents.	One month from contract start and as needed thereafter.

#### **5.5 Software Management Guide (SMG)**

The NASA HQ Software Management Guide gives specific guidance identifying the accepted life cycle processes that shall be used by the contractor for developing, prototyping, and

deploying application services and is leveraged to extend or share our services outside of the HQ application development environment. The contractor shall:

- a. utilize and enhance the NASA HQ Software Management Guide (SMG);
- b. employ software management and development detailed in specific sections for Software Standards and Procedures, Software Configuration Management, and Software Assurance;
- c. adhere to the NASA software policies and guidelines referenced, specifically NASA Procedural Requirements (NPR) 7150, NASA Software Engineering Requirements;
- d. maintain and update to reflect current or needed processes and procedures, specifically to incorporate agility and responsiveness in development methodologies into NASA HQ standard; and
- e. assure changes adhere to the CCB process and pre-submittal is reviewed by NASA for approval.

DRD	Description	Frequency
DRD #36	Software Management Guide.	Interim due three months after
		contract start date; updated SDLC
		due six months after contract
		start; modifications reflecting
		approved modifications quarterly
		thereafter.

### **5.5.1 Streamlined Development Methodology**

NASA HQ is striving to implement an iterative, streamlined Software Development Lifecycle as a means to deploy quality solutions quickly and to reduce design, development, and implementation risks. To transition/implement to a more rapid and iterative development methodology, the contractor shall:

- a. use prototyping, and rapid development methodologies;
- b. prototype new technical approaches, with an emphasis on small discreet proofs of concept;
- c. demonstrate prototypes during critical design reviews;
- d. ensure all derived requirements identified are presented to and accepted by the government prior to each design review;
- e. provide full lifecycle documentation;
- f. implement of an iterative development methodology in adherence to NASA 7120 and NASA HQ configuration management requirements; avoid using production data within a prototype application without prior government consent; and

g. modify the Software Management Guide.

#### **5.6 Applications Development Requirements**

Requirements are the foundation for the systems development program. A goal of this contract is to optimize the collection, documentation, and confirmation processes associated with the requirements phase of development. NASA HQ seeks to leverage technology for documenting requirements and facilitating mapping requirements to test cases and design specifications. In addition, improvements are sought in the means by which documented requirements are expressed back to the customer in an engaging way to verify and validate priority and intent. To facilitate requirements definition and to document independently testable and verifiable requirements, the contractor shall:

- a. utilize existing NASA HQ defined tools (IBM Rational software) to document all software development project requirements, and/or recommend alternate technologies and approaches which provide improved efficiencies;
- b. collect, interpret, model, generate, and document business, functional, and technical requirements in accordance with programmatic mandatory, preferred and optional formats;
- c. provide a consultative role to fully elicit customer requirements,
- d. ensure requirements traceability;
- e. obtain written NASA approval of the documented application requirements
- f. maintain responsibility to ensure captured requirements are vetted and understood by stakeholders prior to government acceptance;
- g. ensure project requirements reflect the "as built" state of the product upon project delivery;
- h. leverage technology, models, diagrams, and multimedia to communicate concepts and details:
- i. provide business process re-engineering services as requested;
- j. identify opportunities for business improvements and provide recommendations,
- k. schedule and conduct requirements reviews to document and validate the NASA requirements;
- consult with the Government data and/or system owner to support them in identifying the
  proper data category and security requirements in accordance with the governing FIPS
  (Federal Information Processing Standards) and National Institute of Standards and
  Technology Special Publications; and
- m. ensure requirements reflect NASA HQ organizational approach to development projects and reflect the needs of the organizational unit and are not specific to an individual.

DRD	Description	Frequency
DRD #37	Standard requirements template that	Within two months from
	documents the service or design need	contract start date.
	from the perspective of effected	
	discipline areas (e.g. applications	
	development, IT security, customer	
	training, operations) and by level of	
	need (e.g. mandatory, optional,	
	preferred).	

### 5.7 System Design Specification

Quality system design is the blue print that translates "what" the system must do to "how" the system will do it. A goal of this contract is to optimize the analysis, modeling, prototyping, documentation, and confirmation processes associated with the design phase of development. NASA HQ seeks to leverage technology for documenting design specifications and facilitating mapping design specifications to requirements and test cases. In addition, improvements are sought in the means by which design specifications are expressed back to the customer for confirmation. To facilitate system design the contractor shall:

- a. identify and utilize a NASA HQ approved tool to document project design specifications,
- b. map design specifications to requirements and test cases;
- c. provide a repository for design specifications accessible using common metadata (e.g. portfolio, system, service, owner);
- d. provide an Application Design Specification for each new development project and each subsequent project;
- e. provide the system functional design, the software components definition, system interfaces, data base specifications, and systems, equipment and software requirements, as appropriate:
- f. ensure design approach is vetted and understood by stakeholders prior to government acceptance;
- g. ensure integration of modules or components through open reviews;
- h. leverage technology, models, diagrams, and multimedia to communicate concepts, details, alternatives analysis, and technologies;
- i. conform to the NASA HQ EA target architecture, including Master Data Management and web-service oriented architectures, NASA security and authentication standards;
- j. give maximum consideration to both the short and long term requirements, including data consolidation, modularity, reusability, high availability, security, data access, data quality, and virtualization; conduct an alternatives analysis and recommend use of COTS, open source, cloud technologies as appropriate, and use of prototyping; and

k. provide and use modeling/analysis techniques to identify and correct design errors and deficiencies which could cause performance deficiencies or resource utilization and/or contention problems.

DRD	Description	Frequency
DRD #38	System Design Specification.	Two months from contract start date, modifications reflecting approved modifications as
		needed thereafter.

#### 5.8 Data Conversion

The contractor shall provide data conversion support for moving and migrating data from legacy applications to formats required by modernization, consolidation or migration. The conversion efforts require creative and efficient approaches for applying various rule sets for the conversion processes, and for validating and verifying data accuracy. The contractor is responsible for successful project data conversion and data migration defects will be corrected at no cost to the government. The contractor shall:

- a. work with ITCD, business customers, and system owners of the source and target applications so that they may fully understand the definition and characteristics of the source data and the converted data:
- b. document data conversion rules:
- c. provide consultation for improved efficiency and effectiveness in conversion and testing of the data;
- d. provide NASA customers data reconciliation solutions; and
- e. establish and operate of an information management authority to reconcile and harmonize NASA HQ data.

#### **5.9 Quality Assurance & Performance Controls**

NASA HQ seeks to implement repeatable application and information development processes that minimize errors, leverages previously employed solutions and maximizes service delivery to the customer. Additionally, all defects noted by the government during acceptance testing are deemed application defects for the purposes of this contract and will be remedied at no cost to the government. Defects will be defined as:

- Baseline Defects: the number of defects documented at the time of transition.
- Release Defects: defects identified after deployment that are introduced as the result of new or modified code, back end changes, or modification in application configuration. (ITCD reserves the right to update this definition based on the application portfolio. As

the types of applications and their architectures change, review of the Release Defect definition will be required.).

To ensure project deliverables meet NASA HQ quality standards, the contractor shall:

- a. establish and enhance quality assurance and quality control processes;
- b. incorporate and identify a QA approach in each project plan;
- c. establish, update and adhere to a method and process for code and system peer review;
- d. develop and deliver a test plan for each project, regardless of project size or complexity including a pre and post deployment acceptance period;
- e. validate requirements and design specifications;
- f. complete all testing prior to government acceptance testing;
- g. ensure products for acceptance testing includes a formalized assurance report as part of the documentation from contractor that confirms all requirements and design specifications have been met and the project is ready to be deployed in production, report should include test results and findings;
- h. utilize QA practices to ensure defined procedures are followed and corrective action taken when procedures need to be modified;
- i. document and communicate risks and issues identified in the QA program to NASA; and
- j. be responsible for delivering a quality product as measured by the customer.

Application performance is measured at the user interface level based on customer impact. The contractor shall:

- a. recommend performance metrics; provide tools and perform systems, performance, tuning, and capacity analysis studies for applications;
- b. use modeling and/or prototyping techniques to quantify sizing of required resources;
- c. identify and recommend system optimize opportunities and strategies; and
- d. include performance planning approach in application design documentation.

#### **5.10 Application Status Reviews**

To facilitate NASA HQ's management of the Development Program, the contractor shall provide a monthly summary of development activities, including newly identified risks, recommended mitigations, and project status for cost, schedule, and quality. While the contractor may propose the format and full content of the Application Review Package, the package contents are to be coordinated with the government lead for application development, made available via the web and have a strategic focus. At a minimum the Application Review shall contain: schedules for applications currently in work; current project life cycle phase and project progress at the task level; project and program risks, issues, and both executed and planned mitigations; upcoming

milestones; deployments planned for the current month; All current and anticipated schedule rebaseline requests; and the program project plan for the next two months, based on the Integrated Master Schedule.

DRD	Description	Frequency
DRD #39	Application Status Review materials.	Three months from contract
		start date, monthly thereafter.

# 5.11 Application Portfolio Management

NASA HQ maintains a catalog of software applications, currently in our Repository of Supported Applications (ROSA). The contractor shall update, augment, validate, and maintain current the Catalog of Contractor Supported Applications to support in application sharing, reuse, portfolio management, migration and similar support activities. The contractor will be responsible for maintaining this information, current with each software and web site release. There are approximately100 ITCD supported applications and web sites managed through ROSA. Application data includes customers, service types, dependencies, system integration methods, and technologies and must align with or adopt agency nomenclature for portfolio categorization.

This catalog serves as a single document reference point for NASA and contractor management and staff for supported and active production applications. The contractor shall:

- e. use existing tools when possible to perform the catalog function;
- f. ensure the catalog includes applications that reside on all classes of computer platforms and networks, as well as all physical locations;
- g. ensure the catalog includes all web sites that are developed and/or maintained by the contractor;
- h. align where feasible to agency application portfolio categories; and
- i. provide web-enabled access for ITCD and designated customers to the catalog.

The contractor shall analyze the current NASA HQ application inventory and submit recommendations throughout the course of this contract regarding opportunities to improve portfolio management, improve technologies, reduce operations and/or costs, improve data quality and availability. Project reporting will include identification of variances in portfolio strategies, impacts and risks. Additionally, the contractor shall include mechanisms to find, sort and analyze our portfolio by:

- a. the number of legacy applications in the portfolio approaching end of life;
- b. the number of legacy applications in the portfolio requiring technology refreshes;
- c. the number of legacy applications in the portfolio with low utilization;
- d. the number of legacy applications in the portfolio with large footprints on the infrastructure and large resource consumption; and

e. the reduction or trending of maintenance required for applications.

DRD	Description	Frequency
DRD #40	Portfolio Management Views of	Six months from contract start
	Application Services and Inventories.	date, and maintained
		continuously thereafter.

# **5.12 Contractor's Development Environment**

The contractor shall provide a managed and controlled environment in which it will conduct application development and testing. This environment shall include the appropriate hardware and software environment for the management of requirements, design, configuration management, testing and curation of the code base and interfaces. The development environment must be secure and be certified and accredited at no cost to the government. The contractor is responsible and liable for all security risk associated with this environment, including housing, storing, and transferring data. The government will be provided access to the development environment during normal business hours.

A goal of this contract is to leverage source code developed with public funding, open source, unlimited license and similar code release strategies to reduce costs and enhance the NASA HQ application portfolio. NASA owns all source code developed under this contract for use by NASA. The contractor grants NASA the right to use all source code provided by the contractor, but developed elsewhere, beyond the end of this contract. To ensure the quality of application development projects the contractor shall:

- a. develop an explicit plan for project verification and validation that reflects current industry best practices and takes a life cycle approach to quality management;
- b. provide development test plan framework within one month of contract award;
- c. generate and use test plans, procedures, specifications, and reports;
- d. provide test scripts and test procedures that are repeatable and under configuration control;
- e. provide and utilize automated test tools for unit, integration, regression, system, and load testing identified in the test plan and utilized accordingly;
- f. document test results, deviations from test procedures, and all software anomalies following completion of the testing;
- g. prepare and conduct an acceptance test that demonstrates to the NASA customer the integrity of the application and prove that the application meets specified requirements; and
- h. provide final and deployable application for the start of acceptance testing.

The contractor shall ensure that applications do not use production data for testing or otherwise prior to operational deployment, unless specifically approved by NASA.

DRD	Description	Frequency
DRD #41	As built detailed functional and	Two months from contract start
	physical description of development	date, provided within 2 days of
	environment, its interfaces and	changes to structural or ITS
	processes.	environment including patches.

### **5.13 Application Deployment**

The contractor shall deploy applications and websites in the customer's computing environment following a successful Operational Readiness Review and pertinent training as defined in the SMG. For projects deployed to hosting facilities managed outside of this contract, the contractor shall meet all required steps for transitioning the project to the hosted facility for deployment. The contractor is responsible for determining, providing, and/or following (executing) deployment steps at the hosting facilities or in conjunction/collaboration with hosting facilities staff regardless of the facility. The contractor shall:

- a. provide a Release Implementation Plan (RIP) (formerly known as the VDD) and Release Notes Document (RND) for each software application release;
  - The RIP shall describe how the software is to be installed, tested and accepted by the user;
  - The RIP shall include the technical information of the application/website including but not limited to: database information, server information, etc;
  - The RND shall provide release notes and known issue information that is intended for the end user/application owner;
- b. deliver the User and Operations Guide as required;
- c. deliver any end user training and other related training, in coordination with user outreach as defined in Section 4.3 Customer Education and Outreach, as required;
- d. baseline the final application documentation and source code;
- e. maintain the baseline under configuration management control;
- f. perform coordination with the data center hosting provider to ensure post-deployment success;
- g. perform coordination with the desktop provider (ACES) as required; and
- h. Provide a Website Delivery Implementation Plan/Version Description Document or an Application Delivery Implementation Plan/Version Description Document for each release.

DRD	Description	Frequency
DRD #42A	Application Delivery Implementation	Initial draft five months from
	Plan. (Formerly Version Description	contract start; final six months

	Document but renamed to Release	from contract start date.
	Implementation Plan Template)	
DRD #42B	Website Delivery Implementation	Initial draft eight months from
	Plan (Formerly Version Description	contract start; final nine months
	Document but a secondary plan	from contract start date.
	created specifically for Website	
	Implementations)	
DRD #42C	Release Notes Document Template	Initial draft five months from
		contract start; final six months
		from contract start date.
DRD #43A	Release Implementation Plan (for each	Scheduled in accordance with
	Application and Website)	CCB.
DRD #43B	Release Notes Document (for each	Scheduled in accordance with
	Application and Website)	CCB.

Metric	Description	Performance Level to Achieve Fee
Metric #9	Error Free Releases. All application version releases shall be error free and not require post-release repairs.	57% - 92% are error free.

# **5.13.1** Application Service Management Support and Administration

The contractor shall provide application and information management support for new and/or enhanced applications throughout the application life cycle. The contractor shall:

- a. provide programming support for all applications of the DBMS;
- b. collect and analyze selected DBMS data (at times from disparate data bases and application platforms);
- c. support trade-off studies regarding selection of COTS, GOTS, MOTS, and open source DBMS products;
- d. perform data administration and data base administration in accordance with operations guidelines;
- e. coordinate with IT Security (ITS), Systems Engineering and Integration (SE&I), System Operations, I<sup>3</sup>P contractors and all other organizational entities in identifying, fielding, debugging, and restoring services,
- f. perform design and implementation of new data file structures and relations to meet requirements for data base expansion; and
- g. perform data administration and data base administration activities to support applications, web sites, development activities, and post-deployment issues.

## 5.14 Electronic and Information Technology (EIT) Accessibility, Rehabilitation Act of 1973

The contractor shall comply with Section 508 of the Rehabilitation Act (29 U.S.C. 794.d) as amended by the Workforce Investment Act of 1998 (P.L. 105-220). Section 508 was enacted to eliminate barriers in information technology, open new opportunities for people with disabilities, and encourage development of technologies that will help achieve these goals.

The contractor shall ensure, unless an undue burden would be imposed on NASA, that systems they develop, procure, maintain, or utilize electronic and information technology be accessible to:

- individuals with disabilities, who are NASA employees, have access to and use of information and data that is comparable to the access to and use of the information and data by NASA employees who are not individuals with disabilities; and
- individuals with disabilities, who are members of the public seeking information or services from NASA, have access to and use of information and data that is comparable to the access to and use of the information and data by such members of the public who are not individuals with disabilities.

The contractor shall comply with Section 508 technical standards for all EIT they develop, procure, and maintain. This includes the following technologies:

- software applications and operating systems;
- web-based information or applications;
- telecommunication products;
- video and multimedia products,
- self contained, closed products (e.g., information kiosks); and
- desktop and portable computers.

## 5.15 Support for HQ & Agency Forms

The contractor shall develop, implement, and maintain both Agency and HQ operational forms. "Forms" refers to paper forms, metal or other signs, media and other labels, and forms produced by electronic means as referenced in NASA Policy Directive (NPD) 1420.1A, NASA Forms Management Policy. In support of this activity, the contractor shall:

- a. Collaborate with the Agency Forms Officer (AFO), HQ Forms Manager (HQFM), forms sponsoring offices, and the NASA Electronic Forms Working Group (NEFWG).
- b. Conduct outreach, communications, and training in support of the Forms Management Program as defined in this PWS, section 4.3, Customer Education and Outreach.
- c. Produce and maintain a forms management SOP and forms design standard, based upon the requirements of NPD 1420.1A, commonly accepted business practices, and Business Forms Management Association (BFMA) guidelines.

- d. Design, produce, publish, and maintain Agency and HQ forms in either electronic media or hard copy as defined by the sponsoring organization's requirements for the form.
- e. Apply Agency printing and publishing standards to forms in accordance with NPD 1490.1, NASA Printing, Duplicating, and Copy Management.
- f. Maintain a repository (electronic or hard copy) of Agency and HQ forms via web access from the NASA Electronic Forms System (NEFS). Maintain all original artwork, printing base files, CAD drawings for signs, etc. in the forms case files to support printing requirements. The forms repository contains approximately 286 Agency forms and 103 HQ forms.
- g. Manage the forms case files in accordance with NASA Procedural Requirement (NPR) 1441.1, NASA Records Retention Schedules.
- h. Create new or update forms upon request by form sponsoring organizations or at the direction of the AFO or HQFM. Approximately 29 new forms are created and 39 form revisions are made each year.
- i. Conduct the Biennial Review of Forms for both Agency and HQ forms as required in NPD 1420.1A, NASA Forms Management Policy.
  - a. Upon completion of the Biennial Review of Forms, submit a final report to the AFO and HQFM summarizing the data collection required for each biennial review.
  - b. Based upon the results of the Biennial Review of Forms, revise or cancel forms as needed.
  - c. Provide data to the AFO and HQFM listing all active NASA and Center forms collecting PII to include part or full Social Security Number (SSN) information.
- j. Provide data quarterly to the HQFM identifying all HQ forms revisions, cancellations, and new forms for the production of the HQ Forms Bulletin, which is produced and sent out by the HQFM.
- k. Provide data quarterly to the AFO identifying all Agency forms revisions, cancellations, and new forms for the production of the NASA Forms Bulletin, which is produced and sent out by the AFO.
- 1. Maintain the forms inventory databases for all Agency and HQ forms, and provide reports on demand to the AFO and HQFM.
- m. Provide recommendations to the AFO/HQFM for forms enhancements, potential forms consolidation, and/or workflow migration to existing systems.
- n. Provide recommendations to the AFO/HQFM for methods to increase economy, efficiency, and productivity of the Forms Program.
- o. Provide an online portal by which the AFO and HQFM can access real time data regarding the status of Agency and HQ forms, including but not limited to:
  - a. total inventory count (active, inactive, cancelled, etc.)
  - b. type of form (hard copy, sign, electronic)

- c. count and detail of forms collecting PII or other SBU
- d. count and detail of form complexity (including workflow)
- e. count and detail of forms compliance with NASA Records Retention Schedule identifiers
- p. Attend the NEFWG meetings and other meetings as requested.
- q. Support the migration to the Agency eForms solution, including, but not limited to:
  - a. participating in meetings related to the migration project,
  - b. responding to data calls related to the migration project,
  - c. conducting testing of forms design in the new product as requested,
  - d. attending training on the new product
  - e. providing support for outreach, training, and education related to the migration project

DRD	Description	Frequency
DRD #44a	Biennial Review of Forms Final	First report due 10/1/2014 and
	Report	biennially per NPD 1420.1A
DRD#44b	Quarterly Data to Produce Forms	Quarterly (December, March,
	Bulletins (one for Agency and one for	June and Sept)
	HQ)	

## 6.0 NASA HQ Data Center

Data Center support at NASA HQ is divided between two major areas of responsibilities: the network infrastructure and the application and file servers that reside on it. The NASA NICS contract will manage and be responsible for all of the HQ's network infrastructure and support inclusive of firewall management, network address management, and the monitoring and management of routers, switches, cables and probes. The HITSS contract will be responsible for server management monitoring, maintenance and administration, inclusive of server and application deployment, troubleshooting and mitigation. The NICS and HITSS contractor teams must be well integrated and mutually supportive to assure that performance, availability and security are maintained at the highest levels practical and that moves, adds, changes, monitoring for performance, availability, capacity planning, reporting, and recovery processes are performed without organizational impedance.

The goals of ITCD are to provide uninterrupted service of our housed and hosted assets; to facilitate service advertisement and analytics; to provision continuity with similar data centers and alternative sites; to reduce the data center's impact on our environment; to reduce its size

and; to eventually reduce our dependence on a HQ data center by reducing its size to the greatest extent that is practical. As such the contractor shall plan upgrades, process changes, monitoring tools, infrastructure modifications, deployment and audit methods in the context of an overall plan to migrate the HQ data center to its optimum configuration within the Office of Management & Budget, the Office of the CIO and ITCD's guidelines and HQ building modernization schedule.

## 6.1 Data Center Operations, Scope

HITTS is responsible for the availability, reliability, and uninterrupted service of all servers, appliances, backup devices, storage devices, web streaming devices, data storage systems, server monitoring, and other similar systems and subsystems that reside within the HQ computer room and collectively provide customers with IT services such as databases, file storage and sharing, application and web hosting, authentication, and directories. The contractor shall:

- a. coordinate issues of performance and availability of HQ resident services that are reliant on responsive network connectivity with the NICS provider;
- b. provision machine processable Service Level Agreements which can be audited by all members of the agreement including the Government; and
- c. properly label servers, and provide a means to easily locate server racks.

In addition to the IT services managed and hosted at the HQ Data Center, Operations also shares responsibility for services housed at HQ's but managed by external contracts (WEST/EAST/NDC, etc). To support their coordination role the contractor shall:

a. actively participate in configuration control, problem escalation/resolution, installation, and ITS with counterparts on other contracts or at other Centers in order to assure that failures of services are minimized; and

DRD	Description	Frequency
DRD #45	Reserved	
DRD #46	Service Level Agreement Audit.	Six months from contract start date.

#### **6.2 Hours of Operations**

The contractor shall provide on-site operations and maintenance support to all HQ systems. Support includes, but is not limited to, HQ based services, specialized services for commissions and study groups, file storage and data recovery, financial system portals, and similar services that are critical to business support for HQ customers. On-site support shall be provided during the Prime Time hours of 6:00 am until 6:00 pm Monday through Friday (except for holidays). During Non-Prime Time hours the contractor shall respond to the automated alerts, the Help

Desk, or Government notification within 15 minutes. If the problem cannot be resolved remotely, arrive on-site within two hours of the initial notification.

## 6.3 Server Management Team (SMT) Operations

NASA HQ hosts general service as well as specialized application and file servers that, along with large storage, backup and other associated hardware, comprise the HQ service infrastructure. HQ hosted services include, but are not limited to, personal and organizational file storage, database and web applications servers, LDAP and certificate servers, monitoring and intrusion detection servers, and streaming media encoders. These services are reliant on devices that include UNIX computers, mirrored Network Attached Storage devices, Storage Area Network devices, enterprise tape library system, Windows, Solaris and Linux Operating Systems, appliances, power supplies and monitoring equipment. HQ also houses agency services such as Internet Protocol Address Management (IPAM), Domain Name Service (DNS), NASA Consolidated Active Directory (NCAD), and intrusion detection devices. The service infrastructure largely conforms to a design goal of uninterrupted service. As a result, many of the servers are in a High Availability (HA) implementation and all are expected to be monitored 24 X 7. The goal for all of HQ hosted servers and appliances is to provide optimum performance and consistent availability to customers 99.99% of the time, 24 hours a day. The goal for HQ housed servers is the same as for hosted unless superseded by an ITCD signed or concurred MOU or OLA.

DRD	Description	Frequency
DRD #47	Availability of hosted and housed	One month from contract start
	services.	date, monthly thereafter.
DRD #48	Performance of hosted and housed	One month from contract start
	services.	date, monthly thereafter.

Metric	Description	Performance Level to Achieve Fee
Metric #10	Data Center Availability. Data	99.90% - 99.98% average
	Center systems and services (hosted and housed) shall be available on a 24 X 7 X 365 basis.	availability.

## **6.4 HQ Hosted Server Operations**

Hosted servers largely have services that are provisioned by HQ. For hosted services, the contractor shall:

- a. maintain transaction and service logs of servers and services within the HQ computer center:
- b. assure that quality and timely services are available;

- c. assure performance is responsive to OLA and Government direction;
- d. coordinate and perform upgrades;
- e. maintain hardware & software;
- f. enable accounts;
- g. be actively engaged in problem coordination, analysis and resolution;
- h. co-develop fail-over strategies, service integration, and budget planning;
- i. administer, plan, manage and provision storage;
- j. provide quantitative capacity planning;
- k. provide security reporting, monitoring and management reporting, and Help Desk coordination; and
- 1. support in special projects to support Agency and HQ initiatives as well as special commissions and review boards.

#### **6.5 HQ Housed Server Operations**

There are several agency IT assets which currently provide critical services to the HQ customer community and to the successful operations of the HQ Data Center. Those services are housed within the HQ Data Center, and their configuration, management and monitoring is performed by Office of the Chief Information Officer (OCIO) organizational entities via the I<sup>3</sup>P or other contracts. These include Active Directory servers/services, Internet Protocol Address Management (IPAM), (DNS/DHCP) servers/services and NCAD servers/services. Coordination for environmental issues, alert notification, trouble shooting, restoration and process modifications are some of the activities required by the HITSS contractor. To meet these responsibilities the contractor shall:

- a. maintain and test a verified call list and escalation process;
- b. coordinate and perform any needed environmental changes;
- c. coordinate and execute needed configuration or restoration in conformance with CCB process;
- d. co-develop process changes; and
- e. report anomalous conditions.

## 6.6 Monitoring, Management and Capacity Planning

To facilitate lifecycle management, virtualization, migration, debugging and sound business processes the contractor shall provision a continuous monitoring capability that enables ad-hoc views and analytics of the HQ service infrastructure. Severs and services within the HQ Data Center are monitored using a robust implementation of Nagios that provides visibility in CPU, cache, I/O and other critical indicators that help determine use, availability, capacity and trends.

The contractor shall support NASA in planning for and implementing changes to servers associated with determining the capacity and utilization of application servers and infrastructure servers. The contractor shall:

- a. manage, install and maintain the performance monitoring and capacity planning tools at the HQ Data Center;
- b. monitor for software performance and capacity planning changes inclusive of CPU utilization, memory usage and notify the performance monitor accordingly;
- c. tune, adjust and modify systems and associated software for optimum performance within established security and CCB processes;
- d. assess, with appropriate recommendations, the adequacy and effectiveness of solutions to hardware and/or software problems that are degrading computer system performance;
- e. monitor and manage server use utilization including when it requires the insertion of equipment or agents into discrete components, devices, or the operating systems in order to identify and isolate anomalous conditions;
- f. study trends, harvest and analyze data from existing management tool databases, develop new processes and procedures, and recommend innovations to ensure peak performance and availability of the service;
- g. monitor, manage and provide trending views of services with data exchange agreements to assess the frequency and success of exchanges between those services within the HQ Data Center;
- h. use structured and sound analytics to determine level of server use, peak use, and trends fact-based forecasts and modeling to assure levels of storage, memory, cache, and similar server subsystems are able to efficiently manage current services as well as determine capacity for growth or additional hosting requirements;
- i. provide on-call, continuous support and shall respond within 15 minutes to the automated notifications from the HQ Data Center. Arrive on-site, if necessary, within two hours of the initial notification:
- j. ensure agreements that document, manage, audit, and modify Data Exchange Agreements are in place between and across all relevant systems within the HQ domain. The agreements will be living documents used to assess performance delivery and reused to extend service;
- k. operate and maintain all of the servers, data storage devices systems and subsystems that together comprise the HQ Service Infrastructure which provides services at HQ from inside the HQ campus or externally;
- deploy and maintain all servers in accordance with the operating system and application configuration benchmarks published by the Center for Internet Security (CIS) as adopted by NASA Headquarters;
- m. develop, acquire, secure, sustain, operate, or recommend system service enhancements, upgrades, or new capabilities. Proposed implementations shall provide an integrated approach with respect to existing systems, other work in progress, and applicable

- policies, standards, and methodologies while maintaining optimum security and performance;
- n. coordinate hosting, relocation, enhancement and debugging activities with application development personnel, system administrators, the IT Security team, SE&I, Outreach, CM, and Help Desk, I<sup>3</sup>P contracts, and any other group or individual that may be impacted by a change or require SMT to support a change;
- o. support the service capabilities at service levels in accordance with OLAs that ensure that the availability requirements are satisfied. This support shall quickly respond to changes in technology, IT Security threats and incidents, dynamic requirements and system, equipment, software, service, and carrier outages;
- p. notify ITCD as early as possible of the need for outages or reduced services due to IT Security threats and/or incidents, investigation of anomalous behaviors, equipment failure, or other contingencies that cannot be scheduled;
- q. provide planning, definition, design, security, development, acquisition, implementation, maintenance and sustaining engineering support for new server systems or subsystems,
- r. ensure that all CM documentation including diagrams, System Description Documents (SDDs), processes and procedures for the HQ Data Center devices and services is maintained and accurate;
- s. develop, implement and maintain procedures, policies and standards to provide effective performance tuning and capacity planning such as service, memory, and processor utilization, and application performance;
- t. provide analysis and growth projections for all supported systems;
- u. provide and have accepted monthly capacity reporting and recommendations within 3 days of the end-of-month;
- v. monitor, maintain, and administer Headquarters Mailman List servers and services;
- w. analyze performance of all supported systems (e.g. servers, storage systems, etc.) and provide monthly reports and have them accepted within 3 days of end-of-month. Performance Tuning will be accomplished to improve system performance; and
- x. leverage data acquired and analytics performed to properly plan the data center's migration to its optimum configuration.

DRD	Description	Frequency
DRD #49	Diagram of server location.	Three months from contract start date and every 3
		monthsthereafter.
DRD #50	Diagram of servers logical connection to network.	Three months from contract start date, on-demand thereafter.
DRD #51	Capacity and Performance Report.	Two months from contract start
216201		date, on-demand thereafter.

#### **6.7 Server Backups**

The contractor shall perform regularly scheduled backups of servers and data storage devices in accordance with current SOPs. The contractor shall:

- a. restore files on an on-demand basis;
- b. conduct regularly scheduled quality assurance and process tests for the restoration process;
- c. test the restoration process end-to-end at least twice each year and make recommendations. The first test shall be within the first 90 days of contract start
- d. in the event of any contingency operations, current files and services must be available for recovery at remote sites; and
- e. support the planning integration, coordination, and operations required to mirror selected files and storage devices at a designated remote location.

## 6.8 System Software Installations, Maintenance and Management

The contractor is responsible for assuring that server operating systems and affiliated libraries, patches and administrative software is up-to-date. The contractor shall:

- a. monitor and report on system performance, availability and security;
- b. participate or lead debugging and trouble shooting;
- c. implement and maintain updates, corrections and enhancements to subscription services, operating systems and other commercial software packages;
- d. ensure that licensing and certificates on servers do not expire;
- e. ensure that all commercially released OS upgrades, software enhancements and patches are installed quarterly for Unix based servers (approximately 201 for Unix and 63 for Linux per quarter), monthly for windows based servers (approximately 250 per month) and on-demand for appliances. Security patches may occur out of normal scheduled upgrades. The contractor shall submit the appropriate Service Request to start the work so that the enhancement or patch can be completed on all supported devices within the year time frame requirement. The CCB process shall be used to govern the schedule should delays be necessary to:
- f. ensure HQ Data Center software is in operating condition, current, with up-to-date maintenance, and is secure;
- g. install and/or make updates to system software at a time that will not affect user productivity;
- h. develop and maintain required test procedures or simulations to properly test software upgrades, modifications and maintenance;
- i. provide an ongoing program to evaluate new commercially available software and provide reports including recommendations to designated NASA management;
- j. ensure all operational support software modifications are installed, secure, work as expected and that no problems have been detected;

- k. prepare a system software implementation test and release plan for each release or software package update and present it for approval of the performance monitor
- 1. maintain subscriptions to the OEM system software services;
- m. review OEM web sites for failure, security, and enhancement information and install updates or patches as appropriate; and
- n. manage and maintain hardware and software maintenance agreements for all production systems.

DRD	Description	Frequency
DRD #52	Quarterly/Monthly Patch Release	One month after contract start
	Report.	date, monthly thereafter.

Metric	Description	Performance Level to Achieve Fee
Metric #11	Compliance with Patch	95% - 98% meet the criteria.
	Management Plan. Data center	
	servers shall be patched in	
	accordance with the approved	
	patch management plan and	
	schedule.	

## 6.9 Equipment Upgrade Support

The contractor shall provide, at a minimum, a semiannual evaluation of new commercially available equipment for use in the HQ Data Center and provide recommendations to NASA management.

DRD	Description	Frequency
DRD #53	Equipment Upgrade Evaluation	90 days of contract start date
	Report.	and semiannually thereafter.

#### 6.10 Account Administration

NASA has implemented the NASA Account Management System (NAMS), as part of NEACC (NASA Enterprise Applications Competency Center. Currently, NASA HQ new application account requests, changes and deletions are processed through NAMS. HQ Account Administration staff receives notification from NAMS when all the required approvals have been made for account requests and proceeds with provisioning the application access. There are other, local, IT services where account provisioning and coordination is the responsibility of the HITSS contractor. This includes accounts for HQ network domain and data servers, File

Transfer Protocol (FTP), and HQ custom applications. Among the responsibilities for account management, the contractor shall:

- a. maintain up-to-date procedures for coordinating with IT Security, Help Desk, NAMS and others for account creation, modification and deletion;
- b. provision password resets for local applications via the Help Desk processes;
- c. provision user accounts for custom applications (approximately 50 new accounts and 50 deletions per month);
- d. create Guest Network accounts;
- e. provision new standard personal Microsoft networked folders;
- f. support modifications to process and provide support to meet future NASA account services; and
- g. adhere and comply with applicable regulations and policies (e.g., HSPD-12, NPR 2810.n.).

## **6.11 Operational Support for IT Security**

The HITSS contractor is responsible for management of the ITS function within the Headquarters' infrastructure including the Data Center and to coordinate observations of anomalous behavior, analysis of threats as well as threat responses with those in the ITS, network and HQ IT communities. (see ITS section 8.0). The contractor shall:

- a. maintain a clear and complete understanding of all internal network protocols used and associated internal-to-internal and internal-to-external source(s)/destination(s);
- b. maintain an escalation and analysis call list for all points-of-contact required in resolving ITS operations problems;
- c. provide anomalous behavior analysis, status and reporting during Prime Time hours and;
- d. report any identified anomalous behavior at Daily Tag Up..

DRD #54	Reserved	

#### **6.12 Physical Control Support**

Because of the sensitivity of the systems and services within the Data Center, and because of the potential damage that could be done by an individual who has physical access to the hardware and network within it, the NASA HQ Data Center has restricted access which must be vigorously maintained by the HITTS contractor. The contractor shall:

- a. monitor the physical security of the HQ Data Center and all sensitive unclassified automated information resources within the HQ Data Center;
- b. work closely with HQ Security to control HQ Data Center access provided to contractor and subcontractor personnel;
- c. comply with the policies and procedures for HQ Data Center physical security in accordance with established procedures; and
- d. maintain server racks, server facilities and telecommunications closets in a clean, safe, and well organized way.

## **6.13 Environmental Control Support**

The NASA HQ Facilities and Administrative Services Division (FASD) is primarily responsible for provisioning the environmental systems and power that support the HQ Data Center, however co-monitoring and coordination is critical to the safe operations of the HQ Data Center. The contractor shall continually monitor the environmental conditions of the HQ Data Center. The contractor shall immediately report all anomalous conditions to ITCD and to FASD. The contractor shall maintain a verified call and escalation list.

## 6.14 Technical Documentation and Data Center Reporting

The contractor shall develop, contribute, implement and/or update technical documentation for the HQ Data Center. Technical documentation shall include policies, operations, and guidelines. The contractor shall provide HQ Data Center System Assessment and Metrics Reports.

DRD	Description	Frequency
DRD #55	Data Center (including SEF) SOP	Six months from contract start
	Audit & Recommendations Report.	date and monthly thereafter.

## **6.15 Outage Notification**

The contractor shall notify ITCD as early as possible of the need for outages or reduced services due to new security threats, investigation of anomalous behaviors, equipment failure, or other contingencies that cannot be scheduled. The contractor shall categorize activities as to whether they are security, equipment, service or software related on a 24/7 schedule and provide recommendations and take appropriate actions. If the anomaly is concluded to be equipment, service or software related, report to the performance monitor and take appropriate action(s) during normal working hours and within 3 hours for after hour occurrences

## **6.16 Printing Support**

All printing support will be moved to the I<sup>3</sup>P contracts. NASA HQ migrated 100% to /ip-based printing and away from print servers; therefore, there is only a minimal amount of work effort in

this area. The exception is support for the PRGate print server which is in place to provision /ip printing across the HQ security zone for visitors using our guest wired and wireless network. NASA HQ does not anticipate a reversal to our elimination of print servers. To support printing the contractor shall:

- a. assure timely and coordinated service upgrades on the remaining print server, PRGate; and
- b. assure timely support and coordination for any security issues.

(Moved to Section 4.4.2)

# 7.0 Systems Engineering and Integration (SE&I)

The Systems Engineering & Integration (SE&I) function provides technical leadership in path finding, analysis, trouble-shooting and expertise in Information Technology, Information Security and Computer Science disciplines. As the technology leaders and lead analysts, the SE&I staff is tasked in areas of innovation, agency integration, systems design, requirements formulation and documentation, planning and to quickly resolve escalated problems.

The Systems Engineering & Integration support portfolio at NASA HQ is comprised of five areas of emphasis; (1) assurance that all new IT capabilities and services are designed and implemented in the most efficient and effective manner, (2) technical forecasting, studies conducted in areas that advance the goals of HQ IT, (3) participation in agency and external working groups, (4) advanced trouble shooting and problem resolution, and (5) HQ IT planning. There is an SE&I testing facility adjacent to the HQ Data Center and is specially purposed for testing, build-outs, vendor demonstrations and analysis (currently there are approximately 50 SE&I Service Requests initiated per year).

## 7.1 Innovation Program

NASA HQ customer's require agile adaption to organizational change or business needs. As a result, innovation must permeate all facets of this contract. To facilitate this requirement, ITCD has established an Innovation Program. To directly support this program, in conjunction with ITCD's CTO the contractor shall evaluate and investigate new and emerging applications technologies and approaches; and analyze and recommend technologies for integration and use within the NASA development and/or operational architecture. The contractor shall:

- a. explain how specific new technologies can contribute to meeting ITCD's goals;
- b. provide analysis of new and emerging applications technologies capabilities and maturity readiness;
- c. analysis of alternative technologies (new or existing) that the ITCD should consider;

- d. how a technology may fit into the NASA Enterprise Architecture;
- e. analyze readiness factors for insertion of new technologies;
- f. provide life cycle cost analysis for the proposed technologies;
- g. provide technical demonstrations of evaluation packages; and
- h. develop and maintain an online environment that provides details to innovative technologies and solution sets that aligns and conforms to similar systems at other centers.

DRD	Description	Frequency
DRD #56	Reserved	

## 7.2 IT Service Design, Integration & Implementation

IT Services may include everything from migrating point to point data exchanges, to integrating multi-touch interfaces, to implementing rules engines to utilizing cloud algorithmic services. The contractor shall ensure that proposed implementations provide an integrated approach with respect to customer business needs, requirements, existing HQ IT infrastructure, future direction, IT Security, work in progress, and applicable NASA policies, standards, and methodologies. This integrated approach shall encompass the architecture, equipment, software and data associated with the HQ environment and driven by requirements and use cases. Occasionally, establishment, enhancement or extension of a service capability may include other NASA centers or customers outside of NASA HQ.

In order to align ITCD with the Agency's strategy for data centers, the contractor shall develop, submit and regularly update a Data Center Modernization Plan, detailing plans during the upcoming period and the top five to ten quantifiable objectives expected to be achieved. The Government and Contractor will discuss, modify (if necessary), and agree to the top five to ten objectives, which will form the basis for a portion of the incentive fee determination (technical performance) during that period. The contractor shall submit a report at the end of each period to describe the accomplishments against the objectives met from the previous period and which 5-10 objectives will be targeted for the next period. The Data Center Modernization Plans shall align with the general guidance in section 2.3.1 and 2.3.2 of this Performance Work Statement.

DRD	Description	Frequency
DRD #57	Data Center Modernization Plan	Initial plan three months from
		contract start date; updated plan
		at six months, and every six
		months thereafter.

## 7.2.1 System Engineering Requirements & Analysis

As the technical leads in several areas, it is critical that the SE&I requirements analysis documentation is valid, timely and complete. The SE&I requirements process will be in conformance with the EA/CCB guidelines. The contractor shall be responsible for:

- a. the collection, interpretation, generation, validation and documentation of requirements for IT systems and services;
- b. assurance that derived requirements are captured and documented;
- c. requirements gathered and documented at a sufficient level of detail and in a form that is useful for the Government, or another Government contractor or used as part of analysis requested by a HQ customer;
- d. annotation of requirements generated by another NASA, Government or vendor to depict relevance to the HQ IT infrastructure or point of view;
- e. assessments to resolve near-term operational issues, implementation strategies, improve services, advance information management, reduce risks, reduce costs or to improve the customer experience; and
- f. analysis, interpretation, studies regarding changes to technology, policy or lessons learned which may benefit or impact HQ IT customers, infrastructure, or plans.

#### 7.3 Systems Engineering Design

Design solutions must meet or exceed use cases and address all requirements. The contractor shall be responsible for:

- a. designs to meet the documented requirements;
- b. designs consistent with Internet, Industry, Agency and / or HQ standards, architecture or design targets (e.g. High Availability);
- c. designs consistent with rigorous application of design-to-cost methodology;
- d. specifications for systems, components, equipment, and software, services, supplies and Concept of Operations (ConOps) that implement the design;
- e. written documentation of all designs, in accordance with Industry, government or NASA HO standards;
- f. design coordination with the HQ IT Security, Operations, Applications, and other appropriate groups to ensure that risks are minimized and that security requirements are being adequately addressed and satisfied;
- g. design reviews to ensure that a design meets documented requirements and architectural target, consideration of human factors (e.g. usability, training), engineering principles (e.g. minimizes security risks, and effectively and efficiently uses HQ and/or NASA IT resources); and

h. design and specification reviews that are in accordance with Configuration Control Board processes.

## 7.4 Systems Integration & Implementation

Assurance that designs of proposed solutions are made available and are supportable within our infrastructure demands thorough analysis and coordination. The contractor shall be responsible for:

- a. a systems view, understanding the interdependencies between HQ, Center, contractor services, agency services, and Internet services;
- b. implementations that provide an integrated approach with respect to existing HQ IT infrastructure, customer support, IT Security, other work in progress, and applicable NASA policies, standards, and methodologies;
- c. implementations to enhance or extend a service or capability to HQ that is part of other NASA, government or business partners;
- d. implementations to enhance or extend a service or capability within HQ, to other NASA Centers or to customers outside the Agency;
- e. staying current with evolving systems designs and implementations to ensure integration with other NASA systems or services (e.g. I<sup>3</sup>P, ITS, pilots, etc.); and
- f. build out of new servers & services, installation applications, production servers support maintenance.
- g. keep accurate, auditable as-build diagrams, POC documentation, OLA and Data Exchange Agreements (DEA), call-down return to service information, and ITS status for all items in the HQ Data Center.

DRD	Description	Frequency
DRD #58	Data Exchange Agreement Audit and	Six months from contract start
	Gap Analysis	date.

## 7.5 Forecasting, Studies and Development

The contractor shall maintain awareness of new trends in technologies, evolution in services, and developments in service delivery strategies that are emerging in academia, standards communities, Industry or Government at sufficient levels to recommend innovations and to determine applicability, readiness and impact. The driver is a continual assessment to identify opportunities to improve the provisioning of IT services, increase capability, decrease costs, and improve information services to the customer. The contractor shall:

- a. provide assessments based on sound analysis to implement new capabilities that either advance ITCD's stated direction or that are game-changing and warrant augmentation of target states;
- b. provide path-finding and technical reviews that indicate important trending and areas to watch;

- c. offer analysis, whitepapers, trending and similar products to stimulate possible direction or to elevate awareness of potential changes to HQ IT;
- d. provide assessments of white papers, initiatives or the proceedings from working group sessions that are conducted under the auspices of the NASA Chief Information Officer (OCIO), conferences, and seminars;
- e. conduct technology comparative analysis that evaluate emerging IT technologies and services that have not yet been introduced to the NASA or HQ IT environment to determine their applicability, feasibility, trade-offs and cost-benefit to HQ or the Agency's mission, customer or project support requirements;
- f. interview, participate and otherwise facilitate the collection of input from the Customer Advisory Committee and other stake holders to identify business needs and utilize them to develop the Tactical plan initiatives;
- g. conduct analysis of customer and HQ IT business needs and draft the associated Tactical Plan initiatives to meet or address customer needs;
- h. perform pre-release testing, (when approved by the CCB process) new monitoring, management, or operating systems, load balancers, network subsystems, video integration, nomenclature/metadata management, incomplete query, model-based planning and other tools supplied by contractors or available in open source;
- provide reviews and assessments of working group activities within the auspices of the OCIO, standards, industry or government working groups or of conferences and workshops;
- j. provide input to the development and update of the HQ Tactical Plan, Strategic Plan, or Integration Plans;
- k. deliver each assessment as a written document or in HTML on a designated site using appropriate metadata; and
- 1. provide recommendations and update the Tactical Plan quarterly as conditions change or modifications or updates are made to Federal, Agency, or HQ regulations, policies, or strategic direction occurs.

DRD	Description	Frequency
DRD #59	HQ Tactical Plan.	Annual and updates as required.

Metric	Description	Performance Level to Achieve Fee
Metric #12	Delivery of Annual Tactical Plan	50% submitted on time.
	and Updates on demand. Tactical	
	Plan shall be fully documented	
	and delivered annually after IT	
	Board of Directors' approval; or	
	Tactical Plan Status Report shall	

be provided on demand to reflect	
current status and projections.	

## 7.6 Agency and External Support Initiatives

The contractor shall support in planning for and accomplishing the IT integration necessary to implement Agency initiatives at HQ. In some instances this support includes ensuring that cross-Center and cross-Agency systems work effectively and can exchange information while adhering to NASA IT security requirements. The contractor shall:

- a. support in planning for and accomplishing the IT integration necessary to implement Agency initiatives at HQ;
- b. ensure that cross-Center and cross-Agency systems work effectively and can exchange information while adhering to NASA IT security requirements;
- c. provide assessments of security, performance, cost and process impacts that Agency initiatives may have on the NASA HQ infrastructure; and
- d. support or consult in IT Security assessments and or penetration testing and in any required countermeasures.

## 7.7 Support OCIO and other projects, working groups

NASA programs and projects traverse many NASA Centers, often with Program leadership residing at HQ. From an IT perspective, HQ is an important participant in Agency OCIO activities to improve uniform capabilities across all of NASA. Achievement of these goals requires analysis of alternatives for governance, management and technology, often at working group levels or in fielding cross-center projects. The contractor shall:

- a. participate in weekly/monthly Agency working group telecons and attend annual/semiannual Agency Face-to-face meetings (approximately 20 working groups totally 100 labor dollars per month and support for 8 face-to-face meetings);
- b. monitor and report working group activities;
- c. track actions, scheduling and facilitating the preparation of responses;
- d. consult with and debrief the HQ CIO and staff regarding impacts to budget, schedules, infrastructure and levels of effort;
- e. support the provisioning of services by a NASA Center, another Federal agency, or a private entity to NASA HQ, or by NASA HQ to another organization;
- e. coordinate seamlessly with external contractors in order to achieve successful implementation;
- f. support in the development of extended and distributed service models;
- g. draft memoranda of agreement / Memorandum of Understanding and Service Level Agreements and development of the online template DBMS entry; and

h. develop and document web-services or, if needed, point-to-point data exchange agreements.

# 7.7.1 HQ Support to Identity, Credential, Access Management (ICAM) and Supporting Systems Infrastructure

To conform to Federal regulations, NASA is taking steps to centrally control physical and IT resources in the areas of Identity, Credential, and Access Management (ICAM). This effort is being implemented through several related Agency-wide projects to track and validate identities, and to provide for centralized authentication and authorization for both physical and logical access to NASA resources. The Agency ICAM program is in direct support of Homeland Security Presidential Directive (HSPD) 12. It was renamed to better align integration of HSPD-12 with NASA business processes.

The Contractor shall act as a technical point of contact, and provide consulting, engineering, application development, communication and training, and sustaining operations support as needed for all ICAM-related projects, as well as new projects which may be started under the auspices of ICAM. Currently the following systems are within scope of ICAM:

- Common Badging and Access Control System (CBACS);
- Desktop Smart Card Integration (DSI);
- NASA Enterprise Physical Access Control System (EPACS);
- Identity Management and Account Exchange System (IdMAX);
- NASA Account Management System (NAMS);
- Two-Factor Token Infrastructure (TFTI);
- NASA Enterprise Directory (NED);
- NASA Consolidated Active Directory (NCAD).

## 7.8 Special Analyses, Studies, and Tasks

Subject to the issuance of service requests or tickets, the contractor shall conduct special studies and analyses addressing a variety of IT-related topics. Examples of support that the contractor may be called upon to provide include:

- updates to the Office of Diversity and Equal Opportunity Discrimination Complaints Management System to include new fields and reports as well as interactive features;
- action tracking systems that will allow HQ offices to capture, assign, and manage to completion actions generated both internally and received through official Agency channels;
- technical analyses of draft NASA and federal policy documents to determine their impact on NASA's IT capabilities and environment;

- analyses of life cycle documentation of systems developed/proposed by federal agencies for NASA's use to determine adequacy of requirements, design, security considerations, etc.;
- analyses and studies to support NASA HQ in complying with Section 508 of the Rehabilitation Act, the Privacy Act, the Federal Information Security Management Act, Homeland Security Presidential Directive-12 (HSPD-12), and other IT-related directives, statutes, and implementing regulations;
- tracking, analyses, and compilation of information on IT security bulletins issued by the U.S. Computer Emergency Response Team (US-CERT) and other organizations.

## 7.9 Advanced Trouble Shooting & Problem Resolution

The contractor shall provide engineering support for the operations, maintenance and enhancement of all NASA HQ IT infrastructure, applications and services and function as a centralized capability for escalation of technical issues. The contractor shall:

- a. provide support to resolve issues with the design, installation, configuration, testing, securing, upgrade, or diagnoses of problems with computer room, network, application, and security assets;
- b. provide support to resolve issues locally that may be part of agency or government-wide solutions;
- c. respond promptly to requests for trouble shooting and resolution; and
- d. recommend methodologies to proactively model systems to determine if a problem is likely to occur.

## 7.10 IT Planning

Planning activities include assuring that business drivers and requirements are in alignment with process change and IT service implementation. Structured planning is essential in several areas for HQ IT (e.g. agency integration, reaction to changes in organizational roles, changes to policy, threats, technology, and more fundamental changes in how services are provisioned or capabilities introduced. The contractor shall:

- a. participate in the development of HQ IT Tactical, Strategic and budget planning
- b. develop a resourced schedule and integrated plan that will guide HQ in completing NASA strategic IT initiatives;
- c. assure alignment with NASA's Information Resource Management (IRM) Strategic Plan, Open Government Initiatives and similar external drivers;
- d. assure alignment of requirements to implementation and solution to business driver by Enterprise Architecture techniques; and
- e. assure alignment to Agency's and HQ IT Capital Planning and Investment Processes.

## 7.11 IT Systems Engineering & Integration Test Lab

The contractor shall maintain and operate the HQ IT Systems Engineering and Integration Test Lab. The lab is used to replicate the HQ infrastructure sufficiently for testing and acceptance of new services, evaluations of potential services (prototypes and proofs-of-concepts), build-outs, vendor testing, and debugging. A staging area of the lab with specialized network policy is used for pre-deployment testing and checkout of applications, services, or new operating systems. Because changes to form, fit or function of the HQ infrastructure is not permitted without thorough testing and approval by the CCB, the maintenance and currency of the lab is critical to assure sufficient simulation of the HQ IT service infrastructure. The contractor shall be responsible for applying technologies in support of customer tasks encompassing deployment of web, multimedia, or virtual environments, maintaining optimum configuration controls, scheduling individuals, and support to ensure that the correct hardware and software is on hand. The lab is staffed to facilitate setups, tear downs, support for engineering, developers, vendors and HQ customers. To sustain and operate the IT test lab the contractor shall:

- a. maintain a log of tests that occurred with results;
- b. maintain a schedule of testing required (approximately 37 instances of testing per month);
- c. assure testing assets are ready and available prior to scheduled tests;
- d. maintain detailed knowledge of the HQ production environments (e.g. workstations, servers, networks, and security);
- e. maintain a detail knowledge of potential agency environments required for simulation;
- f. document and assess the impact or risk of any areas that cannot be simulated and their effect on the testing conducted;
- g. assure and document the as-built and build out of lab service infrastructure in support of simulating test environments;
- h. validate test plans;
- i. maintain, operate and coordinate the SE&I Test Lab's network, connectivity, IDS, monitoring and staging in accordance with HQ and agency security policy and operational procedures and assure that production data is controlled and limited to the pre-production/staging segment of the lab; and
- j. manage, coordinate, trouble-shoot and otherwise ensure operational stability between the SE&I Test Lab and the HQ network service provider.

Reserved	

# 8.0 IT Security (ITS) Program

Protecting the Nation's intellectual and computational assets, NASA's information, our customer's privacy, and our ability to perform work without interruption are all critical goals for our IT Security team. Our commitment and emphasis in IT Security is integrated in all of our processes including prevention, recovery, compliance, and analysis. This emphasis extends to our internal systems, the contractor's environment, and external systems accessed by our customers. ITS planning, implementation, and compliance is integral to all work performed under this contract, and therefore is not limited to the contractor's IT security staff. The contractor is responsible for ensuring that all of the services it provides complies with Federal law as well as Agency and HQ policies, processes, procedures, regulations, requirements, and standards. The contractor is also responsible for providing technical and managerial support for the HQ ITS Program, which is under the direction of the HQ IT Security Manager (ITSM). The Contractor shall document their approach to managing information security in an Information Security Management Plan to be delivered within one month from contract date. This plan shall be reviewed and updated at least annually.

DRD	Description	Frequency
DRD #60	Contractor Information Security	Within one month from
	Management Plan.	contract start date, updated
		annually thereafter.

## 8.1 Contractor Support for Headquarters ITS Program

The contractor shall provide comprehensive ITS support to the HQ ITSM. The activities associated with this support are those for implementing the policies, processes, procedures and guidelines of Federal Information Security Management Act (FISMA), the Computer Security Act of 1987, OMB Circular A-130, NPR 2810.1, NPR 1600.1, NIST Special Publications and Federal Information Processing Standards (FIPS), and other Agency/HQ policies, processes, procedures and guidelines governing the protection of information resources. The following are specific security support requirements that enhance selected governing security items.

#### **8.1.2 Standards and Procedures**

The contractor shall develop and maintain security standards and procedures for a broad range of IT operations and support in accordance with Federal and NASA policies, requirements, and guidelines. Categories include, but are not limited to:

- System access controls;
- Account management controls;
- Technical, network, and environmental security controls;
- Risk management;
- Information System Security Authorization (ISSA)
- Virus detection and eradication;
- Encryption

- Vulnerability monitoring and scanning;
- Penetration testing;
- Remote access:
- Secure communications;
- Security monitoring;
- Personnel screening procedures;
- Incident handling response and reporting controls;
- Contingency planning;
- Application development security controls; and
- Auditing metrics.

## 8.1.3 HQ Draft Policy, Requirements, Procedure, and Standards Development

The contractor, when tasked by the HQ ITSMs, shall develop draft NASA HQ policies, requirements, and procedures for review and approval through established HQ procedures. Documents shall be accurate, complete, professional, and tailored for audiences inclusive of non-ITS personnel.

Ι	ORD	Description	Frequency
Ι	ORD #61	Draft Policy, Requirement,	On demand.
		Procedure, or Standard.	

## 8.1.4 Support of ITS Program Meetings

The contractor shall provide the HQ ITSM schedules and status of completed, current, and future ITS program projects on a bi-weekly basis. The contractor ITS program lead, or designated alternate, shall attend Agency ITS teleconferences and off-site NASA ITS working group meetings as required.

#### **8.1.5** Security Configuration Baseline Documents

In accordance with CCB approval, the contractor shall develop and maintain security configuration baseline documents. These baseline documents shall provide additional security control configuration details beyond the documented security settings that are required under NPR 2810.1 or other HQ policies or guidelines; i. e., they shall specify security controls in effect for each of the following HQ supported items:

- Operating systems;
- Personal Digital Assistant (PDA) operating systems;

- Email clients:
- Web browsers; and
- Publicly accessible NASA HQ Library systems (desktop operating system only).

## 8.1.6 Freedom Of Information Act (FOIA), General Counsel, and Congressional Requests

Upon request, the contractor ITS team shall download and parse user e-mail data from NOMAD (NASA's Operational Messaging and Directory) email service, Tivoli backups of users, or copies of user e-mail files. If no NOMAD or Tivoli files are available, the ITS team will contact the user and arrange to copy their mailbox from their workstation. The contractor ITS team shall electronically search the records based on criteria provided through the HQ ITSM using Paraben E-Mail Examiner or similar software. The contractor shall develop an index for the data. The contractor shall load the index and all data meeting the criteria to appropriate removable media (CD-ROM, DVD, Thumb Drive, etc) and provide at least two (2) copies to the requesting ITSM for delivery to the customer.

DRD	Description	Frequency
DRD #62	eDiscovery Data Search Results.	On demand.

## 8.1.7 Human Resources and Inspector General Requests

The contractor ITS team shall conduct forensic imaging of user workstations in support of HR appropriate use investigations and IG criminal investigations. Data collection may need to occur after normal business hours when the subject and other area personnel are not present. HR requests will usually include analysis of data to identify and capture evidence of inappropriate use of HQ IT resources. IG investigations will usually only require acquisition of data and provide it to the IG Computer Crimes Section for analysis and investigation.

## 8.2 Security requirements for Contractor Provided Services

The contractor shall develop and document management, operational, and technical ITS procedures and controls for all services the contractor provides to NASA HQ. For each of these services, the contractor shall:

- a. integrate the ITS procedures and control measures into their full life cycle;
- b. test and periodically review procedures and controls for adequacy and compliance;
- c. allow NASA access to the contractor's and sub-contractor's facilities, installations, technical capabilities, operations, documentation, records, databases and personnel to the extent required to carry out a program of ITS inspection and audit. This access is needed to safeguard against threats and hazards to the integrity, availability and confidentiality of NASA data;

- d. not store, copy, or transfer NASA confidential, Sensitive but Unclassified (SBU), or production data across non-production or development systems and networks, including off-site support systems and networks;
- e. encrypt all electronic data transmissions of risks, threats, and/or vulnerabilities;
- f. for all contractor IT systems storing, containing, or otherwise processing Federal or NASA information be certified and approved to operate storing government information in accordance with Federal and NASA regulations. Hard copy sensitive information and portable electronic devices will be stored and protected in accordance with Federal and NASA regulations;
- g. maintain separation of sensitive IT duties to limit risks require two individuals to access password storage facilities. (e.g. different individuals perform information system support functions for system management, systems programming, configuration management, quality assurance and testing, network security and personnel who administer access control functions do not administer audit functions); and
- h. provide copies of contractor systems with eight business hours upon request for normal requests, the contractor shall provide to the COTR a full, bit-by-bit copy of any system they use to support NASA HQ. For urgent requests, the copy shall be provided within two business hours. This shall be completed using forensically sound software capable of providing image hashing. The copy shall be delivered on media appropriate for the amount of data. The authority to obtain such data is provided by NPD 2540.1G, Personal Use of Government Office Equipment including IT; and the NASA Headquarters Appropriate Use Policy.

#### 8.2.1 Compliance with Regulation and Policy

The contractor shall ensure adherence to all of the relevant Federal, Agency and HQ regulations, policies and procedures in the execution of their duties in support of NASA. The contractor shall;

- a. ensure that all US Government information provided, developed, or acquired under this contract is properly secured in accordance with Federal and NASA Requirements including but not limited to NPR 1600.1, NPR 2810.1A, NITR's, NASA ITS Handbooks, and other OCIO, NASA Office of Protective Services, and NASA HQ requirements;
- b. adhere to applicable policy directives (e.g. NASA Procedural Requirements (NPR) 2810.1A Security of Information Technology; NPR 1600.1 NASA Security Program Procedural Requirements; NASA Policy Directive (NPD) 2540.1G, Personal Use of Government Office Equipment Including IT; NASA Federal Acquisition Regulations (FAR) Supplement 1852.204-76; National Institute of Standards and Technology (NIST) Special Publications (SP) 800 Series and Federal Information Processing Standards (FIPS); NASA Information Technology Requirements (NITR); NASA ITS Handbooks; NASA Agency Chief Information Officer (CIO) requirements; HQ policies and procedures; and other governing security items); and
- c. adhere to applicable system & application life cycle requirements including the NIST Guide for Assessing the Security Controls in Federal Information Systems and Organizations, NIST SP 800-53A, Rev1, NIST Risk Management Guide for Information Technology Systems, NIST SP 800-30, and the HQ Security Review Process requirements during all phases of the System and Application Life Cycle.

## 8.2.2 Privileged and Limited Privileged Access

The contractor shall follow NPR 1600.1, NASA IT Requirement (NITR)-2810-14A, Managing Elevated User Privileges on NASA IT Devices, NASA ITS-HBK-0004, Managed Elevated Privileges Implementation Guidance Handbook, and the Headquarters Contractor Badging and Screening Process. All contractor requests for privileged or limited privileged access shall:

- a. request approval from the HQ Center Chief of Security through the NASA COTR in the event the contractor needs to provide privileged or limited privileged access to one of their employees who do not meet the requirements stated in NPR 1600.1;
- b. not fill positions with, or assign duties that require privileged or limited privileged access to foreign nationals regardless of status; and

DRD	Description	Frequency
DRD #63	Reserved	

## 8.3 Security Risk Assessments and Design Reviews

NASA relies on the ITS staff to assure that new systems, services and contexts are safe and do not introduce new threats or weaknesses into our environment. The contractor shall:

- ensure that system data categorization occurs prior to System/Software Requirements Review (SRR);
- b. complete a preliminary security risk assessment on a design prior to the Critical Design Review (CDR);
- c. provide design security risks, including possible mitigations, to the line manager or equivalent, data owner, and application owner prior or during official design review. If the risks are accepted the life cycle may continue, otherwise the life cycle shall cease or the design and/or mitigations shall be modified until the risks and possible mitigations are acceptable; and
- d. ensure that the system security plan and risk assessment are completed and/or updated, as applicable, prior to Operational Readiness Review (ORR) (all risks must be accepted by the application and system owner prior to ORR).

#### 8.3.1 Security Reviews and Assessments for New or Modified Hardware and Software

The contractor shall conduct a security assessment for all new hardware products introduced on an HQ system. The review shall include research to identify all known vulnerabilities for the product. The assessment shall identify all risks associated with product and recommend mitigation actions. The review shall also ensure that the product complies with the appropriate security configuration baseline. If none exists the ITS team shall also develop one for the product. Completed reviews will be forwarded to the HQ ITSM and system owner for approval. Approved reviews will be forwarded to the contractor ITS ISSA Team lead for incorporation into

the appropriate ITS plan(s). The contractor shall ensure that security is practiced throughout the system life cycle for all hardware, software, and supplications managed by the contractor. The contractor shall conduct security reviews and risk assessments for HQ custom applications, new or updated hardware, and new or updated commercial-off-the-shelf (COTS) software products. The contractor shall:

- a. provide the system owner a written risk assessment and security review for new or significantly modified HQ hardware or software, prior to deployment;
- b. use the products reviewed as a basis to update ITS Plans, as applicable;
- c. present to the system owner, prior to deployment, all risks and recommended mitigations (separate from the security plan) for approval. If the hardware or software connects to other systems, the approved risks and mitigations shall also be presented to the system owners of the interconnected systems for their information;
- d. on an ad hoc basis, the contractor shall provide written risk assessments and technical security reviews as requested by the HQ ITSM or NASA COTR. The assessments and reviews developed shall be used as a baseline to update ITS Plans, as applicable. All risks shall be presented to the line manager or equivalent, at least verbally, and subsequently reflected in the applicable security plan. If the system connects to other systems, the risk assessment shall also be presented to each interconnected line manager or equivalent;
- e. conduct a security review for all new COTS software products prior to their installation on an HQ operational system component in accordance with the NASA HQ Triage 3 SOP (approximately 13 per month). Completed reviews will be forwarded to the HQ ITSM and system owner for approval. Approved reviews will be forwarded to the contractor ITS ISSA Team lead for incorporation into the appropriate ITS plan(s);
- f. conduct a security review for all new HQ custom applications and application changes developed by the contractor applications development team or developed by others for deployment on HQ systems. Reviews shall follow the NASA HQ Security Review SOP. Completed reviews will be forwarded to the HQ ITSM and system owner for approval. Approved reviews will be forwarded to the Application owner, Application Development Team, HQ Software Applications Manager, and the contractor ITS ISSA team lead;
- g. review annually IDS signatures and firewall rule sets to determine their validity in relation to services provided and associated risks. The results of the review shall be documented, including a description of updates implemented; and
- h. ensure that all systems operated or maintained are compliant with Federal Desktop Computer Controls (FDCC), Center for Internet Security (CIS) Controls, or controls specified in the NASA security configuration baseline documents as applicable.

These baseline documents provide additional security control configuration details beyond the documented security settings that are required under NPR 2810.1 or other HQ policies and guidelines. They specify security controls in effect for each of the following supported items:

• Operating systems;

- Personal Digital Assistant (PDA) operating systems;
- Email clients;
- Web browsers; and
- Publicly accessible NASA HQ Library systems (desktop operating system only).

The contractor shall only deploy, into production, hardware and software, including security related patches or upgrades, which have been subject to a NASA-approved security review.

DRD	Description	Frequency
DRD #64	Security Reviews and Assessments.	On demand.

## 8.3.2 IT Vulnerability Management, Scanning and Monitoring

The contractor shall manage and monitor IT vulnerabilities in accordance with NPR 2810.1A and NITR-2810-24, *NASA IT Device Vulnerability Management*. The contractor shall:

- a. conduct and document vulnerability scanning and monitoring, required of each NASA Center, in accordance with NPR 2810.1A and NITR-2810-24 and other guidance provided by the Agency;
- b. use the NASA approved tools and profiles;
- c. provide ITS vulnerability services each business day by monitoring/reviewing the following:
  - Foundstone vulnerability scans,
  - Patchlink Critical and Critical-01 ratings,
  - NASA SOC distributed bulletins and alerts.
  - US CERT bulletins and alerts,
  - NIST distributed bulletins and alerts,
  - The HQ standard web browser contractor web sites,
  - The HQ standard email client web site,
  - The operating system web sites for all HQ system platforms,
  - Vulnerability scans,
  - Relevant emails from the HO ITSM.
- d. conduct and document monthly vulnerability scans of all NASA HQ owned IP addresses using the NASA approved vulnerability scanning tool and HQ scanning profiles. The results of the HQ tests shall be documented in a monthly report provided to the HQ ITSM. All vulnerabilities found during scanning shall be assessed and distributed per the Vulnerability Reporting and Monitoring section;

- e. collect and analyze threat alert information from the Security Operations Center, local Intrusion Detection systems (IDS), security scanners, vendor alters, hacker boards and others and provide recommendations for mitigation of IT Security threats (approximately 128 per month).
- f. submit a monthly report indicating identity of any unauthorized analog lines shall be submitted, even if no unauthorized analog lines are detected;
- g. conduct monthly wireless 802.11 scanning to verify that no unauthorized wireless systems are connected to the NASA HQ wireless network;
- h. submit a monthly report identifying all detected authorized and all detected unauthorized wireless system;
- i. conduct ongoing continuous monitoring to detect rogue Bluetooth devices and ensure configuration compliance of authorized devices;
- j. conduct security scans of incoming devices (laptops, thumb drives, or other removable media, etc) to determine whether they meet Agency and HQ requirements for connection to our private network or insertion into devices attached to our private network. These devices may belong to other contractors supporting NASA HQ or NASA issued devices from another Center. Scans will generally be infrequent but may need to be conducted on short notice;
- k. report to the HQ CERT, within four business hours after discovery, all unexplained system anomalies found while conducting normal duties that effect confidentiality of data or integrity of a system or data;
- 1. report to the Help Desk, all deviations of the HQ Appropriate Use Policy that are observed while conducting normal duties. If an observed deviation is thought to be a malicious activity that affects integrity, confidentiality or availability, it shall be considered a Computer Security Incident and immediately reported to the Help Desk; and
- m. attend all weekly Agency working group meetings and periodic workshops and training related to scanning and monitoring and keep the ITSMs informed of issues and activities.

When the contractor identifies a vulnerability affecting a HQ system component, it shall be added to the Daily Risk Assessment Report. This report shall be distributed encrypted daily to the ITSMs, system owners, and system administrators of HQ systems. The intent of this report is to give system owners and administrators "early warning" of new vulnerabilities and patches that there systems will be required to incorporate. See section 7.1.9 Vulnerability Mitigation for more information.

DRD	Description	Frequency
DRD #65	Daily Risk Vulnerability Report.	Daily.
DRD #66	Monthly Vulnerability Scan Report	One month after contract start
	(encrypted).	date, monthly thereafter.
DRD #67	Intrusion Detection Summary.	One month after contract start
		date, quarterly thereafter.

DRD #68	Monthly Wireless 802.11 Scanning	One month after contract start
	Report (encrypted).	date, monthly thereafter.

## 8.3.3 HQ Penetration Testing

The contractor shall conduct annual HQ penetration testing. These tests may include attack simulations, running automated scanning tools, or conducting physical inspections. The scope of the annual test shall be agreed upon annually in conjunction with the HQ ITSMs and HQ system owners. The contractor shall:

- a. prepare proposed Rules of Engagement, Penetration Test Plan, and a comprehensive schedule outlining activities and anticipated man hours for approval prior to beginning the test;
- b. provide daily status of test activities and findings to the HQ ITSM; and
- c. Prepare a comprehensive Test Report describing the penetration test, methods, results, vulnerabilities, and recommendations for corrective actions and improvements to the NASA HQ ITSM, System Owners, and ITCD Management.

DRD	Description	Frequency
DRD #69	Annual Penetration Test Plan and	On demand.
	Rules of Engagement and Schedule.	
DRD #70	Annual HQ Penetration Testing	On demand.
	Report.	

## 8.3.4 Information System Security Authorization (ISSA) Documentation

The Federal Information Systems Management Act (FISMA) requires all Federal organizations to assure that systems are appropriately classified and the measures to secure them are adequate. The contractor shall follow the accepted process for monitoring, analysis, recommending and provisioning risk-based acceptance criteria as directed by the Government.

## 8.3.4.1 NASA Internal Systems

In support of the ISSA process for NASA Internal Systems, the contractor shall:

- a. develop and maintain ISSA documentation for all internal HQ systems as required under NPR 2810.1A and Federal Regulations;
- b. assist NASA system and data owners in categorizing systems as well as defining system hardware/software, system boundaries, system interconnections, system responsible officials, and system users;
- c. analyze the system and provide security control recommendations to the system owner in accordance with NIST SP 800-53 guidance. The contractor shall document all security controls compliance for each system;

- d. conduct a controls assessment in accordance with NIST SP 800-53A guidance and develop and maintain a Plan of Actions and Milestones (POA&M) for all identified risks in coordination with the system owner and operating officials;
- e. conduct certification activities for all HQ Internal systems categorized at the low level in accordance with Federal and NASA requirements;
- f. coordinate all certification activities, as required, for all systems categorized at the Moderate and high levels;
- g. conduct and document an annual controls assessment as required by NASA and Federal regulations; and
- h. update ISSA documentation as changes occur affecting the security of a system
- i. load and maintain all ISSA documentation in the NASA Security Assessment & Authorization Repository (NSAAR).

## 8.3.4.2 NASA External Systems

In support of the ISSA process for NASA External Systems, the contractor shall:

- a. support, or fully develop and maintain ISSA documentation for NASA HQ external systems at outside agencies, contractors, universities, or other organizations. The extent of involvement will be decided on a case-by-case basis;
- b. support NASA external system owner, information owner, and accountable official (i.e. NASA authorizing official) in categorizing systems as well as defining system hardware/software, system boundaries, system interconnections, system responsible officials, and system users. The extent of involvement will be decided on a case-by-case basis;
- c. analyze the system and provide security control recommendations to the NASA External System owner in accordance with NASA, NIST SP 800-37 and NIST SP 800-53 guidance. The contractor shall document all security controls compliance for each system as required. The extent of involvement will be decided on a case-by-case basis;
- d. conduct a controls assessment in accordance with NASA and NIST SP 800-53A guidance and develop and maintain a Plan of Actions and Milestones (POA&M) for all identified risks in coordination with the NASA External System Owner and Contractor system operating officials. The extent of involvement will be decided on a case-by-case basis;
- e. conduct certification activities for HQ External Systems in accordance with Federal and NASA requirements;
- f. conduct, document and provision for continuous monitoring of information security controls as required by NASA and Federal regulations; and
- g. load and maintain all ISSA documentation in the NASA Security Assessment & Authorization Repository (NSAAR).

Contractor personnel involved with external systems may be required to sign non-disclosure agreements prior to commencing any ISSA activities.

## 8.3.4.3 Coordinate Risk and POA&M Updates

Prior to each meeting of the HQ Configuration Control Board (CCB), the contractor ITS personnel shall meet with each internal and external system owner (as required) to review system security reviews and mitigation recommendations for the purpose of gaining concurrence. The contractor shall on a monthly basis, coordinate, prepare, and provide an updated POA&M Status Report to the HQ ITSM that reflects the status of each POA&M item for each internal and external system. On a monthly basis, the contractor shall also coordinate, prepare, and provide an ISSA Status Report to the HQ ITSM that includes an update of all ISSA activities that occurred in the last month.

DRD	Description	Frequency
DRD #71	IT C&A Security Plan Assessment	On demand.
	using the NASA standard template.	
DRD #72	Risk Assessment.	On demand.
DRD #73	Security Controls Assessment Report	On demand.
	Assessment using the NASA standard	
	template.	
DRD #74	Plan of Actions and Milestones	On demand.
	Assessment using the NASA standard	
	template.	
DRD #75	System Certification Report.	On demand.
DRD #76	Monthly POA&M Status Report.	One month after contract start
		date, monthly thereafter.
DRD #77	Monthly ISSA Status Report.	Two months after contract start
		date, monthly thereafter.

## 8.4 Vulnerability Mitigation

The ITS program is responsible for mitigation, response and preventive measures. System vulnerabilities are required to be mitigated in a timely manner. Mitigations shall occur in accordance with the most current NPR 2810.1 and NITR 2810-24, NASA IT Vulnerability Management. Depending on the assessed severity (critical escalated, critical, high, medium, or low) of a vulnerability and NASA System Owner concurrence with the severity, the contractor shall evaluate, test, and implement mitigation. The contractor shall notify the NASA System Owner when vulnerabilities are mitigated. A permanent mitigation is required for an expedited, critical or a high vulnerability. In some cases a temporary mitigation may be necessary. The contractor shall obtain approval by the NASA System Owner for a temporary mitigation. For a medium or low vulnerability, the contractor may mitigate the vulnerability or present a thoroughly researched recommendation that justifies accepting the risk. The contractor shall comply with the standard and expedited requirements in the Vulnerability Mitigation Requirements Table below. The contractor shall obtain approval by the NASA System Owner

for any deviation from the requirements. In some rare circumstances, the NASA Deputy CIO for ITS, the NASA HQ CIO, or their designees may determine that a particular patch must be applied more urgently. In such cases, all information systems shall be patched in the timeframe specified.

Metric	Description	Performance Level to Achieve Fee
Metric #13	Vulnerability Mitigation. All system vulnerabilities shall be mitigated within the specified times, based on the assessed severity.	95% - 97% meet the criteria.

#### **8.4.1 Incident Response**

The contractor shall:

- a. staff and operate the NASA HQ Computer Emergency Response Team (CERT) to respond to computer incidents in accordance with the NASA HQ Incident Response SOP (approximately 46 per month);
- b. during Prime Time hours of 6:00 am until 6:00 pm Monday through Friday, except for holidays, support the identification and mitigation of incidents. During non-Prime Time hours respond to a phone call, a NASA Security Operations Center (SOC) or NASA Help Desk notification, or other Government notification within 15 minutes and arrive on-site, if necessary, within two hours of the initial notification;
- c. conduct a daily review of the SOC Daily Reports, SOC Incident Tickets, HQ
   Antivirus Daily Reports, Content Filter logs and conduct further investigations as appropriate;
- d. follow the HQ Incident Response Process and document all incidents in the NASA SOC Incident Management System (IMS);
- e. ensure that all SOC incident tickets are processed and closed in a timely manner; and
- f. annually conduct incident response training and conduct an incident response exercise in accordance with the NASA HQ Incident Response SOP.

DRD	Description	Frequency
DRD #78	Incident Response Training and Test	Annually by fiscal year's end.
	Report.	

Metric	Description	Performance Level to Achieve Fee
Metric #14	Incident Response. During non-Prime	Meet the criteria 90% - 95% of the
	Time hours respond to a phone call, a	time.
	NASA Security Operations Center	

(SOC) or NASA Help Desk notification,	
or other Government notification within	
30 minutes and arrive on-site, if	
necessary, within four hours of the	
initial page.	

## 8.4.2 Incident Reporting

The contractor shall immediately report to the HQ Computer Emergency Response Team (CERT) any known malicious activity or other suspected incidents that negatively affects the confidentiality, integrity or availability of HQ IT resources. The contractor shall immediately report all losses of IT devices, electronic media, or NASA information in accordance with Agency and HQ requirements.

## 8.4.3 Computer Sanitization

The contractor shall develop and implement procedures that ensure IT resources leaving control of an assigned user (e.g., the resource is being reassigned, repaired, replaced or excessed) have all NASA data and sensitive application software removed by a NASA approved technique. Applications acquired via a "site license" or "server license" shall be removed prior to resources leaving the control of NASA. Damaged IT storage media for which data recovery is not possible shall be degaussed by a NASA approved technique or destroyed. All sanitization shall meet the requirements of NPR 2810.1A; NITR 2810-22, *Media Protection Policies and Procedures;* and NASA ITS-HBK-035, *Digital Media Sanitization*.

#### 8.4.4 Computer Anti-Virus Services

The contractor shall provide and properly configure anti-virus software on all workstations and servers. The anti-virus signatures on all systems shall be maintained and updated to the latest signatures as made available by the anti-virus software vendor. The contractor anti-virus server shall, at a minimum make available for distribution to client workstations and servers, updates to anti-virus signature files within two hours of vendor release. The contractor shall ensure that updates to anti-virus signature files are distributed to and activated on all client workstations and servers within eight hours of vendor release.

## 8.4.6 Account Establishment and Termination Process

The contractor shall follow the HQ process for requesting, establishing, issuing and closing user accounts and authentication devices, including removal of user accounts after contractor employees depart.

## 8.4.7 Security Training

The contractor shall:

- a. ensure all newly hired employees with access to NASA information resources complete NASA ITS Awareness Training within one month of start date;
- b. ensure all of its employees, including sub-contractors with access to NASA information resources, complete NASA Annual ITS Awareness Training;
- c. support, as required, the development and presentation of NASA Annual ITS Awareness Training for NASA HQ IT users;
- d. employ an effective method for ensuring that all of its new employees, including subcontractors, understand ITS policies and guidance provided by the ITSM and/or CIO as part of the new employee briefing process; and
- e. ensure that all employees with system elevated privileges (1) possess requisite ITS skills in the operating systems they support; and (2) complete NASA elevated privileges training as required by NITR-2810-14A, *Managing Elevated Privileges on NASA IT Devices* and NASA ITS-HBK-0004, *Managed Elevated Privileges Implementation Guidance Handbook*.

#### 8.5 Classified Work Requirements

Specific work performed by the contractor will require some individuals access to classified information, work in a secure area, or both, up to the level of Top Secret/ Secure Compartmented Information (TS/SCI). This work may include requests to assist NASA's Office of Protective Services (OPS) with classified system (e.g. providing technical support) or to collaborate with the intelligence community within NASA and other federal agencies specific to the details of an IT security incidents of a classified nature (e.g. forensics support). See Federal Acquisition Regulation clause 52.204-2 in this contract and DD Form 254, Contract Security Classification Specification. The Contractor shall ensure that key Contractor ITS personnel have the appropriate security clearances, up to the level of TS/SCI, to receive classified ITS threat information, to implement security controls based on such information, or to support other activities that require access to classified information.

#### 8.5.1 ITCD Communications Security Support and Services

The Contractor shall provide COMSEC support and services to NASA HQ, acting as the HQ COMSEC Account Manager (CAM). Contractor COMSEC personnel shall possess and maintain a current TS/SCI level clearance preferably adjudicated within the last 36 months. In general, the contractor shall:

- a. obtain, purchase, receive, safeguard, issue, provision accounting for, ship, and destroy (as required) all COMSEC material and equipment within the NASA HQ COMSEC account in accordance with Federal and NASA regulations and guidelines;
- b. install COMSEC equipment, software, and keying material; troubleshoot COMSEC related user, equipment, and software problems; and conduct COMSEC user training and security briefings;

- c. conduct HQ-wide COMSEC inspections and inventories consistent with National and NASA COMSEC policy and provide reports to the NASA HQ Information Technology Security Manager;
- d. maintain currency and proficiency on National and NASA COMSEC policies and secure communications equipment;
- e. coordinate with the NASA COMSEC Office of Record (COR) on COMSEC matters in support of the COMSEC function;
- f. ensure availability for services within an agreed to schedule;
- g. ensure a secure work environment inclusive of restricting unauthorized access to the COMSEC manager's material or work area; and
- h. attend required training, working group meetings and similar authorized COMSEC events.

DRD	Description	Frequency
DRD #79	Quarterly Metric Report summarizing	Due 90 days from contract
	the transaction history, incidents, and	start, and every 3 months
	inventories/inspections for that report	thereafter

## **8.6 IT Service Continuity Management (ITSCM)**

The contractor shall support the overall NASA ITSCM process by ensuring that required IT technical and service facilities (including computer systems, networks, applications, data repositories, telecommunications, environment, and technical support) operated by the contractor and supporting NASA HQ (and other NASA facilities as applicable) can be resumed within required business timeframes. The Contractor shall be responsible for developing, implementing, and providing ITSCM procedures that align with Government and NASA ITSCM Processes to mitigate the impact of a disaster or major failure. Plans, procedures and processes include Business Continuity Plans, Disaster Recovery Plans, Information System Contingency Plans, etc. developed in coordination with NASA HQ and other contractors providing IT and other support to NASA HQ. The contractor shall:

- a. annually update, maintain, and test the HQ ITS Contingency Plan in accordance with NPR 2810.1 and NIST guidelines;
- b. at least annually train contingency teams in plan procedures and operations;
- c. at least annually develop, plan, and implement a contingency scenario test designed to validate the effectiveness of the plan to quickly restore HQ IT operations in the event of a disaster; and
- d. deliver a lessons learned report from each test and use the results to update the HQ ITS Contingency Plan.

DRD	Description	Frequency
DRD #80	HQ ITS Contingency & Continuity	annually by fiscal year's end
	Plan, Training and Test Report annual	
	update	

## 8.6.1 Disaster Recovery and Continuity Planning

The contractor shall support NASA in developing and testing plans to ensure continuous availability of IT systems and services at systems located at HQ and also for systems located at other Centers. The contractor shall:

- a. support NASA in analyzing and providing comments and suggestions to NASA on the disaster recovery and continuity planning for systems operated by other Federal agencies and by commercial suppliers who provide services to NASA;
- b. coordinate with information systems and disaster recovery experts across NASA and NASA's partners to verify integration of procedures and planning techniques for disaster recovery and continuity planning; and
- c. support NASA in Agency-wide emergency preparedness and continuity of operations planning (COOP).

## 8.6.2 Emergency Operation Center (EOC) and Continuity of Operation (COOP) support.

The NASA HQ EOC, located at 300 E St SW, consists of workstations, printers, monitors, PA system and network connections. In an emergency, EOC personnel meet in the room to implement necessary actions. Emergency exercises are conducted in the EOC on a regular basis. Recovery exercises at the remote failover site will be conducted twice a year. The contractor shall provide IT support for the EOC room when needed and during real emergencies. The contractor shall recommend improvements after each recovery exercise and shall implement improvements only after receiving approval by the COTR or designee. In addition to an EOC room, NASA HQ maintains COOP sites at Goddard Space Flight Center, Langley Research Center, and the Glenn Space Center. If NASA HQ becomes inaccessible or as directed, essential Agency leadership personnel will utilize one or more of these sites. The contractor shall support the activation of this capability.

## 9.0 Other Support Tasks (Non-Core Support)

This PWS represents a comprehensive set of core requirements. Other related services may be required during the life of the contract to provide direct support to Mission Directorates and Mission Support organizations. These other services will be ordered through the indefinite delivery, indefinite quantity provisions of the contract. Several examples of task orders include the following:

- Support the investigation and deployment of state-of-the-art and leading edge technologies
  for the Exploration Systems Management Directorate. Support to this task has a Research
  and Development component that complements Headquarters core IT services by
  demonstrating, exploring, and exploiting new technologies within both development and
  production environments.
- Support the Exploration Systems Management Directorate in the planning, design, analysis, development, implementation, and training support to the Integrated Collaborative Environment (ICE) project.
- Support the Science Mission Directorate (SMD) through the enhancement of SMD business
  systems and processes placing emphasis on integration, collaborative solutions, knowledge
  management, and communications technologies. In addition, develop, maintain, and
  document the SMD IT architecture as it relates to the Agency IT architecture and to any
  locations hosting SMD servers/applications.
- Support the daily operations and strategic planning for the HQ Space Operations Center (SOC). Activities include demonstrations, training, on-site support, operation of desktop, web-based and other advanced applications and products.
- Support the Office of the Chief Financial Officer by maintaining the Central Resource Control System, NASA Audit Tracking System, CFO Web Site Portal, and Financial Management Internal Control System.
- Support the Office of Public Affairs (OPA) to include application development, IT strategic guidance, technical support and maintenance, test-bed provisioning, recommendations of software and hardware, multimedia support, and research and development support.
- Support the Chief Information Officer with expert level consultation, recommendations and support on Security Program Management, Governance and Oversight, Security Operations and Security Architecture and Engineering. In addition, provide program management support for each of the Program Managers in the OCIO, including Architecture and Integration, IT Security, Enterprise Portfolio Management, and Policy and Investment; eGovernment Initiatives support; Application Portfolio Management support throughout the Agency; and Agency Business Systems Support.

## **Appendix A. Data Requirements Documents DRDs**

DRD #1	Documentation environment of metrics, analytics and	Updated and available weekly
	deliverables implementation plan and migration	during the first two months of
	schedule	contract start; enhancements
		and additional content added
		monthly thereafter until
		established baseline schedule is
		met
DRD #2	Transition plan and integrated schedule	Available at contract start with
		significant weekly updates for
		the transition period up to
		Operational Readiness Review
		and acceptance.
DRD #3	Contract Status Meeting	Monthly – no later than last
		week of the month
DRD #4	Daily TagUp Review	Daily
DRD #5	Integrated Master Schedule with ability to drill down	Updated every 2 weeks from
	to supporting data, including resource loading	month 2 of contract start date.
DRD #6	Project Schedule Adherence Report	Monthly – no later than second
		week of the month
DRD #7	Logistics Management Plan	Three months after contract
		start date.
DRD #8	HQ Enterprise Architecture Plan Updates	8 months after contract start
		date
DRD #9	Operational Level Agreements	Initial set due 4 months after
		contract start; subsequent due
		in accordance with Government
		schedules
DRD	Report on response times, ticket aging, and customer	1 month after start date and
#10	satisfaction, delivered	monthly after that.
DRD	Root Cause Analysis and Corrective Action Plan	as requested by ITCD
#11		
DRD	Configuration Management Plan	Update as required by ITCD
#12		
DRD	CCB Meeting Minutes	Weekly – 2 days after meeting
#13		
DRD	Spare Parts Inventory Report	3 months after contract start,
#14		quarterly thereafter
DRD	Summary of updates to ROSA showing what was	One time deliveable due with
#15A	created	Data Migration Plan for RAM
DRD	Summary of updates to RAM showing what was	Available quarterly after RAM
#15B	created and modified over previous 3 months	Implementation
DRD	Diagrams of Application logic, connectivity,	90 days after contract start and

#16	interdependence and data flow	update continuously
DRD	Diagrams of Server dependencies (sinks/sources),	Draft three months after
#17	physical placement and relationship	contract start; final six months
		and update continuously
DRD	Health & Safety Plan	Submit with proposal
#18	•	
DRD	Occupational Injuries and Illnesses Report	One month from contract start
#19		and monthly thereafter
DRD	Customer Service Metrics Proposal	Deliver final three months
#20		after contract start
DRD	Customer Satisfaction Survey Report	Deliver at contract start with
#21		the customer satisfaction
		survey, monthly summary
		analytics and trending
DRD	Training Program & Outreach Plan, detailing	Initial Draft 45 days from
#22A	materials, methods and approach and to include	contract start; Final two months
	communications, and facilitating relationship building	from contract start. Subsequent
	activity. Two plans submitted each year with each	draft plan due each August 1
	plan covering the period of performance April 1 thru	with final due Oct 1; and Feb 1
	September 30 and October 1 thru March 31.	with final due April 1.
DRD	ITCD Communications Plan	Draft 45 days from contract
#22B		start; final six months from
		contract start. Updates as
		required by ITCD.
DRD	Customer Advisory and Service Review, meeting	As required within 2 business
#23	notes, action items, results, and schedule.	days of meetings.
DRD	On-Boarding and Off-Boarding Statistics Report	Deliver weekly beginning 3
#23A		months from contract start.
DRD	Customer Requirements Adherence Metrics Proposal	Deliver within 75 days of
#24		contract start; final due 3
DDD	Danish was to Albana Danish	months after contract start
DRD	Requirements Adherence Report	Deliver 3 months after contract
#25	Cummany and Trand Tielest Deporting including	start date, monthly thereafter
DRD #26	Summary and Trend Ticket Reporting including	One month from contract start
#20	number of tickets opened, completed and pending	date and monthly thereafter
	(e.g. under a week, under two or over three) number escalated, rating, closed, times to first respond,	
	customer satisfaction. Summary and reporting of	
	phone support, email support, and drop-in support.	
DRD	Service Request Processing Plan describing overall	Within two weeks of contract
#27	management and execution of the SR system and	start date
"2"	customer satisfaction report	Start Gute
DRD		
#28		
DRD	Catalog Orders Report/Checkbook includes number	Two weeks from contract start
עאע	Catalog Orders Report Checkbook metades number	1 wo weeks from contract staft

#29	of orders by category, requisition number and funding source (if known), number complete, funds used versus available, funds in process, summary total of monthly catalog invoice and break out of ITCD funded monthly total.	date, monthly thereafter
DRD #30	Application Service Framework	Two months from contract start date, modifications reflecting approved changes as required
DRD #31	Application Service Roadmap and Implementation Plan	Six months after contract start and every six months thereafter, modifications reflecting approved changes as required. (Due last business day of each Incentive Fee Period)

DRD #32	Legacy application disposition plan	Six months from contract start date, modifications reflecting status and approved changes every 60 days. (Initial plan due last business day of Incentive Fee Period (3/29/2013); 60 day status due the first business day of July, September, November, January and March)
DRD #33	Legacy application portfolio report	Six months from contract start date, modifications reflecting status and approved changes every 60 days. (Initial plan due last business day of Incentive Fee Period (3/29/2013); 60 day status due the first business day of July, September, November, January and March)
DRD #34A	Framework for Development Program	Due at contract start, modifications reflecting approved changes as required
DRD #34B	Framework for Web Site Development Program	Due nine months after contract start
DRD #35	Interface Control Documents	One month from contract start date and as needed thereafter
DRD #36	Software Management Guide	Interim due three months after contract start date; updated SDLC due six months after contract start; modifications reflecting approved modifications quarterly thereafter
DRD #37	Standard requirements template that documents the service or design need from the perspective of effected discipline areas (e.g. applications development, IT security, customer training, operations) and by level of need (e.g. mandatory, optional, preferred).	Within two months from contract start date
DRD #38	System Design Specification	Two months from contract start date, modifications reflecting approved modifications as needed thereafter
DRD #39	Application Status Review materials	Three months from contract start, monthly thereafter
DRD #40	Portfolio Management Views of Application Services and Inventories	Six months from contract start date, continuously thereafter

DRD	As built detailed functional and physical description of	Two months from contract start
#41	development environment, its interfaces and processes	date, provided within 2 days of
		changes to structural or ITS
		environment including patches
DRD	Application Delivery Implementation Plan (Formerly	Initial draft five months from
#42A	Version Description Document but renamed to Release	contract start; final six months
	Implementation Plan Template)	from contract start date
DRD	Website Delivery Implementation Plan (Formerly	Initial draft eight months from
#42B	Version Description Document but a secondary plan	contract start; final nine months
	created specifically for Website Implementations	from contract start date
DRD	Release Notes Document Template	Initial draft five months from
#42C		contract start; final six months
		from contract start date
DRD	Release Implementation Plan (for each Application and	Scheduled in accordance with
43A	Website)	CCB
DRD	Release Notes Document (for each Application and	Scheduled in accordance with
#43B	website)	CCB
DRD	Biennial Review of Forms Final Report	First report due 10/1/2014 and
#44A		biennially per NPD 1420.1
DRD	Quarterly Data to Produce Forms Bulletin (one for	Quarterly (Dec, March, June &
#44B	Agency and 1 for HQ)	Sept)
DRD	Data Exchange Agreement Audit and Gap Analysis	Six months from contract start
#45		date

DRD	Service Level Agreement Audit	One month from contract start
#46		date and monthly thereafter
DRD	Availability of hosted and housed services	One month from contract start
#47		date and monthly thereafter
DRD	Performance of hosted and housed services	One month from contract start
#48		date and monthly thereafter
DRD	Diagram of server location	Three months from contract
#49		start date and every three
		months thereafter
DRD	Diagram of servers logical connection to network	Three months from contract
#50		start date and on-demand
		thereafter
DRD	Capacity and Performance Report	Two months from contract start
#51		date, on-demand thereafter
DRD	Quarterly/Monthly Patch Release Report	One month after contract start
#52		date, monthly thereafter
DRD	Equipment Upgrade Evaluation Report	90 days of contract start date
#53		and semiannually thereafter
DRD	Moved to DRD#67	
#54		

DRD	Data Center (including SEF) SOP Audit &	Six months from contract start
#55	Recommendations Report	date and monthly thereafter
DRD	ReservedReserved	Reserved
#56		
DRD	Data Center Modernization Plan	Initial Plan three months from
#57		contract start date; updated plan
		at six months; and every six
		months thereafter
DRD	Data Exchange Agreement Audit and Gap Analysis	Six months from contract start
#58		date.
DRD	Reserved	Reserved
#59		
	Reserved	
DRD	Contractor Information Security Management Plan	Within one month from contract
#60		start date, updated annually
		thereafter
DRD	Draft Policy, Requirement, Procedure, or Standard	On demand
#61		
DRD	eDiscovery Data Search Results	On demand
#62		
DRD	Reserved	
#63		

DRD #64	Security Reviews and Assessments	On demand
	Daily Risk Vulnerability Report	Daily
DRD #65		
DRD #66	Monthly Vulnerability Scan Report (encrypted)	One month after contract start date, monthly thereafter
DRD #67	Intrusion Detection Summary	One month after contract start date, quarterly thereafter
DRD #68	Monthly Wireless 802.11 Scanning Report (encrypted)	Two months after contract start date, monthly thereafter
DRD #69	Annual Penetration Test Plan and Rules of Engagement and Schedule	On demand
DRD #70	Annual HQ Penetration Testing Report	On demand
DRD #71	IT C&A Security Plan Assessment using the NASA standard template	On demand
DRD #72	Risk Assessment	On demand
DRD #73	Security Controls Assessment Report Assessment using the NASA standard template	On demand
DRD #74	Plan of Actions and Milestones Assessment using the NASA standard template	On demand
DRD #75	System Certification Report	On demand
DRD #76	Monthly POA&M Status Report	One month after contract start date, monthly thereafter
DRD #77	Monthly ISSA Status Report	Two months after contract start date, monthly thereafter
DRD #78	Incident Response Training and Test Report	annually by fiscal year's end
DRD #79	Quarterly Metric Report summarizing the transaction history, incidents, and inventories/inspections for that report	Due 90 days from contract start date, and every 3 months thereafter
DRD #80	HQ ITS Contingency & Continuity Plan, Training and Test Report annual update	annually by fiscal year's end

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE	PAGE	PAGE OF PAGES	
				1	2	
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE		QUISITION/PURCHASE REQ. NO. Schedule	5. PROJECT	ΓNO. (ff applicable)	
000012	See Block 16C	1				
6. ISSUED BY CODE	11/2		DMINISTERED BY (If other than Item 6)	CODE HC	<u>!</u>	
NASA/Goddard Space Flight Ce Headquarters Procurement Off Greenbelt MD 20771		Неа	SA/Goddard Space Flight adquarters Procurement C senbelt MD 20771			
B. NAME AND ADDRESS OF CONTRACTOR (No., street	t, county, State and ZIP Code)	(x) 9/	A. AMENDMENT OF SOLICITATION NO.			
DIGITAL MANAGEMENT INC.						
5550 ROCK SPRING DR 7TH FLOO BETHESDA MD 20817-1124	R	91	B. DATED (SEE ITEM 11)			
			OA MODIFICATION OF CONTRACT/ORDER INH12CF39C	NO.	-	
		1 10	OB. DATED (SEE ITEM 13)			
CODE 3BDL8	FACILITY CODE		06/22/2012			
	11. THIS ITEM ONLY APPLIES	TO AMEND	MENTS OF SOLICITATIONS			
CHECK ONE  A. THIS CHANGE ORDER IS ISSUED ORDER NO. IN ITEM 10A.	PURSUANT TO: (Specify authority)	THE CHAN	IGES SET FORTH IN ITEM 14 ARE MADE IN	THE CONTRA	CT	
B THE ABOVE NUMBERED CONTRA epproprietion date, etc.) SET FORTI C. THIS SUPPLEMENTAL AGREEMEN			DMINISTRATIVE CHANGES (such as changes Y OF FAR 43.103(b).  RITY OF:	s in paying offic	<b>e</b> ,	
D. OTHER (Specify type of modification					· ·	
X   FAR 52.243-3 CHANGES	S - COST REIMBURSE	MENT (	AUG 1987) - ALTERNATE I	I (APR 1	.984)	
	is required to sign this docume			<u> </u>		
14. DESCRIPTION OF AMENDMENT/MODIFICATION The purpose of this modifica contract. See Page 2.			-		n of the	
Continued						
Continued Except as provided herein, all terms and conditions of the	ne document referenced in How CA	or 104 on h	eretofore channed remains unchanned and in	full force and a	ffort	
except as provided herein, all terms and conditions of the 15A. NAME AND TITLE OF SIGNER (Type or print)	ю честинения под принятия		NAME AND TITLE OF CONTRACTING OFF			
15B. CONTRACTOR/OFFEROR	15C. DATE SIGN		rence L. Haynes		180 DATE DIONES	
SS. CONTRACTOROFFEROR	150. DATE SIGN	.   16B	UNITED STATES OF AMERICA		16C. DATE SIGNED	
(Signature of person authorized to sign)		_4	(Signature of Contracting Officers)	en	6/11/13	

1. Clause B.13 Contract Funding (1852.232-81) (JUN 1990) is revised to provide incremental funding to the Core portion of the contract as follows:



This allotment of funds covers performance through June 30, 2013

PR#	Accounting and Appropriation Data	Amount
4200476040	10EA000/6100.2572/10/FC000000/309574.01.03.10/000 2570/10/AERX22012D/071M/8012/130126/1/2	\$179,934.00
4200476052	10EA000/6100.2572/10/FC000000/309574.01.03.10/000 2570/10/AERX22013D/071M/8013/140126/1/2	\$367,704.00
Total		\$547,638.00

2. Total value of the Core portion of the contract remains as follows:



Total Funding: \$17,077,646.00

- 3. Joan Verbeck is nolonger assigned to this contract. Liteshia Dennis is the Contracting Officer Representative and Deborah Martin-Edwards is the Alternate.
- 4. All other terms and conditions remain unchanged.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE		PAGE OF PAGES	
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DAT		REQUISITION/PURCHASE REQ. NO.	1	Q. (if applicable)	
			ee Schedule	5. PROJECT N	О. (п аррисаон)	
000013 6. ISSUED BY COD	See Block E HO	100	ADMINISTERED BY (if other than item 6)	CODE HO		
NASA/Goddard Space Flight ( Headquarters Procurement Of Greenbelt MD 20771	Center	N H	ASA/Goddard Space Flight leadquarters Procurement Greenbelt MD 20771	t Center		
8. NAME AND ADDRESS OF CONTRACTOR (No., str	eet, county, State and ZIP	Cade) (X	9A. AMENDMENT OF SOLICITATION NO.			
DIGITAL MANAGEMENT INC.						
6550 ROCK SPRING DR 7TH FLO BETHESDA MD 20817-1124	OR		9B. DATED (SEE ITEM 11)			
		×	10A MODIFICATION OF CONTRACT/ORDE NNH12CF39C	ER NO.	-	
			10B. DATED (SEE ITEM 13)			
CODE 3BDL8	FACILITY CODE		06/22/2012			
	11. THIS ITEM O	NLY APPLIES TO AM	ENDMENTS OF SOLICITATIONS			
virtue of this amendment you desire to change and to the solicitation and this amendment, and is received. ACCOUNTING AND APPROPRIATION DATA (If See Schedule  13. THIS ITEM ONLY APPLIES TO	ved prior to the opening required)	hour and date specifie		\$1,038,453	.00	
CHECK ONE A. THIS CHANGE ORDER IS ISSUE ORDER NO. IN ITEM 10A.	D PURSUANT TO: (Spe	ecify authority) THE C	HANGES SET FORTH IN ITEM 14 ARE MADE	IN THE CONTRACT		
B. THE ABOVE NUMBERED CONTR appropriation date, etc.) SET FOR	RACT/ORDER IS MODI RTH IN ITEM 14, PURS	FIED TO REFLECT TH UANT TO THE AUTHO	E ADMINISTRATIVE CHANGES (such as chan RITY OF FAR 43.103(b).	nges in paying office,	<	
C. THIS SUPPLEMENTAL AGREEM	ENT IS ENTERED INTO	PURSUANT TO AUT	HORITY OF:		-	
D. CTHER (Specify type of modificati	on and authority)					
X B.13 Contract Fund	ing (1852.23	2-81) (JUN	1990)			
E. IMPORTANT: Contractor 🗵 is not,	is required to sig	gn this document and re	eturn Copies to the is:	suing office.		
14 DESCRIPTION OF AMENDMENT/MODIFICATION The purpose of this modification contract.  See Page 2.		=		-	of the	
Except as provided herein, all terms and conditions o	f the document referenc		as heretofore changed, remains unchanged and 16A. NAME AND TITLE OF CONTRACTING O			
			Terence L. Haynes			
15B. CONTRACTOR/OFFEROR	150	C. DATE SIGNED	16B. UNITED STATES OF AMERICA	1	6C. DATE SIGNED	
(Signature of person authorized to sign)			(Signature of Contracting Officer)		4/14/13	

1. Clause B.13 Contract Funding (1852.232-81) (JUN 1990) is revised to provide incremental funding to the Core portion of the contract as follows:

_	FROM	BY	TO
Cost: Incentive Fee: Total Funding:		b(4)	

This allotment of funds covers performance through July 31, 2013

PR#	Accounting and Appropriation Data	Amount
4200478655	10IA000/6100.2572/10/FC000000/630358.03.10/000/ 2570/10/CASX12012D/618I/8012/130122/1/2	\$16,514.50
4200478656	10IA000/6100.2572/10/FC000000/630358.03.10/000/ 2570/10/CASX22013D/618I/8013/140122/1/2	\$1,385.50
4200478819	10DM000/6100.3121/10/FC000000/383807.02.05/000/ 3100/10/SCEX22013D/728A/8013/140120/1/2	\$1,020,553.00
Total		\$1,038,453.00

2. Total value of the Core portion of the contract remains as follows:



Total Funding: \$17,077,646.00

- 3. Joan Verbeck is nolonger assigned to this contract. Liteshia Dennis is the Contracting Officer Representative and Deborah Martin-Edwards is the Alternate.
- 4. All other terms and conditions remain unchanged.

AMENDME	NT OF SOLICITATION/MODIL	FICATION OF CONTRACT		1. CONTRACT ID CODE	PAGE	OF PAGES
		3. EFFECTIVE DATE	145	EQUIRITION/DITECTIAGE BEG NO	1 E PROJECTI	2
	NT/MODIFICATION NO.			EQUISITION/PURCHASE REQ. NO.	a. PROJECT	NO. (if applicable)
000014 6. ISSUED BY	, co	See Block 16C DE HQ		ADMINISTERED BY (If other than Item 6)	CODE HO	
		,		· · · · · ·	110	
	ddard Space Flight rters Procurement C			SA/Goddard Space Flight adquarters Procurement		
_	it MD 20771	11106		eenbelt MD 20771	OIIICe	
D. MANAT. AND	ADDEECC OF CONTRACTOR OF	treat county Older and 710 Oddes		9A. AMENDMENT OF SOLICITATION NO.		
O. NAME AND	ADDRESS OF CONTRACTOR (No., s	arees, county, state and 21P Code)	(x)	SA. AMENDMENT OF SOLICITATION NO.		
DIGITAL	MANAGEMENT INC.					
	CK SPRING DR 7TH FLO	OOR	1 1	9B. DATED (\$EE ITEM 11)		
BETHESDA	A MD 20817-1124					
			x	10A. MODIFICATION OF CONTRACT/ORDE NNH12CF39C	R NO.	
				WIIIZGESTO		
				10B. DATED (SEE ITEM 13)		
CODE 3F	BDL8	FACILITY CODE	-+	06/22/2012		
	JDE0	11 THIS ITEM ONLY APPL	IES TO AMEN	IDMENTS OF SOLICITATIONS		
The above	numbered solicitation is amended as s				extended,  is no	t extended
12. ACCOUN See Sch	<del></del>			ncrease:	\$2,257,96 S DESCRIBED IN IT	
CHECK ONE	A. THIS CHANGE ORDER IS ISSUI ORDER NO. IN ITEM 10A.	ED PURSUANT TO: (Specify author	rity) THE CHA	ANGES SET FORTH IN ITEM 14 ARE MADE	IN THE CONTRAC	ŗ
	B. THE ABOVE NUMBERED CONT appropriation date, etc.) SET FO	RACT/ORDER IS MODIFIED TO R RTH IN ITEM 14, PURSUANT TO I	EFLECT THE THE AUTHOR	ADMINISTRATIVE CHANGES (such as char ITY OF FAR 43.103(b).	nges in paying office	
	C. THIS SUPPLEMENTAL AGREEM	MENT IS ENTERED INTO PURSUA	HTUA OT TA	ORITY OF:		
	D. OTHER (Specify type of modifical	tion and authority)				_
х	B.13 Contract Fund		(JUN 1	990)		
E. IMPORTAN				0	suing office.	
				ng solicitation/contract subject matter where for		
				Core portion of the co	-	
See Pag	e 2.					
						27
				heretofore changed, remains unchanged and		
15A. NAME A	ND TITLE OF SIGNER (Type or print)		16	BA. NAME AND TITLE OF CONTRACTING O	OFFICER (Type or p	riot)
			T	erence L. Haynes		
15B. CONTRA	ACTOR/OFFEROR	15C. DATE SI	IGNED 16	BB. UNITED STATES OF AMERICA		160. DATE SIGNED
				Derence J. Ha.	mer.	6/28/13
	(Slane-ure of person authorized to sign)	<del></del>	-	(Signature of Contracting Officer) A	1000	6/28/13

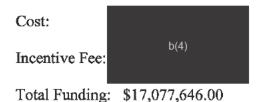
1. Clause B.13 Contract Funding (1852.232-81) (JUN 1990) is revised to fully fund the Core portion of the contract as follows:



This allotment of funds covers performance through September 30, 2013

PR#	Accounting and Appropriation Data	Amount
4200480850	10LM020/6100.2572/10/FC000000/437673.09.10/000/ 2570/10/CASX22013D/618I/8013/140122/1/2	\$2,257,962.94
Total		\$2,257,962.94

2. Total value of the Core portion of the contract remains as follows:



AMENDME	MENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE	PAGE OF PAGES
2. AMENDMEN	NT/MODIFICATION NO.	3. EFFECTIVE DATE	4 R	EQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
000015		See Block 16	1420	10484403	o. Thousand, (in applicable)
6. ISSUED BY	CODE	HQ		DMINISTERED BY (If other than Item 6)	CODE HO
Headquar	ddard Space Flight Ce rters Procurement Off 1t MD 20771	nter	He	SA/Goddard Space Flight adquarters Procurement eenbelt MD 20771	Center
O MANE AND	ADDRESS OF CONTRACTOR OF				
DIGITAL	ADDRESS OF CONTRACTOR (No., street MANAGEMENT INC. CK SPRING DR 7TH FLOOR		(\(\frac{1}{2}\)	A. AMENDMENT OF SOLICITATION NO.  B. DATED (SEE ITEM 11)	
BETHESDA	MD 20817-1124				
				IQA MODIFICATION OF CONTRACT/ORDER	R NO.
			[	OB. DATED (SEE ITEM 13)	
CODE 3B	DL8	FACILITY CODE		06/22/2012	
		11. THIS ITEM ONLY	APPLIES TO AMEN	DMENTS OF SOLICITATIONS	
to the solicita	ation and this amendment, and is received ING AND APPROPRIATION DATA (If req edule	d prior to the opening hou	r and date specified. Net Ir	. <u>.</u>	\$840,847.00
CHECK ONE	<del></del> .			MODIFIES THE CONTRACT/ORDER NO. AS	
	B. THE ABOVE NUMBERED CONTRAC appropriation date, etc.) SET FORTH	T/ORDER IS MODIFIED I IN ITEM 14, PURSUAN	TO REFLECT THE A	ADMINISTRATIVE CHANGES (such as chang TY OF FAR 43.103(b).	nes in paying office,
	C. THIS SUPPLEMENTAL AGREEMEN	T IS ENTERED INTO PU	JRSUANT TO AUTHO	PRITY OF:	
	D. OTHER (Specify type of modification	and authority)			
Х	OPTION TO EXTEND THE	TERM OF THE	CONTRACT	52.217-9) (DEC 1992)	
E. IMPORTANT	T: Contractor X is not.	is required to sign th	is document and retu	n 0 copies to the iss	uing office.
14. DESCRIPT	TION OF AMENDMENT/MODIFICATION	(Organized by UCF secti	ion headings, includin	g solicitation/contract subject matter where fe	asible.)
	oose of this modifica- to the contract; and			e Option Year 1; (2) proof performance.	rovide incremental
SEE PAGE	3 2.				
		e document referenced i		neretofore changed, remains unchanged and i	
15A. NAME AN	ND TITLE OF SIGNER (Type or print)		16.	A. NAME AND TITLE OF CONTRACTING OF	FICER (Type or print)
				erence L. Haynes	
15B. CONTRA	CTOR/OFFEROR	15C. D/	ATE SIGNED 16	3. UNITED STATES OF AMERICA  LECTURE & Hay	16C. DATE SIGNED
	(Signature of person authorized to sign)			(Signature of Contracting Officer)	8/01/13

1. As a result of this modification Option Year I is hereby exercised. Clause B.11 entitled, "ESTIMATED COST AND INCENTIVE FEE (1852.216-84) (OCT 1996)" is hereby Increased as follows:

_	FROM	BY	TO
Cost: Incentive Fee: Total Funding		b(4)	

- 2. The Period of Performance is hereby extended from date of award through September 30, 2014.
- 3. Additional funding is hereby added to Clause B.13, entitled, "CONTRACT FUNDING (1852.232-81) (JUN 1990)" to the Core portion of the contract as follows:

F	ROM	RV	TO
Cost:			
Incentive Fee:		b(4)	
Total Funding:			

This allotment of funds covers performance through September 30, 2013

PR#	Accounting and Appropriation Data	Amount
4200484403	10LM020/6100.2572/10/FC000000/437673.09.10/000/ 2570/10/CASX22013D/618I/8013/140122/1/2	\$840,847.00
Total		\$840,847.00

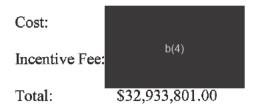
AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE	PA	AGE OF PAGES
2 AMENDMEN	NT/MODIFICATION NO.	3. EFFECTIVE DA	TF 4	, REQUISITION/PURCHASE REQ. NO.	5 PROJ	1 2 ECT NO. (If applicable)
000016	enincon iganore no.		0	ee Schedule	0.71100	Lot No. (I apprount)
6. ISSUED BY	CODE	See Block	100	7. ADMINISTERED BY (if other than Item 6)	CODE	но
Headquar	ddard Space Flight Ce rters Procurement Off lt MD 20771	nter	1	NASA/Goddard Space Fligh Headquarters Procurement Greenbelt MD 20771	t Cente	r
8. NAME AND	ADDRESS OF CONTRACTOR (No., street	t, county, State and ZIF	Code) ()	9A. AMENDMENT OF SOLICITATION NO.		
DIGITAL	MANAGEMENT INC.		1			
	K SPRING DR 7TH FLOOR	R		9B. DATED (SEE ITEM 11)		
3ETHESDA	MD 20817-1124		ĺ			
				10A MODIFICATION OF CONTRACT/ORDE NNH12CF39C	R NO.	
				10B. DATED (SEE ITEM 13)		
CODE 3B	DT8.	FACILITY CODE		06/22/2012		
		11. THIS ITEM	ONLY APPLIES TO AM	ENDMENTS OF SOLICITATIONS		
separate lett THE PLACE virtue of this	ter or telegram which includes a reference EDESIGNATED FOR THE RECEIPT OF (	to the solicitation a OFFERS PRIOR TO a already submitted	nd amendment number THE HOUR AND DAT , such change may be r	ing receipt of this amendment on each copy of the s. FAILURE OF YOUR ACKNOWLEDGEMENT F SPECIFIED MAY RESULT IN REJECTION O made by telegram or letter, provided each telegrand.	TO BE RECE F YOUR OFFE	EVED AT ER. If by
	ING AND APPROPRIATION DATA (If req	quired)	Net	Increase:	\$2,229	,100.31
See Sche	<u> </u>			IT MODIFIES THE CONTRACT/ORDER NO. AS		
CHECK ONE		CT/ORDER IS MOD I IN ITEM 14, PURS	IFIED TO REFLECT TO SUANT TO THE AUTHOR	HANGES SET FORTH IN ITEM 14 ARE MADE  HE ADMINISTRATIVE CHANGES (such as char  ORITY OF FAR 43.103(b).  THORITY OF:		
	D. CTHER (Specify type of modification	and authority)				
x	B.13 Contract Fundin	ig (1852.23	32-81) (JUN	1990)		
E. IMPORTANT	T: Contractor X is not.	is required to s	ign this document and r	return O copies to the is:	suing office.	
				ding solicitation/contract subject matter where for	easible.)	
The purp the cont	ract.	tion is to	provide in	cremental funding to the	CORE p	ortion of
	B 4			7 <del>*</del>		
100	18 7 D					
		ne document referer	nced in Item 9A or 10A,	as heretofore changed, remains unchanged and		
TOA. NAME A	ND TITLE OF SIGNER (Type or print)			16A. NAME AND TITLE OF CONTRACTING O	PRICER (199	e or printj
	,			Terence L. Haynes		
15B. CONTRA	CTOR/OFFEROR	15	C. DATE SIGNED	Jeruna L Su	mer	16C. DATE SIGNED
	(Signature of person authorized to sign)			(Signature of Contracting Officer)		9/09/13



This allotment of funds covers performance through November 30, 2013

PR#	Accounting and Appropriation Data	Amount
4200486718	10JC000/6100.2550/10/FC000000/752374.28.13.02.10/ 000/2550/10/CASX22013D/922A/8013/140122/1/2	\$50,000.00
4200490261	10LM020/6100.2572/10/FC000000/437673.09.10/000/ 2570/10/CASX22013D/618I/8013/140122/1/2	\$2,179,100.31
Total		\$2,229,100.31

- 2 The Period of Performance is from date of award through September 30, 2014.
- 3. Total value of the Core portion of the contract remains as follows:



AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE		PAGE OF PAGES	
				1	2	
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. R	EQUISITION/PURCHASE REQ. NO.	5. PROJECT !	NO. (If applicable)	
000017 6. ISSUED BY CODE	See Block 16C	7.4	DMINISTERED BY (If other then Item 6)	CODE	_	
	1102			CODE HQ		
NASA/Goddard Space Flight Ce			SA/Goddard Space Flight			
Headquarters Procurement Off Greenbelt MD 20771	:ice		adquarters Procurement O eenbelt MD 20771	filce		
Greenbert Mb 20//I		GI	eembert MD 20771			
8. NAME AND ADDRESS OF CONTRACTOR (No., stress	t, county, State and ZIP Code)	(x)	BA. AMENDMENT OF SOLICITATION NO.			
DIGITAL MANAGEMENT INC.		П				
6550 ROCK SPRING DR 7TH FLOO	R		9B. DATED (SEE ITEM 11)			
BETHESDA MD 20817-1124						
		$\vdash$	TO MODIFICATION OF CONTRACTIONDER	10		
		x	10A. MODIFICATION OF CONTRACT/ORDER NNH 1.2CF 39C	NO.		
		↑	10B. DATED (SEE ITEM 13)			
CODE 3BDL8	FACILITY CODE		06/22/2012			
	11. THIS ITEM ONLY APPLIE	S TO AMEN	DMENTS OF SÖLICITATIONS			
The above numbered solicitation is amended as set for	orth in Item 14. The hour and date	specified fo	r receipt of Offers is exte	ended, [is no	t extended.	
Offers must acknowledge receipt of this amendment of	prior to the hour and date specified	in the solicit	ation or as amended, by one of the following me	thods: (a) By cor	npleting	
			receipt of this amendment on each copy of the o			
separate letter or telegram which includes a reference						
THE PLACE DESIGNATED FOR THE RECEIPT OF						
virtue of this amendment you desire to change an offe to the solicitation and this amendment, and is received			ie by telegram or letter, provided each telegram (	or letter makes re	erence	
12. ACCOUNTING AND APPROPRIATION DATA (If rec	quired)					
See Schedule						
13. THIS ITEM ONLY APPLIES TO M	ODIFICATION OF CONTRACTS/C	ORDERS. IT	MODIFIES THE CONTRACT/ORDER NO. AS DI	ESCRIBED IN IT	EM 14.	
0.1504.015		_				
CHECK ONE A. THIS CHANGE ORDER IS ISSUED I CRDER NO. IN ITEM 10A.	PURSUANT TO: (Specify authority	) THE CHA	NGES SET FORTH IN ITEM 14 ARE MADE IN 1	THE CONTRACT	Г	
~						
B. THE ABOVE NUMBERED CONTRAC appropriation date, etc.) SET FORTH	CT/ORDER IS MODIFIED TO REF H IN ITEM:14, PURSUANT TO TH	LECT THE LE AUTHORI	ADMINISTRATIVE CHANGES (such as changes TY OF FAR 43.103(b).	s in paying office	•	
C. THIS SUPPLEMENTAL AGREEMEN	IT IS PURPOPO INTO DURS.	· · · · · · · · ·	ADITO OF			
C. THIS SUPPLEMENTAL AGREEMEN	IT IS ENTERED INTO PURSUANT	I TO AUTHO	ORITY OF:			
D OTHER (Seesify type of marifootics	and and book i					
D. OTHER (Specify type of modification	• • • • • • • • • • • • • • • • • • • •	- 41056	0.016 0A) (OGT 1006)			
X B.11 Estimated Cost						
	is required to sign this docum					
14. DESCRIPTION OF AMENDMENT/MODIFICATION		-	-	,		
The purpose of this modifica	-	le Ince	ntive Fee Payment for Pe	eriod 1 c	n the	
CORE portion of the contract						
SEE PAGE 2.						
			20			
- V						
Continued						
Except as provided herein, all terms and conditions of the	ne document referenced in Item 9A					
15A. NAME AND TITLE OF SIGNER (Type or print)		16	A. NAME AND TITLE OF CONTRACTING OFF	ICER (Type or p	int)	
		T	erence L. Haynes			
15B. CONTRACTOR/OFFEROR	15C. DATE SIGN		B. UNITED STATES OF AMERICA	Т	16C. DATE SIGNED	
		.0	$\sim$ $\sim$ $\sim$ $\sim$ $\sim$	_		
(Clanarius of names and advanta atom)			Derence I, Har	Mez	9/10/13	
(Signature of person authorized to sign)	I	1	(Signature of Contracting Officer)		1110112	

1. The purpose of this modification is to provide the Incentive Fee Payment for Period 1 on the Core portion of the contract as follows:

Clause B8, Incentive Fee (52.216-10) (JUN 2011)

Incentive Fee Period 1 Payable for Technical Performance as follows:



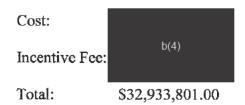
MENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE	PAGE	OF PAGES
		14.55	OUISTION/DUBOUAGE DEC. NO.	1	2
AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE		QUISITION/PURCHASE REQ. NO. Schedule	5. PROJECT	NO. (If applicable)
00018 SSUED BY CODE	See Block 16C		MINISTERED BY (If other than Item 6)	CODE HO	
SSUEDBY CODE SA/Goddard Space Flight Ce adquarters Procurement Offi eenbelt MD 20771	enter	NAS Hea	AA/Goddard Space Fligh dquarters Procurement enbelt MD 20771	t Center	
HAME AND ADDRESS OF CONTRACTOR (No., safes) GITAL MANAGEMENT INC. 50 ROCK SPRING DR 7TH FLOO THESDA MD 20817-1124  DE 3BDL8		x 10 N	A. AMENDMENT OF SOLICITATION NO.  B. DATED (SEE ITEM 11)  DA. MODIFICATION OF CONTRACT/ORD INH12CF39C  DB. DATED (SEE ITEM 13)  06/22/2012  IMENTS OF SOLICITATIONS	ER NO.	
he above numbered solicitation is amended as set f				extended, [] is no	of extended.
A. THIS CHANGE ORDER IS ISSUED CROER NO. IN ITEM 10A.	MODIFICATION OF CONTRACTS/OR PURSUANT TO: (Specify authority)	DERS. IT I	CTEASE:  MODIFIES THE CONTRACT/ORDER NO. A  MODIFIES THE MODIFIES TH	E IN THE CONTRAC	<b>EM 14.</b> T
C. THIS SUPPLEMENTAL AGREEMEN					
D. CTHER (Specify type of modification	n and authority)				
X B.13 Contract Fjund:	••	JUN 1	990)		
-	is required to sign this documen		^	ssuing office	
DESCRIPTION OF AMENDMENT/MODIFICATION NE PURPOSE OF THIS MODIFICATION ON TRACT.  DE PAGE 2.					tion of
		or 10A. as h	eretofore changed, remains unchanged an	nd in full force and ef	fect.

	FROM	BY	TO
Cost: Incentive Fee: Total Funding:		b(4)	

This allotment of funds covers performance through November 30, 2013

PR#	Accounting and Appropriation Data	Amount
4200490618	10CH000/6100.2572/10/FC000000/102434.01.03.01.05/ 000/2570/10/EXPX22013D/201E/8013/140124/1/2	\$725,000.00
4200490646	10LM020/6100.2572/10/FC000000/437673.09.10/000/ 2570/10/CASX22013D/618I/8013/140122/1/2	\$ 31,209.00
Total		\$756,209.00

- 2. The Period of Performance is from date of award through September 30, 2014.
- 3. Total value of the Core portion of the contract remains as follows:



2 AMERICANDETRICATION NO.  3 EFFECTIVE DATE  1 RESIDENT CONCENTION OF Appaces FIG. 16C.  5 SENDE BY  COURT OF COURT OF THE PROCESSAND CONCENTRATION OF A COUNTY OF THE PROCESSAND CONCENTRATION OF CONTRACTION OF CONTRACTION OF COUNTY OF THE PROCESSAND CONCENTRATION OF CONTRACTION OF CONTRACTION OF COUNTRACTION OF COUNTRACT	AMENDME	MENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT D CODE		PAGE OF	1
See Block 16C  NASA/Goddard Space Flight Center  NASA/Goddard Space Flight Center  Readquarters Procurement Office  Greenbelt MD 20771  SASA/Goddard Space Flight Center  Readquarters Procurement Office  Greenbelt MD 20771  SASA/Goddard Space Flight Center  Readquarters Procurement Office  Greenbelt MD 20771  SASA/Goddard Space Flight Center  Readquarters Procurement Office  Greenbelt MD 20771  SASA/Goddard Space Flight Center  Readquarters Procurement Office  Greenbelt MD 20771  SASA/Goddard Space Flight Center  Readquarters Procurement Office  Greenbelt MD 20771  MA AMENDMENT OF SCUCITATION NO.  MA DATE (SEE TEM 10)  MA AMENDMENT OF SCUCITATION NO.  MA DATE (SEE TEM 10)  THE BOOK SPACE SPATING DR 7TH FLOOR  SETHESDA MD 20817-1124  The BOOK SPACE SPATING DR 7TH FLOOR  THE BOOK SPACE S	2. AMENDMEN	NT/MODIFICATION NO.	3. EFFECTIVE DATE	4. R	EQUISITION/PURCHASE REQ. NO.	5. PF	1 ROJECT NO	(If applicable)
### ASSA/GORDATE OF Flight Center   Readquarters Procurement Office	000019		See Block 160					
NASA/Coddard Space Plight Center  Readquatters Procurement Office  Greenbelt MD 2071  8. NAME AND ADDRESS OF CONTRACTOR (No. areas on with, Same and PPCAN)  10. SETTLE MANAGEMENT INC.  5.55 ROCK SPRING RD 7TH FLOOR  BETHESDA MD 20817-1124  The above numbered existation is americade as set forth in term 11. The hour and date specified for recept of Offices  The above numbered existation is americade as set forth in term 11. The hour and date specified for recept of Offices  The above numbered existation is americade as set forth in term 11. The hour and date specified for recept of Offices  The above numbered existation is americade as set forth in term 11. The hour and date specified for recept of Offices  The above numbered existation is americade as set forth in term 11. The hour and date specified for recept of Offices  The above numbered existation is americant as the property of the selection or of the selection or of the selection or offices americant or each copy of the date in americant or in the selection or offices americant or each copy of the date in americant or in the selection or offices americant or each copy of the date in americant or in the selection or offices americant or each copy of the date in americant or in the selection or offices americant or each copy of the date in americant or in the selection or offices americant or each copy of the date in americant or each of the following material or each of the date in americant or each of the date in americant or each of the date in americant or each of the		CODE		7. Ä	DMINISTERED BY (If other than Item 6)	COD	E HO	
DEGETAL MANAGEMENT INC.  5550 ROCK SPRING DR 7TH FLOOR  360 DATED (SEE ITEM 17)  TO BE ADDRESS OF THE STATE OF THE FLOOR SET OF THE STATE OF THE STA	Headqua	Headquarters Procurement Office		NASA/Goddard Space Flight Center Headquarters Procurement Office				
SETHESDA MD 20817-1124    TOAL MODIFICATION OF CONTRACTIONOR NO.	8. NAME AND	ADDRESS OF CONTRACTOR (No., street	, county, State and ZIP Code)	(x) <sup>(</sup>	PA. AMENDMENT OF SOLICITATION NO.			
FACILITY CODE   TOR, DATED (SEE ITEM 13)   CODE   TOR, DATED (SEE ITEM 14)	6550 ROC	CK SPRING DR 7TH FLOOR	R		08. DATED (SEE ITEM 11)			
### ACLITY CODE ### 1.1 THIS TEM ONLY APPLIES TO AMENDMENTS OF SOLUTIATIONS    The above numbered solicitation is emerided as set forth in his mid. It has how and date specified for mosts of Offers and set accorded, consist of the solutions of the solutions of the set and the specified in the solicitation or as arrended, by one of the following ments and consistency of the mendments of the body of the mendments of the purpose of the solutions of the document referenced in items of the purpose of this mendments of the document referenced in items 6A or 1CA, as hereofore changed, remains unchanged and in full force and effect the purpose of this modification of the document referenced in item 6A or 1CA, as hereofore changed, remains unchanged and in full force and effect to A NAME AND TITLE OF SIGNER (7)ppe or print)    The purpose of this modification of the document referenced in item 6A or 1CA, as hereofore changed, remains unchanged and in full force and effect to A NAME AND TITLE OF SIGNER (7)ppe or print)    The purpose of this mendments of the document referenced in item 6A or 1CA, as hereofore c						NO.		
The Above numbered solicitation is amended as set forth in item 14. The hour and date specified for recipit of Offers   is extended.   is not ex	CODE 25	DIG	FACILITY CODE	-				
The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offiers    Items 1 and 15. and returning	3B	ппс		A A MEET				· · · · · · · · · · · · · · · · · · ·
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:  D. CTHER (Specify type of modification and authority)  X B.13 Contractor  Is not.  is required to sign this document and return  O copies to the issuing office.  14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)  The purpose of this modification is to provide incremental funding to the CORE portion of contract.  SEE PAGE 2.  Except as provided herein, all terms and conditions of the document referenced in Item 9A or 1CA, as heretofore changed, remains unchanged and in full force and effect.  15A. NAME AND TITLE OF SIGNER (Type or print)  16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  Terence L. Haynes  15B. CONTRACTOR/OFFEROR 15C. DATE SIGNED 16B. UNITED STATES OF AMERICA 18C. DATE SIGNED 18C. DATE SI	See Sch	edule 13. THIS ITEM ONLY APPLIES TO M	ODIFICATION OF CONTRACTS/ORD	ERS. IT	MODIFIES THE CONTRACT/ORDER NO. AS I	DESCRIE	BED IN ITEM	14.
ELIMPORTANT: Contractor						es in pay	ring office,	
ELIMPORTANT: Contractor		D. OTHER (Specify type of modification	and authority)			_		
E.IMPORTANT: Contractor   X   Is not.   is required to sign this document and return   0   copies to the issuing office.  14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)  The purpose of this modification is to provide incremental funding to the CORE portion of contract.  SEE PAGE 2.  Except as provided herein, all torms and conditions of the document referenced in liem 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.  15A. NAME AND TITLE OF SIGNER (Type or print)  16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  Terence L. Haynes  15C. DATE SIGNED  16B. UNITED STATES OF AMERICA  16C. DATE SIG	x		**	JUN 1	1990)			
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)  The purpose of this modification is to provide incremental funding to the CORE portion of contract.  SEE PAGE 2.  Except as provided herein, all terms and conditions of the document referenced in Hem 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.  15A. NAME AND TITLE OF SIGNER (Type or print)  16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  Terence L. Haynes  15B. CONTRACTOR/OFFEROR  15C. DATE SIGNED  16B. UNITED STATES OF AMERICA  16C. DATE SIGNED						ing office	e.	
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.  15A. NAME AND TITLE OF SIGNER (Type or print)  15B. CONTRACTOR/OFFEROR  15C. DATE SIGNED  16B. UNITED STATES OF AMERICA  16C. DATE SIGNED								
15A. NAME AND TITLE OF SIGNER (Type or print)  16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  Terence L. Haynes  15B. CONTRACTOR/OFFEROR  15C. DATE SIGNED  16B. UNITED STATES OF AMERICA  16C. DATE SIGNED	contract		tion is to provide	incr	emental funding to the	CORE	porti	on of
		101	ne document referenced in Item 9A or	16	A. NAME AND TITLE OF CONTRACTING OF			
	15B. CONTRA	ACTOR/OFFEROR	15C. DATE SIGNED	16	B. UNITED STATES OF AMERICA Bereine & Han	per	- 1	C. DATE SIGNED

	FROM	· BY	TO
Cost:			
Incentive Fee:		b(4)	
Total Funding:			

This allotment of funds covers performance through November 30, 2013

PR#	Accounting and Appropriation Data	Amount
4200492218	10MA000/6100.2520/10/FC000000/449048.08.10/ 000/2520/10/CASX22013D/618I/8013/140122/1/2	\$7,000.00
	10MA000/6100.2520/10/FC000000/449048.08.10/ 000/2520/10/CASX22013D/618I/8013/140122/1/84	\$1,500.00
Total		\$8,500.00

- 2. The Period of Performance is from date of award through September 30, 2014.
- 3. Total value of the Core portion of the contract remains as follows:



2 AMERIDMENTMODIFICATION NO.  3 EFFECTIVE DATE  A REQUESTROMPURCHASE REQ NO.  8 PROJECT NO. (Ferpletches)  See Shocktile  MASA/Goddard Space Flight Center  Readquarters Producement Office  Greenbelt MD 20771  R NAME AND ADDRESS OF CONTRACTOR (No. mere, courp, Sees and ZPC code)  A NAME AND ADDRESS OF CONTRACTOR (No. mere, courp, Sees and ZPC code)  DISTAIL MANNAGEMENT INC.  SEE SO ROCK SPRING DR TITL ELOOR  BETHESDA MD 20817-1124  The Mathematical Space of the State of	AMENDMENT OF SOLICITA	ATION/MODIFICATION OF	CONTRACT	1. CONTRACT ID CODE	PAGE OF PAGES
See Slock 16C  See Slock 16C  See Schedule  7. Administrace by youther have there to  8. See Slock 16C  7. Administrace by youther have there to  8. NASA/Goddard Space Flight Center  8. NASA/Goddard Space Flight Center  8. RAME AND 20771  8. NASA/Goddard Space Flight Center  8. RAME AND 20771  8. NASA/Goddard Space Flight Center  8. RAME AND 20771  8. NASA/Goddard Space Flight Center  8. RAME AND 20771  8. RAME AND ADDRESS OF CONTRACTOR (no. mere, course, course, course)  8. RAME AND ADDRESS OF CONTRACTOR (no. mere, course, course)  8. RAME AND ADDRESS OF CONTRACTOR (no. mere)  8. RAME AND ADDRESS OF CONT	2 AMENDMENT/MODIFICATION	NO 3 EFFECTIV	/F DATE	4 RECUISITION/PURCHASE REC. NO.	<del></del>
## ASSA/GORDAN OF PLOYER BOOK BO    A AMASA/GORDAN PY Other has two of product means of product person of the person of the product person of the person of					a. FROJECT NO. (II applicable)
Readquarters Producement Office   Greenbalt MD 20771   Second Delta MD 20771		****	JUL 100	7. ADMINISTERED BY (If other than Item 6)	CODE HQ
DIGITAL MANAGEMENT INC.  5550 ROCK SPRING DR 7TH FLOOR  3ETHESDA MD 20817-1124  X 10A MODIFICATION OF CONTRACTORDER NO. NNT12C 39.  The above numbered addication is amended as set forth in ten 14. The hour and date specified for receipt of Offers and subscience of the summerization prior to the own and date specified for receipt of Offers and subscience of the summerization prior to the own and date specified for receipt of Offers and subscience of the summerization prior to the own and date specified for receipt of Offers and subscience of the summerization prior to the own and date specified for receipt of Offers and subscience of the summerization prior to the own and date specified for receipt of the summerization prior to the own and date specified for receipt of Offers and subscience of the summerization prior to the own and date specified for receipt of the summerization prior date of the summerization prior of the summerization prior of the summerization prior of the summerization prior date of the	Headquarters Procu	rement Office		Headquarters Procurement	
SETTESDA MD 20817-1124    The property of the	8. NAME AND ADDRESS OF CON	FRACTOR (No., street, county, State a	nd ZIP Code)	(x) 9A. AMENDMENT OF SOLICITATION NO	<u> </u>
NNET 2CT 39 C	5550 ROCK SPRING D	R 7TH FLOOR		9B. DATED (SEE ITEM 11)	
### SECONTRACTORYOFEROR ### SECONDARY CONTRACTORY STATES OF AMERICAN S				x IDA. MODIFICATION OF CONTRACT/OF NNH12CF39C	RDER NO.
Standard Selectation is amended as set forth in Item 14. The hour and date specified for receipt of Offers   The standard selectation is amended as set forth in Item 14. The hour and date specified for receipt of Offers   The standard selectation is amended as set forth in Item 14. The hour and date specified for receipt of Offers   The purpose of the standard selectation of the standard selectation of the standard selectation of the standard selectation of the hour and date specified for receipt of Offers   The PLACE DESIGNATE POR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER It by this of this amendment you desire to change an offer and substitution and amendment numbers. Pack the specified for the solening hour and date specified in the selectation of the specified prior to the specified prior and date specified in the selectation of the specified prior to the specified prior and date specified as selectation.   The PLACE DESIGNATE POR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER It by this of this amendment you desire to change an other mades updated by their prior of their provided each integration of letter makes reference to the splittless and this generalment, and is received prior to the specified for and the specified of the specified prior to the specified prior and date specified.   The The The ADMINISTRATION OF YOUR OFFER IT BY THE CHANGES (such as schanges in paying office), and the specified prior to the specified prior to the splittless of the selection of the specified prior to the spe				10B. DATED (SEE ITEM 13)	<u> </u>
The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers   lie outstaid   lie not invited and   lie outstaid	CODE 3BDL8	FACILITY CO	ODE	06/22/2012	
See Schedule  13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.  CHECK ONE  A THIS CHANGE ORDER IS ISSUED PURSUANT TO. (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN THEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).  C. THIS SUPPLEMENTAL AGREEMENT'S ENTERED INTO PURSUANT TO AUTHORITY OF.  D. OTHER (Specify type of modification and authority)  X B.13 CONTRACT Fjunding (1852.232-81) (JUN 1990)  E. IMPORTANT: Contractor   Ris not.   Is required to sign this document and return   O   copies to the leaving office.  14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/teorited subject metter whore fessible.)  The purpose of this modification is to provide incremental funding to the CORE portion of contract.  SEE PAGE 2.  Except as provided herein, all terms and conditions of the document referenced in item 9 A or 1DA, as herefolders changed, remains unchanged and in full force and effect.  15A NAME AND TITLE OF SIGNER (Type or print)  Texance I. Haynes  15B. CONTRACTOF/OFFEROR  15C. DATE SIGNED  15B. UNITED STATES OF AMERICA  ANAMERICAL HAYNES  16C. DATE SIGNED  16B. UNITED STATES OF AMERICA  ANAMERICAL HAYNES	THE PLACE DESIGNATED FOR virtue of this amendment you des reference to the solicitation and to	THE RECEIPT OF OFFERS PRICE THE to change an offer already submits amendment, and is received pri	OR TO THE HOUR AND DA nitted , such change may be	TE SPECIFIED MAY RESULT IN REJECTION e made by telegram or letter, provided each tel	OF YOUR OFFER If by
13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.  CHECK ONE  A. THIS CHANGE ORDER IS ISSUED PURSUANT TO (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.  B. THE ADOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43 103(b).  C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF.  D. OTHER (Specify type of modification and authority)  X B. 1.3 CONTRACT From Item 18 to 18 to 18 to 19 to 1	12. ACCOUNTING AND APPROPR			· · · · · · · · · · · · · · · · · · ·	\$41,965.89
B.13 Contract Fjunding (1852.232-81) (JUN 1990)  E.IMPORTANT: Contractor   Xi is not.		_			hanges in paying office,
EMPORTANT: Contractor Elis not.   is required to sign this document and return   0   copies to the issuing office.  14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feesible.)  The purpose of this modification is to provide incremental funding to the CORE portion of contract.  EXCEPTAGE 2.  Except as provided herein, all terms and conditions of the document referenced in item 9 A or 10A, as herelotore changed, remains unchanged and in full force and effect.  15A. NAME AND TITLE OF SIGNER (Type or print)  15A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  Terence L. Haynes  15B. CONTRACTOF/OFFEROR  15C. DATE SIGNED  16B. UNITED STATES OF AMERICA  ABULEAUX L. Haynes  16C. DATE SIGNED  16D. DATE SIGNED					
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter whore feasible.) The purpose of this modification is to provide incremental funding to the CORE portion of contract.  SEE PAGE 2.  Except as provided herein, all terms and conditions of the document referenced in item 9 A or 10A, as heretolore changed, remains unchanged and in full force and effect.  15A. NAME AND TITLE OF SIGNER (Type or print)  16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  Terence L. Haynes  15B. CONTRACTOF/OFFEROR  15C. DATE SIGNED  16B. UNITED STATES OF AMERICA  ALLEGATE SIGNED  16C. DATE SIGNED	·				
15A. NAME AND TITLE OF SIGNER (Type or print)  16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  Terence L. Haynes  15B. CONTRACTOF/OFFEROR  15C. DATE SIGNED  16B. UNITED STATES OF AMERICA  16C. DATE SIGNED  17 16C. DATE SIGNED	The purpose of thi contract.	NT/MODIFICATION (Organized by	UCF section headings, inc	luding solicitation/contract subject matter who	re feesible.)
Derence L. Haypen 12 1/10		and conditions of the document re	oferenced in Item 9 A or 10/	The state of the s	
(Signature of person authorized to sign) (Signature of Contracting Office)	15A. NAME AND TITLE OF SIGNE	R (Type or print)	150 DATE SIGNIER	Terence L. Haynes	1400 00000

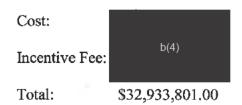
Prescribed by GSA FAR (48 CFR) 53.243

	FROM	BY	TO
Cost:			
Incentive Fee:		b(4)	
Total Funding:			

This allotment of funds covers performance through February 28, 2014

PR#	Accounting and Appropriation Data	Amount
4200495317	10NC000/6100.2572/10/FC000000/779345.04.10/ 000/2570/10/CASX22014D/618I/8014/150122/1/82	\$26,965.89
4200496607	10LF020/6100.2572/10/FC000000/633023.06.10/ 000/2570/10/CASX22014D/618I/8014/150122/1/2	\$15,000.00
Total		\$41,965.89

- 2. The Period of Performance is from date of award through September 30, 2014.
- 3. Total value of the Core portion of the contract remains as follows:



AMENDMENT OF SOLICITATION/MOD	IFICATION OF CO	NTRACT	1. CONTRACT ID CODE	PAGE OF PAGES
2. AMENDMENT/MCDIFIGATION NO.	3. EFFECTIVE D	ATÉ 4	REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
000021				
6. ISSUED BY C	ODE HQ	7	. ADMINISTERED BY (If other than item 6)	CODE HQ
NASA/Goddard Space Flight	Center	1	ASA/Goddard Space Fligh	t Center
Headquarters Procurement	Office	1	leadquarters Procurement	Office
Greenbelt MD 20771			Greenbelt MD 20771	
8. NAME AND ADDRESS OF CONTRACTOR (No.,	, street, county, State and Zt.	P Code)	9A. AMENDMENT OF SOLICITATION NO.	
		<u> </u>	<u>/</u>	
DIGITAL MANAGEMENT INC. 5550 ROCK SPRING DR 7TH FI	COOR		9B. DATED (SEE ITEM 11)	
SETHESDA MD 20817-1124	LOOK		SS. BATES (SEE TIEM TI)	
EINEDDA HD 2001/ 1124				
		x	10A. MODIFICATION OF CONTRACT/ORDS	ER NO.
			•	
			10B. DATED (SEE ITEM 13)	
CODE 3BDL8	FACILITY CODE		06/22/2012	
	11, THIS ITEN	ONLY APPLIES TO AM	I ENDMENTS OF SOLICITATIONS	
The above numbered solicitation is amended as	set forth in Item 14. Th	e hour and date specifie	for receipt of Offers [] is	extended. is not extended.
Offers must acknowledge receipt of this amendr	ment prior to the hour and	d date specified in the so	icitation or as amended , by one of the following	g methods: (a) By completing
Items 8 and 15, and returning			ng receipt of this amendment on each copy of t	
separate letter or telegram which includes a refe	erence to the solicitation	and amendment number	FAILURE OF YOUR ACKNOWLEDGEMEN	T TO BE RECEIVED AT
THE PLACE DESIGNATED FOR THE RECEIP	TOF OFFERS PRIOR T	O THE HOUR AND DATI	SPECIFIED MAY RESULT IN REJECTION OF	F YOUR OFFER If by
virtue of this amendment you desire to change a				ram or letter makes
reference to the solicitation and this amendment		the opening hour and da	rte specified.	<del>- , </del>
2. ACCOUNTING AND APPROPRIATION DATA ( See Schedule	(ir requirea)	·Net	Increase:	\$5,092,000.00
	TO MODIFICATION OF	CONTRACTS/ORDERS	IT MODIFIES THE CONTRACT/ORDER NO. AS	S DESCRIBED IN ITEM 14
CHECK ONE A. THIS CHANGE ORDER IS ISS	UED PURSUANT TO: (S	Specify authority) THE C	HANGES SET FORTH IN ITEM 14 ARE MADE	IN THE CONTRACT
ORDER NO. IN ITEM 10A.				
B. THE ABOVE NUMBERED COM	TRACT/ORDER IS MOI	DIFIED TO REFLECT TH	E ADM!NISTRATIVE CHANGES (such as char RITY OF FAR 43.103(b).	nges in paying office,
appropriation date, etc.) SETF	OKITINITEM 14, POR	COUANT TO THE AUTHO	RITT OF PAR 45. 105(0).	
C. THIS SUPPLEMENTAL AGREE	EMMENT IS ENTERED IN	TO PURSUANT TO AUT	HORITY OF	
D. CTHER (Specify type of modifie				
X B.13 Contract Fju	ınding (1852.	232-81) (JUN		
E. IMPORTANT: Contractor 🗵 is r	not. 🔲 is required to	sign this document and r	eturnO copies to the is	ssuing office.
14. DESCRIPTION OF AMENDMENT/MODIFICA	TION (Organized by UC)	F section headings, inclu	ding solicitation/contract subject matter where t	feasible.)
The purpose of this modif	ication is t	o provide in	cremental funding to the	e CORE portion of
contract.				
SEE PAGE 2				
Except as provided herein, all terms and condition	ns of the document refere	enced in Item 9 A or 10A.	as heretofore changed, remains unchanged ar	nd in full force and effect,
15A. NAME AND TITLE OF SIGNER (Type or print			16A. NAME AND TITLE OF CONTRACTING	
			Terence L. Haynes	
15B. CONTRACTOR/OFFEROR	1	5C. DATE SIGNED	18B. UNITED STATES OF AMERICA	16C. DATE SIGNED
			Derence L. H	cone of 1
(Signature of person authorized to sign)			(Signature of Contracting Officer)	1 3/24/1
indiana a beloes person to sign)			1 0 11 11 11 11 11 11 11 11 11 11 11 11	T CONTRACTOR OF THE PARTY AND ADDRESS OF THE P

_	FROM	BY	TO
Cost:			
Incentive Fee:		b(4)	
Total Funding:			

This allotment of funds covers performance through June 30, 2014

PR#	Accounting and Appropriation Data	Amount
4200503987	10CH000/6100.2572/10/FC000000/401769.06.07.03.19.0/5/ 000/2570/10/EXCX22014D/733B/8014/150115/1/2	\$ 92,000.00
4200506996	10LM020/6100.2572/10/FC000000/437673.09.10/ 000/2570/10/CASX22014D/618I/8014/150122/1/2	\$5,000,000.00
Total		\$5,092,000.00

- 2. The Period of Performance is from date of award through September 30, 2014.
- 3. Total value of the Core portion of the contract remains as follows:



AMENDME	AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE	PAGE OF PAGES		
		3. EFFECTIVE DATE	4 BEO	HIGHIONICH DOLLAGE DEC. NO.		1 (65	2
	NT/MODIFICATION NO.			uisition/purchase req. no. Schedule	[5. PK	OJECT NO. (If applica	)(0)
000022	CODE	See Block 16C	- T	MINISTERED BY (If other than Item 6)	CODE	HQ	
6. ISSUED BY		HQ	<del>- 1</del> . '				
Headqua	ddard Space Flight Ce rters Procurement Off lt MD 20771		Head	A/Goddard Space Flight Aquarters Procurement enbelt MD 20771			
8 NAME AND	ADDRESS OF CONTRACTOR (No., street,	county State and 7IP Code)		AMENDMENT OF SOLICITATION NO.			
DIGITAL	MANAGEMENT INC.	14		DATED (SEE ITEM 11)			
	CK SPRING DR 7TH FLOOI A ND 20817-1124			DATED (SEETTEW TI)			
DE LUES DA	4 MD 2001/-1124		1				5.
			x   10/N	A MODIFICATION OF CONTRACT/ORDE NH12CF39C	R NO.		
			101	B. DATED (SEE ITEM 13)			
CODE 3B	BDL8	FACILITY CODE	. 0	6/22/2012			
		11. THIS ITEM ONLY APPLIES	TO AMENDA	IENTS OF SOLICITATIONS			
separate let THE PLACE virtue of this reference to	tter er telegram which includes a reference E DESIGNATED FOR THE RECEIPT OF ( s amendment you desire to change an offe o the solicitation and this amendment, and	to the solicitation and amendment OFFERS PRIOR TO THE HOUR AN r already submitted , such change is is received prior to the opening hou	numbers. FA ND DATE SPE may be made	peipt of this amendment on each copy of the NLURE OF YOUR ACKNOWLEDGEMENT CIFIED MAY RESULT IN REJECTION OF by telegram or letter, provided each telegra	TO BE RE YOUR OF im or letter	ECEIVED AT FER If by makes	
12. ACCOUNT See Sch	TING AND APPROPRIATION DATA (if regi	uired)	Net Inc	rease:	\$2,98	37,761.00	
see scn	<del> </del>	ODJEJCATION OF CONTRACTS/OF	PREPS IT MA	ODIFIES THE CONTRACT/ORDER NÓ. AS	DESCRIB	IED IN ITEM 14	-
CHECK ONE		CT/ORDER IS MODIFIED TO REFL IN ITEM 14, PURSUANT TO THE	ECT THE AD AUTHORITY	MINISTRATIVE CHANGES (such as change) OF FAR 43.103(b).			
	D. OTHER (Specify type of modification	and authority)					
×	B.13 Contract Fjundi		(.TIN 19	901			
E. IMPORTAN	<u> </u>	is required to sign this docume			suing office	<u> </u>	
14 DESCRIP	TION OF AMENDMENT/MODIFICATION	(Organized by UCF section heading tion is to: ( prov	gs, including s vide in	colicitation/contract subject matter where for cremental funding to	esible.)		
SEE PAGI	E 2.						
	71						
	1)						
Except as pro	ovided herein, all terms and conditions of th	ne document referenced in Item 9 A	or 10A, as he	pretofore changed, remains unchanged and	in full fore	e and effect,	
	ND TITLE OF SIGNER (Type or print)			NAME AND TITLE OF CONTRACTING O			
			Te	rence L. Haynes			
15B. CONTRA	ACTOR/OFFEROR	15C. DATE SIGN	ED 16B.	UNITED STATES OF AMERICA Percerce I, Ha	mes	16C. DATE S	GNED
	(Signature of person authorized to sign)			(Signature of Contracting Officer)	/	1/2	1/14

_	FROM	BY	TO	
Cost:				
Incentive Fee:		b(4)		
Total Funding:				

This allotment of funds covers performance through July 31, 2014

PR#	Accounting and Appropriation Data	Amount
4200510813	10DM000/6100.2572/10/FC000000/383807.02.05/ 000/2570/10/SCEX22014D/728A/8014/150120/1/2	\$1,973,790.00
4200511423	10CI000/6100.2572/10/FC000000/102434.01.03.01.03 000/2570/10/EXPX22014D/201E/8014/150124/1/2	\$1,013,971.00
Total		\$2,987,761.00

- 2. The Period of Performance is from date of award through September 30, 2014.
- 3. Total value of the Core portion of the contract remains as follows:

Cost:
Incentive Fee:

Total: \$32,933,801.00

- 4. The purpose of this modification is to provide Incentive Fee Payment for Period 2 on the CORE Portion of the contract in the amount of b(4)
- 5. All other terms and conditions remain unchanged.

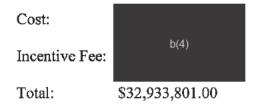
AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT					1. CONTRACT ID CODE			PAGE OF PAGES		
							1 2			
2. AMENDMEN	NT/MODIFICATION NO.	3. EFFECTIVE I		4. REQUISITION/PURCHASE REQ. NO. 5. PROJECT NO. (If ap			O. (If applicable)			
000023		See Bloc	K 10C	See Schedule						
6. ISSUED BY	CODE	HQ		7. 4	ADMINISTERED BY (If other than Item 6)	COD	ΗQ			
Headqua	ddard Space Flight C rters Procurement Of 1t MD 20771			Не	ASA/Goddard Space Flight eadquarters Procurement O reenbelt MD 20771					
8. NAME AND	ADDRESS OF CONTRACTOR (No., street	et, county, State and 2	(IP Code)	(x)	9A. AMENDMENT OF SOLICITATION NO.					
6550 ROC	MANAGEMENT INC. CK SPRING DR 7TH FLOO MD 20817-1124	OR			9B. DATED (SEE ITEM 11)					
			:	x	10A. MODIFICATION OF CONTRACT/ORDER N NNH12CF39C	iC.		_		
					10B. DATED (SEE ITEM 13)					
CODE 3B	DL8	FACILITY CODE	E		06/22/2012					
		11. THIS ITE	M ONLY APPLIES TO A	MEN	NOMENTS OF SOLICITATIONS					
CHECK ONE	A. THIS CHANGE ORDER IS ISSUED ORDER NO. IN ITEM 10A.	PURSUANT TO: (	Specify authority) THE (	CHA	ANGES SET FORTH IN ITEM 14 ARE MADE IN TAIL AND ANGES SET FORTH IN ITEM 14 ARE MADE IN TAIL ADMINISTRATIVE CHANGES (such as changes ITY OF FAR 43.103(b).	HE CC	NTRACT			
	C. THIS SUPPLEMENTAL AGREEME	NT IS ENTERED IN	VTO PURSUANT TO AU	TH	ORITY OF:					
	D. OTHER (Specify type of modification									
X	B.13 Contract Fjund	ing (1852	.232-81) (JUI	N						
E. IMPORTANT	T: Contractor X is not.	☐ is required to	sign this document and	i ret	urn:0_ copies to the issuir	g office	<b>.</b>			
The purp SEE PAGE	pose of this modificated as the second transfer of the second transf	ation is t	to the CORE p	A, a	s heretofore changed, remains unchanged and in	full force				
15A. NAME AN	ND TITLE OF SIGNER (Type or print)				6A. NAME AND TITLE OF CONTRACTING OFFI Cerence L. Haynes	CER (7	Type or prii	nt)		
	CTCR/OFFEROR		15C. DATE SIGNED	10	Blunce T, Hage	e_	_ [1	6C. DATE SIGNED		
	(Signature of person authorized to sign)				(Signature of Contracting Official)					



This allotment of funds covers performance through July 31, 2014

PR#	Accounting and Appropriation Data	Amount
4200512213	10EA000/6100.2572/10/FC000000/309574.01.03.10/ 000/2570/10/AERX22014D/071M/8014/150126/1/2	\$500,532.00
4200512880	10HA000/6100.2520/10/FC000000/737813.10/000 2520/10/EDUX22014D/137B/8014/150128/1/2	\$237,116.00
4200512912	10LF020/6100.2572/10/FC000000/633023.06.10/000 2570/10/CASX22014D/618I/8014/150122/1/2	\$ 23,559.56
Total		\$761,207.56

- 2. The Period of Performance is from date of award through September 30, 2014.
- 3. Total value of the Core portion of the contract remains as follows:



AMENDMENT OF COLUCITATIONS ODIES		1. CONTRACT ID CODE		PAGE OF PAGES			
AMENDMENT OF SOLICITATION/MODIFIC	ATION OF CO	JN I RAC 1	_			1	2
2. AMENDMENT/MOD:FICATION NO.	3. EFFECTIVE					OJECT NO	. (If applicable)
000024	See Bloo	3K 16C	4200517768				
6. ISSUED BY CODE	HQ		7. AD	MINISTERED BY (If other than Item 6)	CODE	HQ	
NASA/Goddard Space Flight C Headquarters Procurement Of Greenbelt MD 20771		1	Hea	A/Goddard Space Flight dquarters Procurement O enbelt MD 20771			
8. NAME AND ADDRESS OF CONTRACTOR (No., street	et, county, State and	ZIP Code)	x) 9/	A. AMENDMENT OF SOLICITATION NO.			
DIGITAL MANAGEMENT INC. 5550 ROCK SPRING DR 7TH FLOC SETHESDA MD 20817-1124	)R		96	B. DATED (SEE ITEM 11)			<u> </u>
		2	x 10	DA. MODIFICATION OF CONTRACT/ORDER N NH12CF39C	IO.		
			10	DB. DATED (SEE ITEM 13)			
CODE 3BDL8	FACILITY COD	DE		06/22/2012			
	11. THIS ITI	EM ONLY APPLIES TO AM	AENĎ	MENTS OF SOLICITATIONS			-
CHECK ONE  A. THIS CHANGE ORDER IS ISSUED ORDER NO. IN ITEM 10A.	PURSUANT TO: ACT/ORDER IS M TH IN ITEM 14, PU	(Specify authority) THE CODIFIED TO REFLECT TO JRSUANT TO THE AUTHORS	HE AI	MODIFIES THE CONTRACT/ORDER NO. AS DE IGES SET FORTH IN ITEM 14 ARE MADE IN T DMINISTRATIVE CHANGES (such as changes Y OF FAR 43.103(b).	THE CO	NTRACT	
D. OTHER (Specify type of modification		. 222 91\ / TIN	т 1	000)			
X B.13 Contract Fjund  E.IMPORTANT: Contractor Sissent.		to sign this document and		<u> </u>			
14. DESCRIPTION OF AMENDMENT/MODIFICATION The purpose of this modific contract.  SEE PAGE 2.  Except as provided herein, all terms and conditions of	ation is	to provide in	acre	emental funding to the C	ORE	and effec	<b>t</b> .
15A. NAME AND TITLE OF SIGNER (Type or print)		450 DATE BIGUED	Те	NAME AND TITLE OF CONTRACTING OFF	ICER (7		
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED	168	Derence L. Har	ne	ا س <u>ا</u>	6/23/14
(Signature of person authorized to sign)				(Signature of Contracting Officer)			-/ -/// /

	FROM	BY	TO
Cost:			
Incentive Fee:		b(4)	
Total Funding:			

This allotment of funds covers performance through July 31, 2014

PR#	Accounting and Appropriation Data	Amount
4200517768	10NC000/6100.2572/10/FC000000/779345.04.10/ 000/2570/10/CASX22014D/618I/8014/150122/1/2	\$29,605.14
Total		\$29,605.14

- 2. The Period of Performance is from date of award through September 30, 2014.
- 3. Total value of the Core portion of the contract remains as follows:



AMENDMENT OF SOLICITATION/MODIFIC	ATION OF CO	NTRACT		1. CONTRACT ID CODE	PA	GE OF PAGES		
AMERICAN OF GOLDSTATIONS OF THE				<u> </u>	<u>, L</u>	1 2		
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE I			EQUISITION/PURCHASE REQ. NO.	5. PROJE	ECT NO. (if applicable)		
000025	See Bloc	K 16C		e Schedule	<u> </u>			
6. ISSUED BY CODE	HQ		7. A	ADMINISTERED BY (If other than Item 6)	CODE	HQ		
NASA/Goddard Space Flight Center Headquarters Procurement Office Greenbelt MD 20771			NASA/Goddard Space Flight Center Headquarters Procurement Office Greenbelt MD 20771					
8. NAME AND ADDRESS OF CONTRACTOR (No., street	t, county, State and 2	ZIP Code)	(x)	9A. AMENDMENT OF SOLICITATION NO.				
DIGITAL MANAGEMENT INC.			Ì					
6550 ROCK SPRING DR 7TH FLOO	R			9B. DATED (SEE ITEM 11)				
BETHESDA MD 20817-1124		]						
		;	х	10A. MODIFICATION OF CONTRACT/ORDER N NNH12CF39C	Ю.			
			ŀ	108. DATED (SEE ITEM 13)				
CODE 3BDL8	FACILITY COD	E		06/22/2012				
	11. THIS ITE	M ONLY APPLIES TO A	MEN	DMENTS OF SOLICITATIONS				
separate letter or telegram which includes a reference THE PLACE DESIGNATED FOR THE RECEIPT OF virtue of this amendment you desire to change an offe reference to the solicitation and this amendment, and 12. ACCOUNTING AND APPROPRIATION DATA (if req	OFFERS PRIOR T or already submitte is received prior t	TO THE HOUR AND DAT ed , such change may be to the opening <u>hour and c</u>	TE S ma date	SPECIFIED MAY RESULT IN REJECTION OF YOu de by telegram or letter, provided each telegram of specified.	UR OFFEI or letter ma	R lfby		
See Schedule	oneu)	Net	Τ1	ncrease: \$	3,834,	.587.00		
				MODIFIES THE CONTRACT/ORDER NO. AS DE				
				ADMINISTRATIVE CHANGES (such as changes ITY OF FAR 49.103(b).	in paying o	office,		
C. THIS SUPPLEMENTAL AGREEMEN	IT IŞ ENTERED I	NTO PURSUANT TO AU	шнс	JRIT OF:				
D. OTHER (Specify type of modification	and authority)			_				
x 52.217-9 Option to	Extend T	he Term of T	he	Contract (DEC 1992)				
		sign this document and			g office.			
14.DESCRIPTION OF AMENDMENT/MODIFICATION The purpose of this modification funding; (3) incentive fee p SEE PAGE 2.	tion is t	o: (1) exerc	cis	se option year 2; (2) pro	vide			
Except as provided herein, all terms and conditions of to 15A. NAME AND TITLE OF SIGNER (Type or print)	he document refe		16 T	erence L. Haynes		e or print)		
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED	16	BB. UNITED STATES OF AMERICA Levence T. Hen	mi.	16C. DATE SIGNED		
(Signature of person authorized to sign)				(Signature of Contracting Officer)	/ *	1/28/14		

 As a result of this modification Option Year I is hereby exercised. Clause B.11 entitled, "ESTIMATED COST AND INCENTIVE FEE (1852.216-84) (OCT 1996)" is hereby Increased as follows:

_	FROM	BY	TO
Cost:			
Incentive Fee:		b(4)	
Total Funding:			

- 2. The Period of Performance is hereby extended from date of award through September 30, 2015.
- 3. Additional funding is hereby added to Clause B.13, entitled, "CONTRACT FUNDING (1852.232-81) (JUN 1990)" to the Core portion of the contract as follows:

_	FROM	BY	TO
Cost:			
Incentive Fee:		b(4)	
Total Funding:			

This allotment of funds covers performance through November 30, 2014

PR#	Accounting and Appropriation Data	Amount
4200520628	10LM020/6100.2572/10/FC000000/437673.09.10/000/ 2570/10/CASX22014D/618I/8014/150122/1/2	\$3,825,587.00
4200522240	10QA000/6100.2514/10/FC000000/951219.04.10/000/ 2510/10/CASX22014D/512F/8014/150122/1/3	\$9,000.00
Total		\$3,834,587.00

- 4. This modification provides Incentive Fee Payment for Period 3 on the CORE portion of the contract in the amount of b(4)
- 5. All other terms and conditions remain unchanged.

AMENDMENT OF SOLICITATION/MOI	DIFICATION OF CON	TPACT	1. CONTRACT ID CODE	PAGE OF	PAGES
AMENDMENT OF SOCIETIA HORMON	DIFICATION OF CON			1	3
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000026	See Block	100	e Schedule		
ISSUED BY	HQ		ADMINISTERED BY (If other than Item 6)	CODE HQ	
ASA/Godderd Space Flight eadquarters Procurement reenbelt MD 20771		i He	ASA/Goddard Space Fligh eadquarters Procurement reenbelt MD 20771		
NAME AND ADDRESS OF CONTRACTOR (AX	o., street, county, State and ZIP	Code) (x)	9A. AMENDMENT OF SOLICITATION NO.		
IGITAL MANAGEMENT INC. 550 ROCK SPRING DR 7TH F FTHESDA MD 20817-1124	LOOR		9B. DATED (SEE ITEM 11)		
		x	10A MODIFICATION OF CONTRACTIONAL NNH12CF39C	ER NO.	
			10B. DATED (SEE ITEM 13)		
ODE 3BDL8	FACILITY CODE		06/22/2012		
	11. THIS ITEM	ONLY APPLIES TO AME	NDMENTS OF SOLICITATIONS		
A. THIS CHANGE ORDER IS IS ORDER NO. IN ITEM 10A.	SUED PURSUANT TO: (S)	pecify authority) THE CH	T MODIFIES THE CONTRACT/ORDER NO. A  ANGES SET FORTH IN ITEM 14 ARE MADE  ADMINISTRATIVE CHANGES (such as char RITY OF FAR 43.103(b).	IN THE CONTRACT	
C. THIS SUPPLEMENTAL AGRE	ÉÉMENT IS ENTERED INT	O PURSUANT TO AUTH	ORITY OF:		
D. OTHER (Specify type of modi-	fication and authority)		_		
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Except as provided herein, all terms and condition  5A. NAME AND TITLE OF SIGNER (Type or page)			is heretofore changed, remains unchanged at 6A. NAME AND TITLE OF CONTRACTING Terence L. Haynes		
5B. CONTRACTOR/OFFEROR	Tai		6B. UNITED STATES OF AMERICA	116	C. DATE SIGNED
J. CONTINGIONOFFEROR	] "	IS. DATE GIONED	Bereice I, H	ropher "	0/22/11
(Signature of person authorized to sign,	)		(Signature of Contracting Officer)	/	4///

NSN 7540-01-152-8070 Previous edition unusable STANDARD FORM \$0 (REV. 16-83) Prescribed by GSA FAR (48 CFR) 53.243 1. Clause B.13 entitled, "CONTRACT FUNDING (1852.232-81) (JUN 1990)" is revised to provide incremental funding to the CORE portion of the contract as follows:

	FROM	RY	TO
Cost: Incentive Fee: Total Funding:		b(4)	

This allotment of funds covers performance through November 30, 2014

PR#	Accounting and Appropriation Data	Amount
4200525030	10CI000/6100.2572/10/FC000000/102434.01.03.01.03/ 000/2570/10/EXPX22014D/201E/8014/150124/1/2	\$439,983.86
4200524016	10KA000/6100.2550/10/FC000000/811540.09.06.10/ 000/2550/10/CASX22014D/512F/8014/150122/1/2	\$ 2,000.00
4200525649	10DM000/6100.2572/10/FC000000/383807.02.05/ 000/2570/10/SCEX22014D/728A/8014/150120/1/2	\$ 2,007.00
Total		\$443,990.86

- 2. The Period of Performance is from date of award through September 30, 2015.
- 3. Total value of the Core portion of the contract remains as follows:



4. All other terms and conditions remain unchanged.

AMENDMENT OF SOLICITATION/MODIFICA	ATION OF CONTRACT		CONTRACT ID CODE	PAGE	OF PAGES
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NASA/Goddard Space Flight Ce Headquarters Procurement Off Greenbelt MD 20771		NAS. Hea	A/Goddard Space Fligh dquarters Procurement enbelt MD 20771	t Center	
8 NAME AND ADDRESS OF CONTRACTOR (No., street, DIGITAL MANAGEMENT INC. 5550 ROCK SPRING DR 7TH FLOOM BETHESDA MD 20817-1124		98	AMENDMENT OF SOLICITATION NO.  DATED (SEE ITEM 11)  A MODIFICATION OF CONTRACT/ORDEN NH 1 2 CF 3 9 C	ER NO.	
		10	B. DATED (SEE ITEM 13)		
CODE 3BDL8	FACILITY CODE	0	6/22/2012		
	11. THIS ITEM ONLY API	PLIES TO AMEND	MENTS OF SOLICITATIONS		
separate letter or telegram which includes a reference THE PLACE DESIGNATED FOR THE RECEIPT OF C virtue of this amendment you desire to change an offe reference to the solicitation and this amendment, and	OFFERS PRIOR TO THE HOL or already submitted , such cha is received prior to the openin	UR AND DATE SPI ange may be made ng hour and date sp	ECIFIED MAY RESULT IN REJECTION OF by telegram or letter, provided each telegr ecified.	F YOUR OFFER If ram or letter makes	by
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Except as provided herein, all terms and conditions of the 15A. NAME AND TITLE OF SIGNER (Type or print)	ne document referenced in ite	16A	NAME AND TITLE OF CONTRACTING O		
15B. CONTRACTOR/OFFEROR	15C. DATE		united states of america	va a	16C. DATE SIGNED
(Signature of person authorized to sign)	<u> </u>	ا _ ح	(Signature of Contracting Officer)	pres	7/9/14
NSN 7540-01-152-8070	-			STANDARD FO	RM 30 (REV 10-83)

NSN 7540-01-152-8070 Previous edition unusable

Prescribed by GSA FAR (48 CFR) 53.243  Clause B.13 entitled, "CONTRACT FUNDING (1852.232-81) (JUN 1990)" is revised to provide incremental funding to the CORE portion of the contract as follows:

_	FROM	BY	TO
Cost:			
Incentive Fee:		b(4)	
Total Funding:			

This allotment of funds covers performance through December 31, 2014

PR#	Accounting and Appropriation Data	Amount
4200527820	10LM020/6100.2572/10/FC000000/437673.09.10/ 000/2570/10/CASX22014D/618I/8014/150122/1/2	\$2,100,820.73

- 2. The Period of Performance is from date of award through September 30, 2015.
- 3. Total value of the Core portion of the contract remains as follows:



4. All other terms and conditions remain unchanged.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE	OF PAGES	
				1	2
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	i	QUISITION/PURCHASE REQ. NO.	5. PROJECT N	NO. (if applicable)
000028	See Block 16C		4200528127		
B. ISSUED BY CO	DDE HQ		MINISTERED BY (If other than Item 6)	CODE HQ	
NASA/Goddard Space Flight Headquarters Procurement ( Greenbelt MD 20771		Hea	A/Goddard Space Fligh dquarters Procurement enbelt MD 20771		
8. NAME AND ADDRESS OF CONTRACTOR (No.,	street, county, State and ZIP Code)	(x) 9A	AMENDMENT OF SOLICITATION NO.		-
DIGITAL MANAGEMENT INC. 550 ROCK SPRING DR 7TH FI ETHESDA MD 20817-1124	OOR	9E	DATED (SEE ITEM 11)		
		x 10	A. MODIFICATION OF CONTRACT/ORD NH12CF39C	ER NO.	
		10	B. DATED (SEE ITEM 13)		
CODE 3BD18	FACILITY CODE	[c	06/22/2012		
	11. THIS (TEM ONLY APPL	LIES TO AMENDI	MENTS OF SOLICITATIONS		<del></del>
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D. OTHER (Specify type of modific					
X B.13 Contract Fund	ding (1852.232-81)	(JUN 199	90)		
E. IMPORTANT: Contractor X is n	ot. is required to sign this docu	ument and return	copies to the i	ssuing office.	
14. DESCRIPTION OF AMENDMENT/MODIFICATE The purpose of this modificate the contract.  SEE PAGE 2					ion of
Except as provided herein, all terms and conditions 5A. NAME AND TITLE OF SIGNER (Type or print		16A	eretofore changed, remains unchanged an NAME AND TITLE OF CONTRACTING Tence L. Haynes		
16B CONTRACTORIOSSERDOR	15C. DATE SI		UNITED STATES OF AMERICA	, I.	16C. DATE SIGNED
15B. CONTRACTOR/OFFEROR		IOB.	Terence L. K	James	4/21/11
(Signature of person authorized to sign)			(Signature of Contracting Officer)		1/06/17

NSN 7540-01-152-8070 Previous edition unusable STANDARD FORM 30 (REV. 19-83) Prescribed by GSA FAR (48 CFR) 53.243 1. Clause B.13 entitled, "CONTRACT FUNDING (1852.232-81) (JUN 1990)" is revised to provide incremental funding to the CORE portion of the contract as follows:

	FROM	BY	TO
Cost:			
Incentive Fee:		b(4)	
Total Funding:			

This allotment of funds covers performance through December 31, 2014

PR#	Accounting and Appropriation Data	Amount
4200528127	10MA000/6100.2520/10/FC000000/449048.08.10/ 000/2520/10/CASX22014D/618I/8014/150122/1/2	\$7,000.00
	10MA000/6100.2520/10/FC000000/449048.08.10/ 000/2520/10/CASX22014D/618I/8014/150122/1/43	\$1,500.00

- 2. The Period of Performance is from date of award through September 30, 2015.
- 3. Total value of the Core portion of the contract remains as follows:



4. All other terms and conditions remain unchanged.

A SSUED BY  CODE HQ  TADMINISTERED BY (Fresher the NASA/Goddard Space Flight Center  Readquartars Procurement Office  Greenbelt MD 20771  A NAME AND ADDRESS OF CONTRACTOR (No., Area, county, State and ZEP Code)  CIGITAL MANAGEMENT INC.  SSU ROCK SPRING DR 7TH FLOOR  CODE 3BDLS  FACILITY CODE  108. DATED (SEE ITEM 11)  The above run-pered antitation is emended as set forth in item 14. The hour and date specified for receipt of Officer Colleges and returning prior to the four and date specified for receipt of this amended of the smended of th	NO.		
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IGITAL MANAGEMENT INC.  S50 ROCK SPRING DR 7TH FLOOR  ETHESDA MD 20817-1124   FACILITY CODE  108. DATED (SEE ITEM 11)  108. DATED (SEE ITEM 12)  108. DATED (SEE ITEM 13)  106/22/2012  1198. DATED (SEE ITEM 13)  1076/22/2012  1198. DATED (SEE ITEM 13)  1076/22/2012  1198. DATED (SEE ITEM 13)  1076/22/2012  1198. DATED (SEE ITEM 13)  106/22/2012  1098. DATED (SEE ITEM 13)  1098. DATED (SEE	rement Of		
FACILITY CODE  10B. DATED (SEE ITEM 13)  0 6/22/2012  The above numbered solidation is emended as set ton's in them 14. The hour and date specified for receipt of Offers  Cliera must acknowledge receipt of this emandment prior to the frour and date specified in the solicitation or as amended, by one of them 14. The hour and date specified for receipt of Offers  Rens 8 and 15, and returning copies of the amendment (b) By acknowledging receipt of this emandment on a separate latter or talegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOW  THE PLACE DEBIGNATED FOR THE RECEIPT OF OFFERS PROR TO THE HOUR AND DATE SPECIFIED MAY RESULT BY RE  Virtue of this emandment you dealer to change an offer a releasy action to the opening may be made by telegram or latter, provide reference to the solicitation and APPROPRIATION DATA (if required)  2. ACCOUNTING AND APPROPRIATION DATA (if required)  12. THIS ITEM ORLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. IN ITEM 10A  A THIS CHANGE CRIDER IS ISSUED FURSUANT TO: (Specify acchority) THE CHANGES SET FORTH IN ITEM 14  ORDER NO. IN ITEM 10A  B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES ( approprisation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE ALTHORITY OF FAR 41,103(b)	·	).	
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D OTHER (Specify type of modification and authority)			
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News Amount of the Control of the Co		Terence L. Reynou		
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NON TISSEN 452-1070		STANDA Presiden	(ID FO(4) 33(REV. 10/63) 10 by 33(A) CFR) 53(3)	

 As a result of recent changes to the Submission of Vouchers for Payment Clause, 1852.216-87, SUBMISSION OF VOUCHERS FOR PAYMENT (MAR 1998) hereby deleted in its entirety and replace by GSFC 52.216-103 SUBMISSION OF VOUCHERS FOR PAYMENT (SEPT 2014).

# G.10 GSFC 52.216-103 SUBMISSION OF VOUCHERS FOR PAYMENT (SEPT 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. Vouchers 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 voucher payment information can be obtained at the NASA Shared Services Center (NSSC) Vendor Payment information web site at: https://www.nssc.nasa.gov/vendorpayment. For technical WAWF help, contact the WAWF helpdesk at 1-866-618-5988. Please contact the NSSC Customer Contact Center at 1-877-NSSC123 (1-877-677-2123) with any additional questions or comments.
  - (3) For interim cost voucher submissions, the vendor shall use the "Cost Voucher" document type in WAWF. In addition, the vendor shall change the contract type to "Non-DoD Contract (FAR)".

The Activity address codes to be populated in WAWF for submission of vouchers under this contract are (extension fields will not be populated):

- a. Paying Office Activity Address Code: 803112 (NSSC)
- b. Admin Office Activity Address Code: 803118 (NASA HQ)
- c. Ship To Code: 803118 NASA HQ)
- d. DCAA DoD Activity Address Code: (DCAA DoDAAC): HAA211
- e. Service Approver DoDAAC: 803118 (NASA HQ)
- f. If submitting "Final Cost Voucher," add Service Approver DoDAAC: 803118 (NASA HQ)
- (4) The Contractor shall ensure that the payment request includes appropriate contract line item descriptions of the work performed or supplies delivered, unit price/cost per unit, fee (if applicable), 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.

terence.l.haynes@nasa.gov

(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 electronically to the following address for payment:

E-mail address: NSSC-AccountsPayable@nasa.gov Mailing address: NSSC - FMD Accounts Payable

Bidg. 1111, C Road

Stennis Space Center, MS 39529 Fax Number: 1-866-209-5415

- (c) For both cost voucher and fee submissions, a concurrent copy of the voucher 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)

2. As a result of recent changes to the NASA FAR Supplement Clause I.1, is updated to include clauses 1852.203-71 —Requirement to Inform Employees of Whistleblower Rights and 1852.216-90 — Allowability of Legal Costs Incurred in Connection with a Whistleblower Proceeding, both are hereby incorporated into the contract by reference as follows:

1852.203-71 Requirement to Inform Employees of Whistleblower Rights. (AUG 2014)

1852.216-90 Allowability of Legaal Costs Incurred in Connection with a Whistleblower Proceeding. (AUG 2014)

# NNH12CF39C Modification 29

3. The following paragraph (g) is hereby added to NASA clause 1852.242-72 Observance of Legal Holidays Alternate II:

"(g)(1) If the Contractor or some or all of its employees were determined to be "non-excepted" during the government shutdown from October 1, 2013 through October 16, 2013, and (2) the Contractor directed or authorized its employees to record wages and salaries as either paid leave or leave without pay for all or a portion of the government shutdown period, and (3) for each employee for which the Contractor seeks reimbursement, the Contractor confirms that the employee was not otherwise scheduled to take leave for reasons unrelated to the government shutdown period, then the Contractor may make retroactive adjustments to their records as necessary for such non-excepted onsite employees for the period of the government shutdown, to revise such paid leave or leave without pay to an administrative leave category. Such adjustments are for the purpose of ensuring that costs incurred for such adjustments shall be without loss to the contractor. No reimbursement shall take place until the contractor demonstrates that it has actually incurred costs."

- 4. The contractor acknowledges that this action and modification to the NASA Observance of Legal Holiday Clause (Alternate II) is a <u>one-time occurrence</u>, and is not precedent for any future furlough or other work stoppage, or any instance in which the Observance of Legal Holiday Alternate II clause or any other clause may or may not be relevant in determining a contractor's ability to recover. This action is not authority for recovery for wages and salaries for periods other than the October 2013 shutdown.
- All other terms and conditions remain unchanged.

AMENDMEN	IT OF SOLICITATION/MODII	FICATION OF CONTRAC	т	1. CONTRACT ID CODE	PAGE OF PAGES
	TMODIFICATION NO.	3. EFFECTIVE DATE		QUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
	IMPOSIFICATION NO.	]	Coo	Schedule	5. PROJECT NO. (IF applicable)
000030 6. ISSUED BY	CO	See Block 160	,	OMINISTERED BY (if other than Item 6)	CODE HQ
Headquar	dard Space Flight ters Procurement C t MD 20771	Center	Неа	SA/Goddard Space Fligh adquarters Procurement eenbelt MD 20771	ht Center
DIGITAL N	ADDRESS OF CONTRACTOR (No., s		(W)	A. AMENDMENT OF SOLICITATION NO.	
	K SPRING DR 7TH FL MD 20817-1124	OOR	Ш	B. DATED (SEE ITEM 11)	
			x h	OA. MODIFICATION OF CONTRACT/ORD INH12CF39C	IER NO.
	10		1	0B. DATED (SEE ITEM 13)	
CODE 3BI	DL8	FACILITY CODE		06/22/2012	
		11. THIS ITEM ONLY A	PPLIES TO AMENE	MENTS OF SOLICITATIONS	
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	C. THIS SUPPLEMENTAL AGREEM	MENT IS ENTERED INTO PUR	SUANT TO AUTHO	RITY OF:	
	D OTHER (Specify type of modifica	ation and authority)			
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	ion of amendmentmodificationse of this modificact.	ON (Organized by UCF section	headings, including	emental funding to th	
	ided herein, all terms and conditions D TITLE OF SIGNER (Type or print)		16/	neretofore changed, remains unchanged s A. NAME AND TITLE OF CONTRACTING EYENCE L. Haynes	
15B. CONTRAC	CTOR/OFFEROR	15C. DATI		Jeneral L	16C. DATE SIGNED
	Signature of person authorized to sign)		-	(Signature of Contracting Officer)	11/12/1

NSN 7540-01-152-8070 Previous edition unusable STANDARD FORM 30 (REV. 10-89) Prescribed by GSA FAR (48 CFR) 53.243  Clause B.13 entitled, "CONTRACT FUNDING (1852.232-81) (JUN 1990)" is revised to provide incremental funding to the CORE portion of the contract as follows:

	FROM	RY	TO
Cost: Incentive Fee:		b(4)	
Total Funding:			

This allotment of funds covers performance through December 31, 2014

PR#	Accounting and Appropriation Data	Amount
4200532026	10NB000/6100.2520/10/FC000000/977657.22.10/ 000/2520/10/CASX22015D/618I/8015/160122/1/2	\$56,742.00
4200532368	10NC000/6100.2572/10/FC000000/779345.04.10/ 000/2570/10/CASX22015D/618I/8015/160122/1/2	\$31,233.20
4200533347	10MA000/6100.3121/10/FC000000/449048.08.10/ 000/3100/10/CASX22014D/618I/8014/150122/1/2	\$12,466.19

- 2. The Period of Performance is from date of award through September 30, 2015.
- 3. Total value of the Core portion of the contract remains as follows:



4. All other terms and conditions remain unchanged.

MENDMENT OF SOLICITATIO	M/MODIFIC.	die o o oddio				1 i 4
AMENDMENTAXODIFICATION NO.		3, EFFECTIVE DATE	4. REC	QUISITION/PURCHASE REQ. NO.	5. PRC	JECT NO. (If applicable)
00031		See Block 16C	4200	537719		
ISSUED BY	CODE	HQ .	7. AD	MINISTERED BY (If other than item 6)	GODE	HQ
ASA/Goddard Space F	light Ce	nter	NAS	A/Goddard Space Flight	t Cent	er
Headquarters Procurement Office		Hea	dquarters Procurement	Offic	e	
reenbelt ND 20771			Gre	enbelt MD 20771		
NAME AND ADDRESS OF CONTRAC	CTOR (No., street	l, county, State and ZIP Code)	(x) <sup>9A</sup>	A. AMENDMENT OF SOLICITATION NO.		
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SEE PAGE 2

Except as provided herein, all terms and conditions of the docume	ent referenced in item 9 A or 10.	A, as heretofore changed, remains unchanged and in full force as	nd effect.
15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type	or print)
Neysa Spence Contracts Mana	ger	Terence L. Haynes	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	168. UNITED STATES OF AMERICA	16C. DATE SIGNED
Neysa Spence Periods Source (Signature of person sutherized to sign)	1-8-15	Service L, Jacques (Signature of Contracting Officer)	1/09/18
NSN 7540-01-150-8070		STANDARD	FORM 30 (REV. 10-83)

NSN 7540-01-152-8370 Previous edition unusable

STANDARD FORM 39 (REV Prescribed by GSA FAR (48 CFR) 53.243  Clause B.13 entitled, "CONTRACT FUNDING (1852.232-81) (JUN 1990)" is revised to provide incremental funding to the CORE portion of the contract as follows:



This allotment of funds covers performance through March 31, 2015

PR#	Accounting and Appropriation Data	Amount	
4200537719	10LF020/6100.2572/10/FC000000/633023.06.10/ 000/2570/10/CASX22015D/618I/8015/160122/1/2	\$15,000.00	)

2. The purpose of this modification is to add the following clause to the contract:

Service Contract Reporting Requirements for Indefinite-Delivery Contracts

(FAR 52.204-15) (Jan. 2014)

# (a) Definition.

First-tier subcontract means a subcontract awarded directly by the Contractor for the purpose of acquiring supplies or services (including construction) for performance of a prime contract. It does not include the Contractor's supplier agreements with vendors, such as long-term arrangements for materials or supplies that benefit multiple contracts and/or the costs of which are normally applied to a Contractor's general and administrative expenses or indirect costs.

(b) The Contractor shall report, in accordance with paragraphs (c) and (d) of this clause, annually by October 31, for services performed during the preceding Government fiscal year (October 1-September 30) under this contract for orders that exceed the thresholds established in 4.1703(a)(2).

- (c) The Contractor shall report the following information:
  - Contract number and order number.
  - (2) The total dollar amount invoiced for services performed during the previous Government fiscal year under the order.
  - (3) The number of Contractor direct labor hours expended on the services performed during the previous Government fiscal year.
  - (4) Data reported by subcontractors under paragraph (f) of this clause.
- (d) The information required in paragraph (c) of this clause shall be submitted via the internet at www.sam.gov. (See SAM User Guide). If the Contractor fails to submit the report in a timely manner, the Contracting Officer will exercise appropriate contractual remedies. In addition, the Contracting Officer will make the Contractor's failure to comply with the reporting requirements a part of the Contractor's performance information under FAR subpart 42.15.
- (e) Agencies will review Contractor reported information for reasonableness and consistency with available contract information. In the event the agency believes that revisions to the Contractor reported information are warranted, the agency will notify the Contractor no later than November 15. By November 30, the Contractor shall revise the report, or document its rationale for the agency.
- (f)(1) The Contractor shall require each first-tier subcontractor providing services under this contract, with subcontract(s) each valued at or above the thresholds set forth in 4.1703(a)(2), to provide the following detailed information to the Contractor in sufficient time to submit the report:
  - (i) Subcontract number (including subcontractor name and DUNS number), and
  - (ii) The number of first-tier subcontractor direct-labor hours expended on the services performed during the previous Government fiscal year.
  - (2) The Contractor shall advise the subcontractor that the information will be made available to the public as required by section 743 of Division C of the Consolidated Appropriations Act, 2010.

(End of Clause)

- 3. This modification provides incentive Fee Payment for Period 4 on the CORE portion of the contract in the amount of b(4)
- 4. Total value of the Core portion of the contract remains as follows:



5. All other terms and conditions remain unchanged.

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All other terms and conditions remain unchanged.

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# **CLAUSE J.1, ATTACHMENT A**

# PERFORMANCE WORK STATEMENT

**FOR** 

# HEADQUARTERS INFORMATION TECHNOLOGY SUPPORT SERVICES (HITSS)

NNH12CF39C

**SEPTEMBER 5, 2014** 

**NASA Headquarters** 

**Information Technology and Communications Division (ITCD)** 

**Commented [ld1]:** Modifying the PWS in August 2014 to reflect and align with current ITCD requirements.

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# 1.0 Introduction

The Chief Information Officer in the NASA Headquarters Information Technology and Communications Division (ITCD) is providing this Performance Work Statement (PWS) on behalf of NASA Headquarters. The purpose of this Performance Work Statement is to provide a framework for information technology support services to NASA Headquarters.

The mission of NASA Headquarters is to provide overall guidance and direction to the Agency. Headquarters is organized into four Mission Directorates (Aeronautics, Exploration Systems, Science, and Space Operations), the Mission Support Directorate, and several Administrator Staff Offices, including the Chief Financial Officer, Chief Information Officer, Chief Technologist, and Chief Engineer.

The mission of ITCD is to support NASA Headquarters (HQ) by providing quality IT services, enabling HQ customers to accomplish NASA's mission. ITCD's vision is to deliver reliable, innovative and respected IT solutions. Its key organizational values are integrity, responsibility, helpfulness, effectiveness, and collaboration. As the Agency is moving forward with the NASA IT Infrastructure Integration Program (I<sup>3</sup>P), collaboration is of special importance.

The HQ IT Support Services (HITSS) Contractor is expected to:

- a. Provide expert advice and value-added guidance to Headquarters in developing cost effective solutions for its customer's IT requirements;
- Provide an IT environment that fosters development of custom applications in a robust and evolving environment and takes full advantage of industry standards and emerging technologies;
- Operate the NASA Headquarters data center environment in an efficient and effective manner;
- d. Support IT requirements that utilize specialized IT skills and knowledge of technology trends to significantly increase user productivity and efficiency;
- e. Provide excellent customer service for a variety of IT disciplines and functional areas;
- f. Incorporate IT security in all aspects of the work to ensure protection of NASA Headquarters' data and systems;
- g. Effectively collaborate with other Headquarters and Agency IT Contractors to provide seamless services to customers; and
- h. Ensure that all IT activities meet all applicable Federal, OMB, OPM, Agency, and Headquarters requirements.

The specific support services required under this contract include: planning and management of information systems; life-cycle support for applications and information systems; operation of

the NASA HQ Data Center; systems engineering and integration services; IT security; technology innovation and infusion; and customer support.

Not included within scope of this PWS are services provided through the NASA I<sup>3</sup>P initiative and the NASA Shared Services Center (NSSC). The HITSS Contractor shall collaborate and integrate with the I<sup>3</sup>P Contractors as well as the NSSC Contractor providing NASA-wide Enterprise Service Desk (ESD) and Enterprise Service Request System (ESRS) services. A high level view of the five I<sup>3</sup>P acquisitions includes the following enterprise services:

- ACES (Agency Consolidated End-user Services): End-User Services to include NASA desktops, laptops, cell phones, Personal Digital Assistants (PDAs), Agency-wide Active Directory, e-mail and calendaring functionality;
- NICS (NASA Integrated Communications Services): Communications Services to include data, voice, video, LAN and WAN services;
- NEDC (NASA Enterprise Data Center): Data Center Services to include application/data hosting and housing;
- WEST (Web Enterprise Service Technologies): Web Services to include public-facing website hosting and applications; and,
- EAST (Enterprise Applications Service Technologies): Enterprise Applications Services

   to include applications services associated with the NASA Enterprise Applications
   Competency Center and Agency-wide collaboration services including NASA's Identity,
   Credentialing, and Access Management (ICAM) in addition to new intranet environments and applications.

This PWS represents a comprehensive set of core requirements in the areas of program management, program-wide services, customer relationship management, application development and information management, NASA HQ Data Center support, systems engineering and integration, and IT security. Other related services may be required during the life of the contract to provide direct support to Mission Directorates and Mission Support organizations in the areas of dedicated system development and/or subject matter expert support. These other services will be ordered through the indefinite delivery, indefinite quantity provisions of the contract.

# 2.0 Program Management

Effective program management is the cornerstone of successful contract execution. The Contractor will be responsible and accountable for ensuring the quality and timeliness of products and services delivered under this contract. This requires technical expertise and the ability to establish technical credibility among HQ customers. However, good program management also includes, but is not limited to, the following characteristics:

- <u>Leadership</u> The Contractor's program management team should lead its team by example toward the successful accomplishment of its mission, despite the problems that any program/project will encounter. Leadership implies more than managerial skills. It includes looking ahead to see the big picture, anticipating potential problems, resolving them as quickly as possible, and providing the environment that enables the team to be successful. Commitment to excellence and respect for team members and partners are strong elements of leadership.
- <u>Communications</u> The Contractor is responsible for doing its part to facilitate productive communications among all parties, including the Government, customers, and other service providers. Open communications and transparency breeds trust and mutual respect, even if the news isn't always good news. Involving the right people in the conversations can lead to quicker problem solving and a stronger team.
- Managing Relationships Building and maintaining effective relationships with stakeholders is critical to success of this program. Stakeholders include HQ management, customers, other NASA Centers, and other service providers that depend on services performed under this contract. Managing expectations is an important component of healthy relationships – don't over-promise or under-deliver.
- <u>Teambuilding</u> A strong, integrated Government-Contractor team is supportive and proactive. Good program management includes strategies to keep the team together and working toward mutual goals.
- <u>Institutional Support</u> Although technical expertise is important, a strong organization
  with access to resources for staffing and budgeting is a critical component of effective
  program management.

Other program management requirements specific to this contract include:

# 2.1 Online Documentation Environment for Metrics, Analysis and Deliverables (On $\mbox{DEMAnD})$

Throughout the life of this contract, the Contractor shall leverage opportunities for collaboration and shall satisfy all stated deliverables and metrics that are identified throughout this PWS. The Government requires minimizing the submission of paper documents during this contract and maximizing the online discovery of and relationship between documentation, inventory assets, plans and analytical artifacts. To accomplish this, the Government expects the Contractor to establish, provide, and then continue to develop and enhance an online environment that achieves the following goals:

a. provides a secure site for Contractor and HQ personnel to collaborate in the execution of HITSS activities and to develop products. Content posted to the site shall include

- linkages to and between related deliverables and supporting artifacts, outage notifications, training documentation, technical documentation, task order documentation, security plans, baselined inventory, standard procedures, as-built drawings, processes, guidelines and DRDs (Data Requirements Documents);
- b. leverages existent authoritative data sources such as IDAMS, Solarwinds, Nagios, server logs, and configuration management databases (e.g. ROSA (Repository of Supported Applications), RAM (Rational Asset Manager), STACR (Subversion/Trac Application Code Repository)), procedural databases (e.g. SOPR (Standard Operating Procedures Repository)) and graph-based data aggregation systems (e.g. RTC CR Module (Rational Team Concert)). HQ currently has 212 SOPs in SOPR and uploads approximately 120 documents in to ROSA per month;
- establishes technical approaches, procedures, standards and mechanisms to ingest new authoritative data sources in to the On DEMAnD service;
- d. ensures visibility, at varying levels as appropriate, to project plans and management activities, including schedule, resources, milestones, and trending sufficient to discuss alternatives or priority tradeoffs;
- e. contains current information as well as history of key areas to determine risks, mitigations and areas for improvement;
- f. can be leveraged as the environment to ingest data from authoritative sources outside of HQ for the purpose of activity reporting (e.g. On Boarding);
- g. manages service requests by utilizing on-line tools that enable users to initiate and track them through an online system, and integrates this system with the NSSC's Enterprise Service Desk and Enterprise Service Request System;
- h. is accessible, at varying levels as appropriate, via web browsers to the Contracting Officer's Technical Representative (COTR), Contracting Officer (CO), ITCD Performance Monitors, Mission Directorate and Mission Support Task Managers, and other HQ personnel;
- contains financial reporting, task order management, invoicing and similar business information from the contractor's business system;
- j. provides ability to view documents and analysis and an option to download;
- k. is searchable, sort and retrievable by relationships and/or by common attributes;
- provides an index and explanations of variances for metrics falling outside the minimum standard; and
- m. provides visibility into all aspects of technology updates including schedules for quarterly refresh, bi-annual technical infusion, prototypes, pilots, and plans.

DRD	Description	Frequency
DRD #1	Documentation environment	Updated and available weekly
	of metrics, analytics and	during the first two months of
	deliverables implementation	contract start date; enhancements
	plan and migration schedule.	and additional content added
		monthly thereafter until established
		baseline schedule is met.

#### 2.2 Contract Transition and Stabilization

The contract transition and stabilization period will be from contract award and continue for six months. There are several plans, reports and reviews the government requires during the first 6 months of the contract and theses activities shall be well coordinated, tightly integrated, and professionally implemented. The goals will be to provide uninterrupted services to our customers, continuous visibility in to the performance of transition activities, and continued improvement.

Technical performance incentives for the first six months of the contract will be focused on five overarching plans that are foundational to the success of contract transition and stabilization activities and the continued success for the duration of the contract. The plans are:

- Application Service Framework
- Application Service Roadmap and Implementation Plan
- Data Center Modernization Plan
- Legacy Application Disposition Plan
- Training Program and Outreach Plan

These plans along with a successful closure of actions from the ORR and with customer satisfaction surveys from key stakeholders will form the basis of the incentive fee available.

In support of contractor transition activities the contractor shall:

- a. deliver a detailed integrated schedule depicting status for each of the discrete transition activities;
- b. ensure uninterrupted service delivery from data center assets;
- c. ensure uninterrupted IT security surveillance and services;
- d. ensure software, hardware, application and similar maintenance and license agreements are covered and transitioned;
- e. ensure application development activities are uninterrupted and that software development assets are transitioned to assure that development effort schedules are maintained;

- f. ensure projects in development are transitioned in a manner where customer satisfaction will be maintained or improved;
- g. ensure Operational Level Agreements (e.g. with the NASA Data Center, ACES, NSSC) and Task Orders are signed and in place;
- h. ensure customer outreach and communication activities are maintained or improved; and
- i. ensure DRDs and plans are delivered and available.

DRD	Description	Frequency
DRD #2	Transition plan and	Available at contract start date with
	integrated schedule	significant weekly updates for the
		transition period up to Operational
		Readiness Review and acceptance.

Metric	Description	Performance Level to Achieve Fee
Metric #T&S-1	Completion of Actions from Operational Readiness Review (ORR). Outstanding actions from the ORR shall be completed within the required time period.	90% - 95% of the actions are completed by the due date.
Metric #T&S-3	Stakeholder Satisfaction with Transition and Stabilization. Stakeholder ratings from transition shall be no less than a "4" on a scale of 1-5 with "5" being the highest.	91%-94% meet the criteria.

#### 2.3 Program Management Reports and Reviews

A goal for the ITCD and HITSS team is for management and staff to be aware of program/project status on a continuous basis facilitated by precise, accurate and timely reporting and reviews. In addition to face-to-face meetings, the Contractor shall provide and promote online postings of current knowledge products in an orderly and intuitive manner and minimize the need to generate and email products for distribution. The success of this service should minimize issues of versioning, multiple email attachments and enable meetings to focus more on details of status, issues, initiatives and opportunities. To support specific meeting requirements the Contractor shall:

- a. provision scheduling, invitation lists, and accurate documentation of minutes and actions;
- b. plan, operate and support daily operational status tag-up meetings to brief the team on previous day's issues/status and current day's plans, review of escalated Service Requests (SRs), status of critical operational issues;
- c. plan, operate and support weekly Configuration Control Board (CCB) meetings to review Services Requests, Preliminary Design Reviews (PDR), Critical Design Reviews (CDR), and Operational Readiness Reviews (ORR) status, changes to the baseline, issues of cross-Contractor or cross-service support and similar CCB functions; and
- d. plan, operate and support monthly program meetings, and other forums/reviews as required to ensure focus on specific issues requiring leadership attention and coordination such as project risk versus planned, priority adjustment requests and analysis, outstanding critical project or program issues.

DRD	Description	Frequency
DRD #3	Contract Status Meeting.	Monthly – no later than last week
		of the month.
DRD #4	Daily Tag Up Review.	Daily.

# 2.3.1 Plan Development

A plan gives the government and the Contractor a mechanism to achieve desired results. It must be fact-based, implementable, and sustainable. As such, all plans delivered shall:

- a. align with an identified goal or goals that have previously been concurred in by the Government;
- b. identify the required skills needed;
- state that overall implementation can be accomplished within the estimated cost of the contract, or includes an estimated cost and basis of estimate (must provide both to successfully meet this element);
- d. discuss technology maturity that can be supported within the current or projected NASA IT infrastructure;
- e. include 5-10 quantifiable short-term objectives that will be accomplished over the succeeding six months (does not apply to the Application Service Framework); and
- f. be delivered and available on or before the due date.

Metric	Description	Performance Level to Achieve Fee
Metric #T&S-2	Content of Selected Initial	86%-92% of the required elements
	Plans. The following Initial	are included.
	Plans will include the	
	required elements specified	
	in the PWS and IFQAP:	
	-Application Service	
	Framework	
	-Application Service	
	Roadmap and	
	Implementation Plan	
	-Data Center Modernization	
	Plan	
	-Legacy Applications	
	Disposition Plan	
	-Training Program and	
	Outreach Plan	

#### 2.3.2 Plan Updates

Plans are often subject to new requirements, new constraints, and new technology opportunities. To effectively manage our workload, all plans shall be kept up to date and the relative priorities of plans shall be reflected in a Program-wide integrated schedule. All plan updates shall:

- a. be kept current reflecting changes within 48 hours of project scheduled updates and approved re-baselined activities;
- b. be reflected to the second level milestone in a Program-wide integrated schedule to the second milestone level; and
- c. adhere to the plan's objectives unless variances are approved.

Additionally, the five overarching plans shall:

- align with an identified goal or goals that have previously been concurred in by the Government;
- e. identify the required skills needed;
- f. state that overall implementation can be accomplished within the estimated cost of the contract, or includes an estimated cost and basis of estimate (must provide both to successfully meet this element);
- include specific actions taken during the past six months, and associated results, that definitively demonstrate that the objectives from the previous update or plan have been accomplished;
- h. includes 5-10 quantifiable short-term objectives that will be accomplished over the succeeding six months; and
- i. be delivered and available on or before the due date.

Metric	Description	Performance Level to Achieve Fee
Metric #1	Content of Selected Initial	83%-95% of the required elements
	Plans Updates. Semi-annual	are included.
	updates to the following	
	Plans will include the	
	required elements specified	
	in the PWS and IFQAP:	
	-Application Service	
	Framework	
	-Application Service	
	Roadmap and	
	Implementation Plan	
	-Data Center Modernization	
	Plan	
	-Legacy Applications	
	Disposition Plan	
	-Training Program and	
	Outreach Plan	
Metric #2	Accomplishment of Plan	81%-92% of the objectives are
	Objectives. All objectives	completed.
	identified in the semi-annual	
	updates to the following	
	plans will be met:	
	-Application Service	
	Roadmap and	
	Implementation Plan	
	-Data Center Modernization	
	Plan	
	-Legacy Applications	
	Disposition Plan	
	-Training Program and	
	Outreach Plan	

# 2.4 Integrated Master Schedule

The Contractor shall develop and maintain an ITCD Integrated Master Schedule (IMS) of all ongoing and planned activities. The primary purpose of the ITCD IMS, for use by the Contractor and Government, is to provide a day-to-day tool for executing the HQ IT Program, tracking individual project technical and schedule status sufficiently to depict any significant risks and priority trade-offs. It also serves to strengthen the effectiveness of Contractor/Government communications, providing an early warning system of issues and concerns regarding critical projects. The Contractor shall:

- a. when specified by the COTR, include those projects for which the Contractor is not primarily responsible;
- b. create and maintain the IMS using a scheduling tool that utilizes features such as resource loading and project dependencies to facilitate accuracy in reprioritization scenarios;
- c. enable alternate categorization views that group projects by strategic portfolio, by department, or resources;
- d. provide secure web access to the IMS for NASA and Contractor project management leads:
- use IMS briefings to ITCD staff, including progress assessments, identification of problems and workarounds, and a discussion of critical path activities and urgent priorities; and
- f. provide schedule adherence data that summarizes schedule performance for all milestones to include reporting of project re-baselines with explanations.

DRD	Description	Frequency/Standard
DRD #5	Integrated Master Schedule	Updated every 2 weeks from month
	with ability to drill down to	two of contract start date.
	supporting data, including	
	resource loading.	
DRD #6	Project Schedule Adherence	Monthly – no later than second
	Report.	week of the month.

Metric	Description	Performance Level to Achieve Fee
Metric #3	Adherence to Project	94% - 97% meet the criteria.
	Schedules. For all Service	
	Requests completed during	
	the evaluation period, all end	
	dates shall be met in	
	accordance with the baseline	
	schedule.	
	•	

# 2.5 Project Management

Effective coordination and implementation of tasks is critical to the management of multiple activities of different sizes and types. The Contractor shall implement project management tools and techniques for measuring progress and to achieve successful completion of project goals and objectives.

**Commented [Id2]:** DMI requests that the frequency be changed to 2 months from contract start and submitted the  $6^{\rm th}$  and  $20^{\rm th}$  of every month. ITCD needs to understand the LOE involved in creating and maintaining the IMS before it can modify the frequency requirements in the PWS.

Commented [Id3]: Removed "new". This way, the metric reference here in the PWS is consistent with the Incentive Fee Plan

The Contractor 's activities shall be consistent with NASA Procedural Requirements (NPR) 7120.7, NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements.

ITCD requires project management and tracking support for both internal and external projects. Internal projects are projects that are directly assigned to the Contractor by ITCD. An internal project could be a project sponsored by any HQ office and have a significant IT content. In providing this support, the Contractor shall use the governing documents specified by the requiring HQ office.

External projects are projects where the implementation lead is not the HITSS Contractor but where the Contractor shall be responsible for coordination, participation, or analysis. The Contractor shall provide comments and recommendations to HQ on project plans prepared by other Contractors and other NASA Centers, the Office of the CIO, or other Government agencies.

#### 2.6 Risk Management

The Contractor shall identify and characterize IT-related risks, devising mitigation steps, and monitoring risks and mitigation activities on an ongoing basis. The Contractor shall provide support in drafting, for NASA consideration, risk management plans associated with IT investments. The requiring office will specify the format and overall requirements for the risk management activities, including the risk management plan. Those requirements shall be consistent with NASA policy concerning risk management. Currently, the following policy documents are relevant to this activity: NPR 8000.4 (Risk Management Procedural Requirements), Procurement Information Circular (PIC) 99-09 (Risk Management), NPR 7120.5 (NASA Program and Project Management Requirements and Processes), and NPR 2810.1 (Security of Information Technology).

#### 2.7 Quality Assurance

The Contractor shall ensure the quality of Contractor provided products and services. The Contractor is responsible for assuring conformance of products to requirements, methods, and standards established by NASA, including verification and validation of products and services delivered under this contract. This shall include software assurance for all applications development activities. The Contractor shall provide, implement, and maintain a quality assurance process that includes plans and procedures to ensure that products and services delivered conform to contract requirements, reflect industry best practices, and are consistent with a lifecycle approach.

#### 2.8 Logistics, Property Management, and Asset Management

The Contractor shall maintain accurate asset records for all Government property for which the Contractor is responsible. This includes but is not limited to hardware, hardware maintenance, software, and software licenses. The records in the NASA property management application (e.g., N-PROP) shall be kept up to date. The Contractor shall conduct periodic inventories and

**Commented [Id4]:** Equipment management was added to address issues with reassigning laptops, phones, etc utilized by HITSS staff.

adhere to the pertinent provisions and procedures of the most current NASA property management regulations. The contractor shall describe how they will meet the requirement and process for managing the onsite government property, government furnished equipment, and contractor acquired property. The Contractor shall, based on original quantity of inventory items, maintain lost property rate at 0.25% or less per year.

The contractor shall report inventory of asets and equipment such as, but not limited to, laptops, mobile devices, printers, external drives, etc. assigned to each contractor employee. The inventory recorded will be reported to support asset management.

DRD	Description	Frequency
DRD #7a	Logistics Management Plan.	Three months after contract start
		date.
DRD #7b	Asset Inventory	Monthly

#### 2.8.1 Support for Onsite Contractors

The Government shall provide office, desk and associated infrastructure to house up to 28 contractor employees for onsite support of the core requirements at NASA Headquarters. This includes, but is not limited to required onsite support in the following functional areas: Data Center Operations, Systems Engineering and Integration Test Facility, Video Teleconference Systems Support, Computer Training Center, and Communications Security Support and Services (COMSEC). Additional office space may be made available for support of task orders under the IDIQ portion of the contract.

#### 2.9 Contractor Training

The Contractor is responsible for all technical training of Contractor staff, unless otherwise directed by the Government. The Contractor shall provide technical staffing proficient in the tools and technologies utilized and supported under this contract. The Contractor may seek an exception when directed to implement a new technology and it is in the Government's best interest to utilize existing contract staff.

# 3.0 Program-wide Services

A goal of this contract is to provide an approach that will provide exceptional support across the program. Program-wide Services are those support activities that traverse all functional areas including; Enterprise Architecture, Concept of Operations, Problem and Incident Management,

Commented [Id5]:
Commented [Id6]: New

Commented [Id7]: New
Commented [Id23]: New

**Commented [Id8]:** Based on low utilization, ITCD is removing the URC requirement.

Change Management, Configuration Management, Safety, and Records Management. Customer Relationship Management and Service Delivery (section 4) are crosscutting for HITSS and extend to Agency Service Requests and Help Desk Management.

#### 3.1 Enterprise Architecture

Enterprise Architecture (EA) is a comprehensive framework being used to manage and align NASA's Information Technology (IT) portfolio with its operational characteristics. The EA defines how information and technology will support the business operations and provide benefit for the business and illustrates an organization's core mission and each component critical to performing that mission. Critical components of the EA include:

- · Guiding principles
- Organization structure
- Business processes
- Stakeholders
- · Applications, data, and infrastructure
- Technologies upon which networks, applications and systems are built, and
- Security plans associated with these applications and systems.

# 3.1.1 HQ Enterprise Architecture Program

It is the mission of the NASA HQ Enterprise Architecture Program to engage stakeholders to better understand their mission requirements, and then apply architecture methods, tools, and products to produce higher fidelity information that improves their integrated planning, decision-making, and service delivery. The Contractor shall support NASA in developing and maintaining an architecture that is mission enabling, integrated and efficient. Subject to the issuance of service requests, the Contractor shall:

- a. in conjunction with ITCD, engage stakeholders to proactively seek to understand their business challenges and needs before enabling architectural decisions;
- b. act collaboratively to promote Agency-wide interaction in everything that it does;
- c. foster transparency by making all of its decisions and artifacts available for Agencywide consumption as is practical given security constraints and stakeholder concerns;
- d. be agile so that it can respond quickly to changing business priorities, requirements, and demands from internal and external stakeholders;
- communicate effectively to foster understanding about the role that enterprise architecture plays in enabling the stakeholder to meet its goals;

- f. value diversity when as it seeks to facilitate building a consensus between NASA stakeholders in developing and gaining buy-in to future state architectures, implementation plans, projects, and operations;
- g. build trust by ensuring all of its activities are aligned and in support of our stakeholders' needs;
- h. promote innovation by providing visibility into how new technologies can be applied,
- demonstrate competence in their broad understanding of the NASA business environment, and how the strategic use of IT can help enable business achievement,
- j. capture and maintain the elements of the Current State Architecture used in determining gaps with the Future State Vision and obtains consensus with the Agency's stakeholders; and
- k. develop the Future State Vision and maintain the Current State Architecture in the same general format to enable comparisons, gap analysis and trending data reporting.

The Current State Architecture does not attempt to document everything. Only the information that is necessary to make strategic decisions are documented and/or maintained. When persistent data is required, maintenance should be a matter of process and not a discrete activity.

The HQ Enterprise Architecture Team expects the Contractor to adhere to EA overarching principles. The Contractor shall:

- a. integrate Enterprise Architecture throughout the business lifecycle and not as a discrete activity or independent activity;
- b. provide enhanced understanding for decision makers to make informed decisions;
- use Enterprise Architect as a strategic tool before decisions are made so that the
  decisions are founded in logic based on the Agency's vision, Strategic Plan, customer
  requirements and current assets; and
- d. employ Enterprise Architecture as a distributed responsibility; many domains of expertise influence all areas of architecture development.

It is anticipated that NASA will have an EA program plan baselined by the start of the HITSS contract and each NASA center will have an EA plan consistent with the Agency direction. The HITSS Contractor shall:

- a. adopt the HQ center EA plan and make recommendations for improvement within the first 240 days of contract award; and
- b. maintain, update and assure alignment with the Agency EA plan and with the EA plans from other NASA centers to most appropriate level.

DRD	Description	Frequency
DRD #8	HQ Enterprise Architecture	8 months after contract start date.
	Plan Updates.	

# 3.2 Operational Level Agreements

The Contractor shall develop Operational Level Agreements (OLAs) as necessary with other Contractors (e.g., I<sup>3</sup>P Contractors and other HQ Contractors) to ensure clarity regarding availability, responsiveness, functionality and return to service. To provide transparency to NASA customers and providers, OLAs shall be in a consistent format, be published and available. Variance reporting is required as needed.

DRD	Description	Frequency
DRD #9	Operational Level	Initial set due 3 months after contract
	Agreements.	start; subsequent due in accordance with
		Government schedules.

#### 3.2.1 Problem and Incident Management

The Contractor shall implement and sustain Problem and Incident Management Processes in accordance with the NASA OCIO ITIL implementation strategy. The contractor shall implement and sustain Problem and Incident Management Processes with the goal of preventing problems and resulting incidents from happening. The purpose of Problem Management is to provide a pre-defined and approved process for managing the lifecycle of all problems to include diagnosis, determination of resolutions, implementing solutions through appropriate control and change management procedures, trending and preventing problem recurrence. The purpose of Incident Management is to deal with all unplanned interruptions to an IT service or a reduction in the quality of IT service. This can include failures, questions or queries reported by users via telephone, email, face-to-face, or automatically detected and reported by event monitoring tools. The primary goal of Incident Management is to restore normal service operation as quickly as possible, minimize adverse impact on business operations, document sufficiently to facilitate substantive analytics (e.g. root cause), and ensure that the best possible levels of service quality and availability are maintained. The contractor shall implement and sustain a work management tracking system to ensure effective Problem and Incident Management. The contractor shall be responsible for:

- a. designing and implementing Problem and Incident Management procedures;
- identifying problems by proactively performing on-going trend analysis on Incident information:
- c. documenting, tracking and managing all problems and incidents;
- d. investigating and diagnosing problems in collaboration and coordination with Government, I<sup>3</sup>P contractors and other contractors;
- e. retaining ownership of each problem/incident assigned by either the Enterprise Service Desk or Government Service Integration Management (SIM) office;
- f. validating problem workarounds;

- g. maintaining regular communications between all parties to include ITCD, HQ users, the Enterprise Service Desk, the Service Integration Management office, and other NASA contractors as appropriate;
- h. performing Root Cause Analysis and as appropriate develop Corrective Action Plans;
- resolving problems/incidents in collaboration and coordination with ITCD and other NASA contractors such as I<sup>3</sup>P contractors.

DRD	Description	Frequency
DRD #10	Report on response times, ticket aging, and customer satisfaction, delivered.	1 month after contract start date and monthly after that.
DRD #11	Root Cause Analysis and Corrective Action Plan.	As requested by ITCD.

The following metrics are associated with Problem Management during Prime Time hours:

Metric	Description	Performance Level to Achieve Fee
Metric #4	Incident Ticket Response Time. Resolve incident within 3 business days, and contact user of completion within 4 hours upon receipt of unsatisfactory customer survey.	Meet metrics 93%-96% of the time.
Metric #5	Prime Time Password Resets. Respond to application password reset requests during Prime Time hours within 30 minutes and accomplish resets within 60 minutes of the time the ticket is dispatched to Account Administration.	Meet metrics 90%-95% of the time.
Metric #6	Restore Prime Time Service Outages for Applications and Servers. For service outages affecting more than one person, respond within 5 minutes with daily updates provided until the outage is mitigated.	Meet response and mitigation metrics 90% - 95% of the time.

Metric #7	Resolve Prime Time Application	Meet response and mitigation metrics
	and Server Hardware and	90% - 95% of the time.
	Software Problems. For reported	
	hardware and software problems,	
	respond within 30 minutes with	
	a fix accomplished within 12	
	prime-time business hours.	

# 3.3 Configuration Management

Configuration management (CM) is critical to HQ's complex integrated IT environment as it provides process and products that assure or aid in the clear and accurate understanding of our IT assets, their function (services provided, etc.), their form (platform, OS, etc.) and their fit (location, reliance, dependency, etc). Accurate CM is the cornerstone for efficient operations, effective IT Security, and agile adaptation to change. The contractor shall maintain and enhance the HQ's CM program, incorporating all practical portions of the existing ITCD CM practices and adapting and modifying the program as new conditions and requirements arise.

A motivating driver for a quality CM program is to assure appropriate rigor is applied to project execution and that changes to the infrastructure do not adversely or unexpectedly impact services, costs, or inhibit strategic goals. It essential that the review processes (e.g. Service, Request Review Team. Service Requirements Review, Preliminary Design Review, Critical Design Review, Test Readiness Review and Operational Readiness Reviews) are adhered to and that documentation is accurate, current, and complete (e.g. Systems Description Document, Version Description Document, Change Requests Documents, Security Review Documents, Design Specification and Requirements Specification).

One of the CM goals is to communicate our baseline and our changes to a wider community. NASA HQ has several repositories that provide essential infrastructure information for systems and services. These repositories consist of the HQ Applications ROSA, SOPR, STACR, and IBM Rational as well as Agency wide repositories such as DDI (DNS, DHCP, IPAM) and IDAMS (IT Discovery and Application Mapping Service). Because the monitoring of infrastructure and services is reliant on the accuracy of the source data, the contractor shall ensure that the sources are maintained, kept up-to-date and ensure secured web access to baseline documentation, linkages to procedures, linkages to applications and the ability to view from system, service, customer, portfolio and other query vectors.

#### 3.3.1 Configuration Management Plan

The Configuration Management Plan may require updates to adapt to new processes, organizational structures or technologies. The contractor shall maintain and enhance the existing IT Configuration Management Plan that describes how CM shall be maintained and how new capabilities will be implemented across the contract including ease of availability and search for baselined and version controlled documents, as-built drawings, change packages, Standard Operating Procedures, Policies, Interfaces, Agreements and other artifacts which collectively comprise the HQ IT Architecture.

DRD	Description	Frequency
DRD #12	Configuration Management Plan.	Update as required by ITCD.

# 3.3.2 Configuration Control Board Support

The Configuration Control Board (CCB) is an open meeting that invites participation from our customers and providers. In support of ITCD's administration of the CCB, the contractor shall support approximately 270 milestone reviews per year half of which are formally presented at CCB and half are reviewed "out of board" via email. Additionally, the contractor shall:

- a. set up meeting rooms, maintain notification lists, provide supporting material and schedules, and provide CCB minutes posted within one (1) business day assuring completeness and accuracy of documentation;
- b. ensuring integration of all HQ contractors and customers into the process;
- c. compiling, coordinating, providing and in executing the agenda for the CCB;
- d. management, coordination, execution and reporting of the review processes (e.g. PDR, CDR, TRR, ORR);
- e. management, coordination, execution and reporting of the requirements processes to assure consistency, completeness and alignment; and
- f. supporting new requirements to integrate change process and configuration control with the NASA Data Centers at JSC, the NASA Enterprise Applications Competency Center, the NASA Shared Services Center (NSSC), and potentially other NASA, Government, and commercial service centers.

DRD	Description	Frequency
DRD #13	CCB Meeting Minutes.	Weekly – 1 day after meeting.

3.3.3 NASA HQ Data Center Configuration Management

**Commented [Id9]:** ITCD changed this to be consistent with the language in section 3.3.2 requirements.

The contractor shall perform CM of all data center hardware and supporting infrastructure, operating system software, as well as standard operating procedures and documentation developed or maintained by and for the HQ Data Center. The contractor shall process and execute successfully approximately 200 change requests per year (approximately 12 change packages 'in-work' at any time). Specifically, the contractor shall:

- a. keep this documentation up-to-date within 2 business days;
- securely store and make continuously available to NASA management and the HQ IT Security team administrative passwords and similar credentials contained in the data center safe:
- maintain and provide visibility to an inventory of systems, appliances and subsystems that are part of the Data Center and the Systems Engineering Facility and similar physical assets:
- maintain and provide visibility to an inventory of spare parts sufficient for emergency repairs; and
- e. maintain written detailed documents at the same levels that reflects the current configurations of servers, cable distribution, rack distribution, inventories, licenses, systems descriptions, and changes.

DRD	Description	Frequency
DRD #14	Spare Parts Inventory	3 months after contract start date,
	Report.	quarterly thereafter.

# 3.3.4 Application Configuration Management and Version Control

To aid application sharing and code re-use and to mitigate risk of loss or loss of continuity to the government, the contractor shall use a NASA hosted code library as HQ's single authoritative source for the development, packaging and release of application software developed at HQ. The contractor shall assure that all application packages and versions are entered and maintained in the HQ Subversion (SVN) /Trac system (aka STACR) service and is available to all of their developers, designated NASA employees and that index and inventory data is available for query outside of the SVN system.

# 3.3.5 Catalog of Current Software Applications

The contractor shall use the NASA-provided and approved application asset repository, and update, augment, validate, and maintain current the HQ's catalog of application assets (those in development, production, or archived locally). Specifically, the contractor shall:

 a. document requirements, design, code, test scripts, planned test results, actual test results, number of customers, software version, version description documents, all current fields in the application documentation in the HQ documentation repository (ROSA);

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- b. inventory all HQ applications regardless of host or network (e.g., mainframes, virtualized hosts, etc);
- inventory all sites and web applications that are developed and maintained by the contractor;
- RAM will be kept current and documentation shall be posted within 24 hours as CCB milestones and related activities are completed;
- e. report changes to RAM via an automated method, provision a quarterly summary view; and
- f. provide both machine-to-machine and human access.

DRD	Description	Frequency
DRD #15A	Summary of updates to RAM	One time deliverable due with Data
	showing what was created.	Migration Plan for RAM.
DRD #15B	Summary of updates to RAM	Available quarterly after RAM
	showing what was created and	Implementation
	modified over previous 3	
	months	

# 3.3.6 Diagrams of Applications, Services, Servers and Networks

Diagrams of our services are an important asset for analysis, modeling, problem solving and conveying ideas. Graphic depictions will be used by NASA and contractor management staff in order to visualize the relationships between and the characteristics of the various production software applications, services and hardware and will be reused to generate analysis, code, and work-flows. Graphic representations need to be accurate and versioned. Each should retain sufficient annotation. They can be computer generated but must be available in formats that lend themselves to editing and reuse and not only in static (jpg) format. Generating these diagrams is an important part of our overall CM service. The contractor shall:

- a. provide, update, augment, validate, and maintain current graphic depictions of logical and physical connectivity and relationship (e.g. communication paths) of servers, services and functions of all supported hardware and software within the NASA HQ facility or tied logically to HQ services (e.g. a network extending to another building);
- b. graphically illustrate the various supported production applications, their interfaces among themselves, get versus pull, logic and services;
- provide ability to link graphic representations together when browsing between logical and physical representations;
- d. be web viewable and editable regardless of OS;

Commented [Id10]: Removed ROSA and added RAM.

Commented [Id11]: Removed ROSA and added RAM.

Commented [Id12]: Removed ROSA and added RAM.

- e. indicate authorship, validation, revision and currency and adherence to proper names of applications and services for data consistency and to provide machine assisted linkages;
- f. be linked to similar relevant supporting documentation; and
- g. be discoverable by search or query of the similar systems, applications, hosts or services.

DRD	Description	Frequency
DRD #16	Diagrams of Application logic, connectivity, interdependence and data flow.	90 days after contract start date and update continuously.
DRD #17	Diagrams of Server dependencies (sinks/sources), physical placement and relationship.	Draft 90 days after contract start date; 6 months final; and update continuously.

# 3.4 NASA IT Infrastructure Library (ITIL) Version 3 Approach

As the Agency Chief Information Officer's (OCIO's) vision is to use Version 3 of the ITIL framework as the NASA IT operational model, the Contractor shall be capable of implementing elements of this model at HQ. ITIL version 3.0 focuses on Service Management and seeks to align IT with business objectives. ITIL version 3.0 outlines a set of integrated processes that encompass the full scope of the IT service lifecycle. By defining a common set of ITIL version 3.0 aligned processes, HQ strives to attain maximum efficiencies while ensuring seamless, integrated services for IT customers. The contractor shall, at a minimum, support the ITIL-3 processes as they are implemented in accordance with the OCIO.

- Incident Management
- Problem Management
- Request Fulfillment
- Change Management
- Configuration Management

## 3.5 Safety

Safety for NASA's civil service and contracted employees is a top priority. The contractor shall implement and maintain a comprehensive safety, housekeeping, and health program for all assigned areas and activities. In this regard, the contractor shall:

- a. develop, submit, implement, and maintain a Safety and Health Plan. The contractor shall submit reports on occupational injuries and illnesses experienced by contractor personnel in an Occupational Injuries and Illnesses Report;
- comply with applicable NASA safety standards and reporting requirements, and ensure that the proper handling and/or disposition of hazardous materials and waste are observed;

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- c. conduct quarterly, and unscheduled, safety inspections of the NASA HQ Data Center, and other areas in the HQ building or other HQ facilities that are administered by the contractor. The results shall be reported to the COTR and the HQ Safety & Occupational Health Manager as part of the Occupational Injuries and Illnesses Report; and
- d. conduct periodic safety and health training for all contractor employees, and promptly report matters of concern to the COTR and CO. The contractor is encouraged to make recommendations and to actively participate in supporting NASA in improving the safety and health environment of HO in addition to the contractor's facilities.

Data Center and Systems Engineering & Integration (SE&I) Lab facilities shall be neatly organized and kept clean at all times. The contractor shall:

- a. report any safety issues related to the Data Center and coordinate all activities to resolve them; and
- b. maintain strict and orderly computer rack and wire distribution, maintain continuously updated "as-built" diagrams and maps of the HQ Data Center and be responsible for a clean, clutter free, professional environment.

DRD	Description	Frequency
DRD #18	Health & Safety Plan.	Submit with Proposal; update if
		directed.
DRD #19	Occupational Injuries and	One month from contract start and
	Illnesses Report.	monthly thereafter.

### 3.6 Records Management

The contractor shall maintain data qualifying as Federal records in compliance with Federal and Agency records requirements as required by the Federal Records Act, 44 U.S.C. §§ 3101 et seq. as codified in 36 CFR 1220-123 and including Federal Enterprise Architecture (FEA) Records Management Services functional requirements. NASA HQ owns the rights to all electronic information (electronic data, electronic information systems, electronic databases, etc.) and all supporting documentation created as part of this contract. In support of Records Management the contractor shall:

- a. effectively and efficiently manage records, regardless of format or media (including paper, microform, electronic, and audiovisual);
- b. preserve, maintain, and only dispose of NASA records in accordance with authorized retention schedules such as NPR 1441.1, NASA Records Retention Schedules and the National Archives and Records Administration's General Records Schedules. Destruction of any Federal records, regardless of format, without an approved schedule is a violation of Federal law:
- where the contractor develops or provides systems or applications, the contractor shall
  ensure that records management and records archival functions are addressed in the
  requirements phase for the design, development, and implementation of new or
  significantly revised information systems;

**Commented [Id13]:** Itcd removed this requirement for FY15

- d. ensure systems protect the trustworthiness of electronic records, including their reliability, authenticity, integrity, and usability to meet its internal business and legal needs, as well as external regulations and requirements; and
- e. for systems or applications created or supplied by the contractor that contain Federal records, sufficient technical documentation of the system or application such as design and maintenance records are Federal records and shall be managed as such.

# 4.0 Customer Relationship Management

A goal of this contract is to provide IT services that enable HQ employees to conduct their business effectively and efficiently. A key component of delivering successful services is establishing and maintaining good customer relationships. To plan, establish, and manage these relationships, the contractor will support the development and implementation of a customer relationship program. The program includes identification of key stakeholders and change agents, customer communication, customer business process knowledge, customer problem tracking and mitigation, customer training, and identifying and facilitating customer solutions. The contractor shall serve as an agent for ITCD and simultaneously serve as a customer advocate. The contractor shall work with customers under the direction of ITCD to identify problems, opportunities, requirements, and risks. In collaboration, ITCD and the contractor shall identify solutions and mitigation strategies to deliver effective IT solutions geared to customer's requirements. Contractor employees may at times be the first point-of-contact for HO customers. In all instances of customer contact, contractor employees shall adhere to an approach that "One call does it all". Accordingly, when a customer makes an initial request to the contractor, the contractor shall ensure the request is routed to the appropriate service provider correctly (regardless of contract vehicle), communicated to and, if required, approved by ITCD Customer Service Managers. If the HITSS contractor is responsible for completing the action, the contractor shall make contact with the customer to provide periodic updates and ensure that the action was completed to the customer's satisfaction.

### 4.1 Customer Service Model

The contractor shall provide a consolidated approach to delivering a comprehensive range of end user support services for HQ employees.

Essential for building a strong relationship with customers is an effective Customer Service Model that focuses on understanding customer requirements and values and consistently monitors customer feedback for signs of problems or difficulties. The contractor shall implement a customer service model that:

- a. is perceived by each individual customer as competent, responsive, and timely
- supports all ITCD programs, projects, and services. Contract staff shall identify themselves as contractors representing all ITCD programs, regardless of where the end service is provided;
- c. anticipates issues, concerns, and problems and preemptively initiates resolution;

- d. encourages and facilitates customer self-sufficiency;
- e. effectively develops and disseminates information regarding available services and technologies, system outages, new initiatives, etc.;
- f. effectively coordinates with ITCD Customer Service Managers, HQ Organizational IT Points of Contact, Task Managers, the Enterprise Service Desk, and other contractor Customer Service representatives to provide a uniform approach to customer service;
- g. understands the evolving IT requirements of the customer;
- h. coordinates with ITCD to ensure recommendations and approaches can be supported;
- i. coordinates with IT Security to ensure any recommended solution or changes are secure;
- j. provides a method, subject to NASA approval, to obtain after-hours emergency support (defined as support for senior NASA officials, time-sensitive critical action, or a service interruption that involves a significant percentage of the HQ population);
- proposes, for Government approval, metrics that describe service delivery activities to
  measure contract performance with regard to service delivery, customer feedback, quality
  assurance and timely delivery of products and services; and
- 1. provides contractor developed surveys and the means to administer them. Upon completion of each end user Service Request or Help Desk Ticket, the contractor shall conduct a web-based customer survey appropriate to the work delivered. The first question shall be "Does the customer accept the work as complete". If the customer's answer is "no", then the work order shall remain open. If the answer is "yes" then the customer shall be provided with a customer satisfaction survey. Contractor developed surveys and the means to administer them shall be demonstrated and delivered to the government for approval 15 days before contract start date. The contractor may use existing survey mechanisms such as the Enterprise Service Desk Remedy system.
- m. provides continuously available customer feedback and other information to the Government of sufficient detail to identify trends and gaps of customer requests for service and services rendered; and incorporates ITIL3 principles and practices to align with NASA service delivery and provide continuous service improvement.

DRD	Description	Frequency
DRD #20	Customer Service Metrics	Deliver final three months after
	Proposal.	contract start.
DRD #21	Customer Satisfaction Survey	Deliver at contract start with the
	Report.	customer satisfaction survey, monthly
		summary analytics and trending.

Metric	Description	Performance Level to Achieve Fee

Metric #8	Customer Satisfaction Surveys.	Customer surveys shall include an
	Achieve a "4" or "5" (on a scale	Overall Rating of no less than a
	of 1-5 with 5 being the highest)	"4" (on a scale of 1-5 with 5 being
	on customer satisfaction surveys.	the highest).
	(a minimum number of surveys	-
	received will be established).	

4.2

#### 4.3 Customer Education and Outreach

The Contractor shall provide customer training, end-user documentation, and communication activities for IT applications, services, and issues that affect the HQ user community (NASA employees, contractors, and NASA HQ consultants). The contractor shall provide training using classes, video files, online content and printed materials. Classroom training will be conducted in the on-site training facility (Computer Training Center), Monday through Friday, except Federal holidays, between 8:00 a.m. until 4:30 p.m. local time.

ITCD's IT communications program provides strategic, tactical, and proactive communication support for HQ CIO and all supported IT projects/programs. The contractor shall provide customer communication support, including development, maintenance, and execution of the ITCD Communications Plan. Program support includes content development and maintenance of ITCD-managed Web pages; identification of stakeholders/audience; message delivery methodologies; message timing; message content; technology to business terminology translation. Additionally the contractor shall provide timely submission for recurring outreach messages, including NASA HQ Web sites, HQ Facebook page; Heads Up articles; and others as defined. Specific outreach will also be required to communicate "IT Notices" and associated distribution list. The contractor shall support the drafting of approximately 10 IT Notices per month.

The contractor shall provide training for IT applications and services. The contractor shall develop and document a Training Program approach and framework and provide to the government within two months of contract start. Training methods shall include one-on-one, group, instructor led, remote, tutorial self paced, virtually over the web, and on recorded media. Training is required for both legacy applications and newly development applications. In addition, HQ users are increasingly impacted by NASA applications and services housed outside of HQ, and HQ is at times called upon to develop and/or deliver end-user documentation, outreach and computer training if no existing materials are available prior to deployment at HQ. Training materials shall be provided for both instructors and students to facilitate use of applications and solutions provided or supported under this contract. The contractor will recommend the appropriate training scope for each project for government approval and should include approach, timing, dependencies, and audience. The contractor shall schedule and facilitate training sessions including facilities and equipment.

Customer advocacy and coordination groups will be supported and facilitated by the contractor. This includes recurring meetings for the Customer Service Project Reviews and Customer

Advisory Committee. Coordination and communication with customer advocacy groups is a critical success component for ITCD projects.

The contractor shall support NASA in planning for and implementing change associated with new IT capabilities within HQ and the Agency. NASA may call upon the contractor to provide support not only for HQ-specific system implementations, but also for Agency-wide initiatives that may impact HQ's infrastructure, processes or policies. Those activities include impact assessment of proposed change(s), modification and coordination of required changes, and documentation of change management processes and procedures.

The contractor shall develop, submit and regularly update the Training Program and Outreach Plan detailing plans during the upcoming period and the top five to ten quantifiable objectives expected to be achieved. The Government and Contractor will discuss, modify (if necessary), and agree to the top five to ten objectives, which will form the basis for a portion of the incentive fee determination (technical performance) during that period. The contractor shall release an update to the Training Program and Outreach Plan every six months. The contractor shall submit a report at the end of each period to describe the accomplishments against the objectives met from the previous period and which 5-10 objectives will be targeted for the next period. The Training Program and Outreach Plan shall adhere to the guidance in section 2.3.1 and 2.3.2 of this Performance Work Statement.

DRD	Description	Frequency
DRD #22(A)	Training Program and Outreach Plan, detailing materials, methods and approach and to include communications, and facilitating relationship building activity. Two plans submitted each year with each plan covering the period of performance April 1 thru September 30 and October 1 thru March 31.	Draft 45 days from contract start; final 2 months from contract start. Subsequent draft plan due each August 1 with final due Oct 1; and Feb 1 with final due April 1.
DRD #22(B)	ITCD Communications Plan	Draft 45 days from contract start; final 6 months from contract start. Updates as required by ITCD.
DRD #23	Customer Advisory and Service Review, meeting notes, action items, results, and schedule.	As required within 2 business days of meetings.

## **4.4 Event Support**

The contractor shall serve as the IT expert for events requiring audio-visual services at HQ and provide support to separate contractors whose responsibility centers on operating the HQ A/V equipment and facilities. IT support includes both on-site and off-site activities such as providing

and configuring the necessary IT hardware and software, checking LAN connections, interfacing with other systems or facilities, providing dedicated support for the entire length of multi-day meetings, training the A/V contractor who operate the A/V equipment, and coordinating with multiple organizations and contractors. The contractor shall develop standard procedures available at contract start for obtaining advance coordination for A/V IT support. Work products and procedures must also adhere to standards of federal web publishing, IT security and Section 508 conformance along with all other applicable federal, Agency and departmental regulations.

#### 4.4.1 Web-Streaming

The contractor shall operate and maintain the Headquarters Web Streaming services ensuring effective delivery of content provide by NASA TV. In support of NASA events which occur at on-site and off-site locations the contractor shall provide services to digitally capture events and meetings for the purpose of live Web-streaming, post event Web-streaming, or event recording. The contractor shall support approximately 4 Web-streaming events per month. The contractor shall:

- a. ensure proper coordination with public affairs, NASATV, and others is maintained to ensure reliable and timely broadcast of content through the HO streaming media servers:
- b. ensure that the HQ streaming servers are maintained and are compliant with correct compression and service requirements of NASA TV and the Agency portal;
- participate in the planning, coordination, and setup of video recording and streaming of NASA events with event planners and hosting locations;
- d. provide on location technical staff to record NASA events using provided portable recording and encoding systems for posting to websites, DVD releases, or streaming over the web; and
- **e.** evaluate new and emerging technologies to continually enhance service offerings associated with the capability to capture and Web-stream NASA events (live and recorded formats).

# 4.4.2 Video Teleconference Systems (ViTS) Support

The ViTS room operations team provides a full range of support services and technical expertise in support of point-to-point and multi-point video teleconferences at Headquarters. These services include the scheduling, conference consultation, conference setup, coordination with end points, and room operations. The contractor shall:

- understand at an expert level the systems and components within the Headquarters ViTS
  rooms and ensure that all elements of the system are maintained in an operational and
  available state:
- b. provide the scheduling function of the Headquarters ViTS rooms and coordination of conference setup with remote end points (approximately 36 per month);
- assure staffing of rooms during video teleconferences and support services that include but not limited to room preparation, system and camera operation, recording, monitoring audio/video quality, and problem solving;
- d. log attendance and customer satisfaction survey for each event and report survey data in the Customer Satisfaction Survey Report (DRD #21); and

 coordinate facility repairs and system maintenance as needed to ensure all elements of ViTS room services remain in an operational and available for use state.

# 4.5 On-Boarding and Off-Boarding Support

The contractor shall provide support in the On-Boarding and Off-Boarding of all types of NASA workers (civil servants, contractors, temporary workers, remote users, etc.). This shall include executing On and Off-boarding processes as well as providing outreach support and training/education related to On and Off-Boarding. The contractor shall provide support in the On-Boarding of approximately 34 employees per month The contractor shall support HQ in implementing process re-engineering as defined by the Agency On-Boarding Initiative for NASA (OBIN) project.

It is NASA's goal to equip all employees with the necessary assets to enable them to be productive on day one with NASA. This means that all IT assets such as computers, user accounts and system access is coordinated and delivered in advance of their start date. The contractor shall work with other NASA organizations and contractors to ensure this happens. These organizations include the following HQ and Agency offices: HQ Human Resources Management Division, HQ Security Office, HQ IT Points-of-Contact, HQ Administrative Officers, NASA Shared Services Center, and the NASA/ACES contractors. The contractor shall enhance the current On-Boarding Statistics Report by working with the other process stakeholders and data systems. This report shall be enhanced to include Off-Boarding data and shall provide summary statistical data as well as report status on an individual basis. The contractor shall utilize the Identity and Access Management Tools (IdMAX). The contractor is required to take a proactive approach in On-Boarding and is sometimes called upon to support and help trouble shoot delays in on-boarding. The contractor shall participate in HQ and Agency level working groups aimed at continuous improvement in this area.

The Contractor shall be audited for compliance to policies (including but not limited to) to Records Management, Security/Badging, Asset Management, and Credentials for off-boarding and on-boarding HITSS staff.

Commented [ld14]: New

DRD	Description	Frequency
DRD #23A	On Boarding and Off Boarding	Deliver weekly beginning 3
	Statistics Report	months from contract start.
DRD #23B	HITSS On-Boarding Report	Weekly
DRD #23C	HITSS Off-Boarding Report	Weekly
DRD #23D	HITSS On-Boarding Checklist	Submitted to the government for each HITSS employee on-boarding 2 weeks before execution of on-baording activity

DRD #23E	HITSS Off-Boarding Checklist	Submitted to the government for
		each employee off-boarding 2
		weeks before execution of off-
		boarding activity
DRD #23F	HITSS On-Boarding and Off-Boarding	Deliver two weeks after the start
	SOP	of option year two and update
		quarterly.

#### 4.6 Service Coordination and Collaboration

Effective service coordination and collaboration with all internal and external customers is critical to the success of ITCD and the contractor. The contractor is required to coordinate services and collaborate with the following internal and external customers: HQ end users, ITCD, NASA leadership, I³P Contractors, and other HQ and Agency contractors. The contractor shall support ITCD in the development of processes and procedures that will facilitate coordination and collaboration between contractors. ITCD must ensure that coordination and collaboration is effective and efficient. The contractor shall be prepared to report on issues or status regarding coordination and collaboration.

#### **4.7 Service Management**

A goal of this contract is to ensure proactive management of all requests for service from HQ customers. This includes Help Desk Management, Service Desk Management, and Service Request Management.

The contractor shall implement a service management program that provides comprehensive support in the planning for and execution of customer requirements. The contractor shall work closely with ITCD and become knowledgeable of individual Mission Directorates and Mission Support organization's mission, programs, and organizational structure, and work closely with their Points of Contact (POCs) and ITCD. The contractor shall support the Mission Directorates and Mission Support POCs in defining requirements for their organization; developing, tracking and coordinating schedules for their activities; and ensuring that configuration and inventory controls are maintained.

For efforts that are considered projects and are subject to the processes of the Service Request process, IT Project Management Review Board, SDLC, and Operations the contractor shall:

- a. propose, for Government approval, metrics that describe service delivery activities to
  measure contract performance with regard to adherence to Customer Requirements
  which include; service delivery, customer feedback, quality assurance and timely delivery
  of products and services; and
- anticipate issues, concerns, and problems and coordinate with ITCD to preemptively initiate resolution.

DRD	Description	Frequency
DRD #24	Customer Requirements	Deliver within 75 days of contract start;
	Adherence Metrics Proposal.	final due three months after contract
		start.
DRD #25	Requirements Adherence	Deliver three months after contract
	Report.	start, monthly thereafter.

# 4.7.1 Help Desk Management

HQ intends for the HITSS contractor to use the NASA Enterprise Service Desk (ESD) located at and managed by the NASA Shared Services Center (NSSC) to manage all Tier 1 and 2 Help Desk calls. The ESD serves as the single point of contact for Enterprise Services (Tier 1) support providing a unified interface between the I<sup>3</sup>P customers and the I<sup>3</sup>P service providers (i.e. I<sup>3</sup>P contracts – ACES, NICS, NEDC, EAST, and WEST Prime). The Enterprise Service Desk ticket system utilizes the BMC/Remedy 7.5 software and sufficient license and access will be provisioned to the HITSS contractor.

For Tier 1 and 2 support the contractor shall work directly to resolve and triage calls directly and interface with the ESD for a number of activities. The contractor shall support approximately 250 HELP desk tickets per month. This includes (but is not limited to):

- a. utilizing the same service as provisioned by the I<sup>3</sup>P Tier 1 Enterprise Service Desk (ESD). The contractor shall leverage the processes and procedures to ensure close integration with ESD. The contractor is responsible for all integration work with the NSSC. For reporting and analysis, the contractor shall leverage dashboard and analysis services functions provisioned by the ESD;
- b. providing Tier 2 help desk support during the prime time work hours of 6 a.m. to 6 p.m. Eastern U.S. time on days when the federal government is open, even if contractually the contractor is closed on that day:
- c. providing Tier 2 help-desk support via phone and e-mail;
- d. reviewing all customer feedback received from the ESD customer satisfaction survey;
- e. reviewing with NASA all surveys rated by customers as "dissatisfied" or "very dissatisfied";
- f. providing 24/7 contact information and revising the information as necessary to keep it current;
- g. providing and updating knowledge articles used by call agents to resolve and/or triage Incidents that pertain to HITSS specific contract service;
- h. resolving, reporting status and completing escalated incidents that cannot be resolved at the Tier 2 level;
- i. providing appropriate training materials in a compatible format and scripts to the ESD to help them triage calls properly;
- j. providing and updating knowledge articles used by call agents to resolve and or triage Incidents that pertain to HITSS specific contract service. This includes knowledge articles for the Tier 0 self-service I<sup>3</sup>P Web site for commonly identified incidents and or user self service activities:

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- k. providing notifications and community/organization lists for dissemination of planned and unplanned outages, service configuration changes affecting HQ customers for services provided by the HITSS Contractor;
- providing status related to incident/problem resolution for those incidents assigned to the HITSS contract;
- m. providing information to the ESD as to HQ specific configuration changes of importance for Tier 1 or Tier 0 levels;
- n. providing escalation procedures to the ESD;
- providing a POC for ESD-to-HITSS-Contractor escalation processing for both normal business and after hours:
- p. providing metrics to the ESD as requested;
- q. reporting all downtime, planned and unplanned to the ESD; and
- r. providing initial load of Configuration Items (CIs) to the ESD/ESRS CMDB during the transition period of the Contractor or in accordance with a specific contract Service Asset and Configuration Management Plan.

Important ESD reference information can be found in the following documents:

- Enterprise Service Desk Concept of Operations
- Enterprise Service Desk Performance Work Statement and associated Appendices
- ESD/ESRS Interface Definitions Specification
- ESD/ESRS 7120.7 Program/Project Systems Requirements documents.

DRD	Description	Frequency
DRD #26	Summary and Trend Ticket	One month from contract start
	Reporting including number of tickets opened, completed and	and monthly thereafter.
	pending (e.g. under a week, under	
	two or over three) number escalated,	
	rating, closed, times to first respond, customer satisfaction. Summary and	
	reporting of phone support, email support, and drop-in support.	

#### 4.7.2 Service Request Management

The contractor shall efficiently receive and promptly process all Service Requests assigned to them. The Agency is migrating to the Agency-wide Enterprise Service Request System (ESRS). At contract start, however, HQ will not be fully utilizing ESRS. The Agency ESRS will be operational at contract start but will only be used for Service Requests assigned by the Agency to HQ for fulfillment. At some time in the future HQ will use the Agency ESRS for all HQ Service Requests. The current HITSS contractor is using the HQ ISEM Work Management System

**Commented [Id15]:** Does ITCD want to remove this requirement?

(IWMS). The contractor shall use the IWMS for performing Service Request Management. The contractor shall manage and support approximately 23 Service Requests per month.

# 4.7.2.1 HQ Service Request Management System

The contractor will use the ITCD approved service request system for service request management. The contractor shall:

- a. maintain web-based SR initiation and browse capability;
- b. maintain user permissions based on specific tasks;
- c. maintain standard permissions for any customer who does not have a system USERID;
- maintain ability to initiate a new service request, search for existing service requests, run standard and custom reports;
- e. maintain ability to browse the SR review agenda;
- f. maintain ability to browse the CCB Agenda; and
- g. maintain automatic notification via e-mail for any change in status of the SR throughout the SR lifecycle.

For all SR's submitted and within scope of this PWS, the contractor shall:

- a. enter all SRs into the work management and tracking system within 12 prime time hours
  of receipt and shall enter the agreed upon SR completion date within three business days
  of SR receipt (approximately 25 SRs per month);
- b. coordinate the CCB date or the completion date of all service requests with the customer;
- c. complete service requests by the approved completion date, customer concurrence is required prior to Service Request closure;
- d. coordinate any extension of completion dates with the customer. The COTR will approve requests for all extensions after two extensions have already been granted;
- e. coordinate the closure of SRs with the customer. The contractor shall insure that SRs are closed within 72 hours of completion;
- f. coordinate extensions to approved completion dates or project milestones with the customer and/or the HQ CCB. The customer and/HQ CCB has the right to disagree with the date proposed by the contractor. This shall be tracked as an unapproved completion date; and
- g. provide a web-based customer survey appropriate to the work delivered. The first question shall be "Does the customer accept the work as complete". If the customer's answer is "no", then the work order shall remain open. If the answer is "yes" then the customer shall be provided with a customer satisfaction survey.

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DRD	Description	Frequency
DRD #27	Service Request Processing Plan describing	Within 2 weeks of contract
	overall management and execution of the SR	start.
	system and customer satisfaction report.	

#### 4.7.3 SR&QA Customer Surveys - Moved to Section 4.1

DRD	Description	Frequency
DRD #28	Reserved	

Commented [ld16]: Indicated that this is Reserved.

#### 4.7.4 Use of Agency Enterprise Service Request System (ESRS)

The ESRS is anticipated to be operational for Tier 1 requests during the phase-in of the HITSS contract in which case, the HITSS contractor shall receive service requests from the Agency Enterprise Service Request System for fulfillment. The HITSS contractor shall plan for a period of integration and testing to integrate their contractor order fulfillment systems with the ESRS. As the Agency ESRS service matures, the HITSS contractor will continue to adopt the Agency service and migrate dependence from a HQ only solution. The specific interface definition between the ESRS and HITSS contract is defined in the ESD/ESRS Interface Definitions Specification.

The ESRS utilizes the same IT Service Management software as the Enterprise Service Desk ticket system (BMC/Remedy 7.5). The HITSS contractor shall interface with the ESRS for a number of activities. These include:

- a. building interfaces between the ESRS Remedy system and the HITSS contractor system during the transition period. The contractor is responsible for all integration work with the NSSC.
- b. building linkages between the NASA Enterprise Architecture Registry (NEAR) and the contractor system during the transition period;
- c. fulfilling, reporting status and closing service requests and updating CIs (definition) in the ESD/ESRS CMDB (more definitions needed);
- d. providing a POC for ESRS-to-HITSS-Contractor interfacing/integration for both normal business and after hours incident/problem resolution/service fulfillment; and
- e. populating and updating HITSS service system and component information in the NASA Enterprise Service Catalog (ESC) in accordance with the NEAR IDS (NASA Enterprise Architecture Repository (NEAR): Interface Definition Specification).

# 4.8 Catalog Services

The contractor shall provide a full catalog of commercial IT components for ordering on the first business day of the contract. Each catalog entry shall clearly define, in precise and

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understandable terms, what hardware, software, service, coverage, warrantee, support, etc., is included in the catalog price. The catalog provided shall be on a commercial web-site with government pricing (e.g., pcmallgov.com; gtsi.com; cdwg.com, etc.) and shall meet all FAR requirements. The catalog provided shall allow alternate shipping methods. All NASA Headquarters employees may order from the catalog. The contractor shall support between 500 to 800 orders per year. All items ordered for Government use shall be approved in the following sequence, first by the organization IT POC, then the organization budget official, and lastly the IT and Communications Division point of contract. The Contractor shall be responsible for delivery and when required, for installation of the product, except for desktop installations, which are performed by the ACES vendor. The Contractor shall be responsible for returning to the catalog vendor all or some portion of orders as required. For catalog items, the Contractor has no responsibility for integration into the customer's environment, consultation services. training, data conversion, or maintenance. If the product cannot be installed without causing anomalies with the customer's computer, then the product shall be removed and the customer's computer shall be restored to its original state. If problems occur after the installation that can reasonably be traced to the product, then the product shall be removed and the customer's system shall be restored to its original state. The catalog shall contain a disclaimer for each item that clearly limits the Contractor responsibility. The Government shall approve items and categories of items placed into the catalog.

DRD	Description	Frequency
DRD #29	Catalog Orders Report/Checkbook	2 weeks from contract start,
	includes number of orders by	monthly thereafter.
	category, requisition number and	
	funding source (if known), number	
	complete, funds used versus available,	
	funds in process, summary total of	
	monthly catalog invoice and break out	
	of ITCD funded monthly total.	

# 5.0 Application Development & Information Management

Application Development provides comprehensive information services, delivering software and web applications to meet customer's business needs and search, query and information management tools to meet enterprise objectives. Much of the current HQ application inventory consists of legacy stove-piped applications that were replicated multiple times, so our challenge is to migrate as many of these instances as practical to a modern information framework that will extend reuse of data sources, information organization, and application functions while provisioning a faster more efficient environment to create and field applications.

This new environment will be guided by design goals of provisioning modern customer-facing interfaces, automated data exchanges from validated sources, and of reducing our dependence on specific hardware, and increasing our ability to employ analytics across our application inventory. Our objective is to provide decision support and knowledge services to the leadership of NASA and to support similar needs across the Agency.

The Applications Development program shall be aligned with Agency and HQ Enterprise Architecture, the ITCD Innovation Program, and Agency I<sup>3</sup>P contract service providers. Success of the program requires clear communications with all stakeholders, establishing consistent and realistic expectations, delivering innovative, quality, timely, and cost effective solutions.

### 5.1 Establishment of an Application and Information Framework

Our goal is a comprehensive information service, efficiently delivering software applications and web sites to meet specific, though ever-evolving, customer business needs while employing a strategy that maximizes enterprise objectives. It is anticipated that business needs will be across multiple domains (e.g. finance, project management, facilities, capabilities, missions, legislative, organizational, etc) and that the formats of data sources will be equally diverse. As the content of applications (source, entity relationship, logic) often needs to be shared, leveraged, aligned or reused, the framework should provision methods for ingestion to search indexes, query services and registration as HQ-wide capabilities. Therefore a strategy beyond traditional warehousing will require a capability for data source management, link management, service relationship management, registration services, metadata management, data model management, data and service exchange management and linkages to monitoring and management controls for capacity planning, information usage and data and service exchange.

The establishment of a 21st century information management environment worthy of our customers and their mission requires the contractor to employ innovative thinking, complex problem solving, communication, customer relationship and organizational change management, strategic and tactical planning, adherence to documented process, technical expertise, and legacy support. The contractor shall deliver an Application Service Framework that is extensible and sustainable. The contractor shall:

- a. develop plans to test and deploy the essential components of an application development framework;
- ensure mechanisms for operations and management of services in the framework are integrated and supportable by the contractor as a critical element of each phased deployment;
- restrict and otherwise minimize point-to-point service and data exchanges while promoting service advertisement, utilization, and management;
- d. Data Exchange Agreements (DEA) will be migrated to fully automated service advertisements in order to maximize reuse of software functions and minimize point-topoint data exchanges;
- automate DEAs sufficiently so that monitoring of success, schedule, and availability for more capacity can be determined;

- f. ensure monitoring for every application and service that detailed records indicating customer use, including access, duration and relevant transactions are captured and viewable as a critical factor of determining performance and customer satisfaction;
- g. ensure that vocabularies including data dictionaries, and metadata, and portfolio attributes are shared and used by a HQ search and query service;
- h. adhere to goals of high availability and extreme responsiveness from a customer's point of view:
- adhere to goals of hardware independence for customer environments regardless of OS and in support of mobile devices;
- j. adhere to hosting goals of hardware independence, OS agnostics, and virtualized environments:
- provision capabilities to add metadata elements of provenance and similar data validation and quality verification;
- provision mechanisms to ingest data dictionaries, metadata, and similar sources in to search indexes and query builders; and
- m. emphasize maximum flexibility in the use of customer facing interfaces that enable self service (e.g. query services, mashups).

The contractor shall develop, submit and regularly update the Application Service Roadmap and Implementation Plan detailing plans during the upcoming period and the top five to ten quantifiable objectives expected to be achieved. The Government and Contractor will discuss, modify (if necessary), and agree to the top five to ten objectives, which will form the basis for a portion of the incentive fee determination (technical performance) during that period. The contractor shall release an update to the Application Service Roadmap and Implementation Plan every six months. The contractor shall submit a report at the end of each period to describe the accomplishments against the objectives met from the previous period and which 5-10 objectives will be targeted for the next period. In addition to the general guidance in section 2.3.1 and 2.3.2 of this Performance Work Statement, The Application Service Roadmap and Implementation Plan shall address the following requirements:

- a. an approach to improve/enhance the Software Management Guide and Application Development processes;
- b. a description of the roles and responsibilities for developing, managing, and executing the roadmap and implementation plan;
- a recommended software development methodology (RAD, Iterative, Agile, Spiral, etc.) and its integration to the SMG with emphasis on areas for modification and improvement to reduce cost and development time;
- d. a recommendation for an Application Service Framework and a plan for implementing, testing and evaluating the essential components of the framework;
- e. a communication plan that addresses the synergy and collaboration needed with other components of customer service, engineering/operations, security and all other applicable

- areas and addresses; monitoring of applications and related service, customer satisfaction of application services provided, and meeting performance and availability requirements;
- f. an approach for analyzing the effectiveness/usefulness of existing tools and make recommendations for potential tool solutions that can support the Application Service Framework and related reporting;
- g. a recommendation, plan and schedule for a Quality Assurance and Quality Control improvement process that addresses; number and type of applications, technologies in the application portfolio, the architecture of each application, type of data processed in the application portfolio; validation and verification of the application at critical milestones in the software development lifecycle;
- an assessment of the existing test labs and test environment with recommendations for improvement;
- i. an assessment of testing tools and reporting;
- j. an approach for evaluating the existing information/knowledge management and CM tools:
- a schedule for developing a plan for the evaluation of new and existing information/knowledge management and CM tools for recommended improvement, redesign, or replacement;
- an approach for implementing and utilizing current investment in the IBM rational tools for areas of the framework;
- m. an approach for reviewing and updating Application Development templates based on Application Framework recommendations;
- n. a detailed description of the planning, requirements, design, development, verification & validation, and deployment disciplines that will be employed;
- o. a description of how EA will be addressed in the plan and the verification points for ensuring that EA is part of the implementation plan;
- a methodology for executing recommendations from analysis conducted on the SMG and App Dev processes;
- q. a technical approach for how lessons learned and suggested improvements are recorded, tracked, and vetted; and
- r. a managerial approach for monitoring execution of the plan.

DRD	Description	Frequency
DRD #30	Application Service Framework.	Two months after contract start,
		modifications reflecting
		approved changes as required.
DRD #31	Application Service Roadmap and	Six months after contract start
	Implementation Plan.	and every 6 months thereafter,
		modifications reflecting
		approved changes as required.
		(Due last business day of each
		Incentive Fee Period)

NASA HQ has approximately one hundred applications of varying complexity and customer use. General business services supported by the existing application inventory include: Finance; Budget; Communication; Human Resources; Asset Management; Administration; and Program Management. Application types include several instances of Oracle and MS SQL databases with web interfaces via ColdFusion and reporting via Crystal Report, and simple Document Management services via Basis / Basis Webtop. The contractor shall be responsible for sustainment and maintenance of the current applications inventory while aggressively assessing which shall be consolidated, modernized, or decommissioned. Support for these applications will be provided until each has been dispositioned and our reliance on stovepiped infrastructure is reduced. The contractor shall evaluate each of the existing applications and provide a recommended disposition plan, including technology, data migration strategies, impact on operations, schedule and cost. The contractor shall conduct a quarterly assessment of the Legacy Application Portfolio with identification of the following:

- The number of legacy applications in the portfolio approaching end of life.
- The number of legacy applications in the portfolio requiring technology refreshes.
- The number of legacy applications in the portfolio with low utilization.
- The number of legacy applications in the portfolio with large footprints on the infrastructure and large resource consumption.
- The reduction of legacy applications in the portfolio.
- The reduction of maintenance required for applications.

The contractor shall develop, submit and regularly update a roadmap detailing plans during the upcoming period and the top five to ten quantifiable objectives expected to be achieved. The Government and Contractor will discuss, modify (if necessary), and agree to the top five to ten objectives, which will form the basis for a portion of the incentive fee determination (technical performance) during that period. The contractor shall submit a report at the end of each period to describe the accomplishments against the objectives. The contractor shall release an update to the Legacy Application Disposition Plan every six months. The contractor shall submit a report at the end of each period to describe the accomplishments against the objectives met from the previous period and which 5-10 objectives will be targeted for the next period. In addition to the general guidance in section 2.3.1 and 2.3.2 of this Performance Work Statement, The Legacy Application Disposition Plan shall define an approach for analyzing the legacy applications and a description of the roles and responsibilities for developing, managing, and executing the plan. The plan shall have a description of the methodologies for legacy application disposition that addresses the following:

- a. analyzing and evaluating legacy applications for consolidation;
- b. data migration strategies;
- c. operations and management (O&M) impacts;
- d. schedule and cost of implementing and executing;
- e. records management considerations;

- f. categorizing the types of legacy applications to support decision-making within budget, technology, data, and architecture as drivers for: Modernizing specific legacy applications within budget and determining appropriate enhancements for short-term use until a new application is developed to replace the legacy application; and
- g. the identification of key factors for determining an application's end of life.

DRD	Description	Frequency
DRD #32	Legacy Application Disposition Plan.	6 months from contract start, modifications reflecting status and approved changes every 60 days. (Initial plan due last business day of Incentive Fee Period (3/29/2013); 60 day status due the first business day of July, September, November, January and March)
DRD #33	Legacy Application Portfolio Report.	Updated to align with verbiage in the PWS.

# 5.3 Support for Information and Knowledge Management

The existing HQ application inventory supports multiple business functions, ultimately influencing knowledge management and decision support, but often as a step-function outside the specific application. The contractor shall provide support for the development of information management and knowledge management capabilities to enhance NASA HQ in organizing and retrieving information, retaining and sharing knowledge, and furnishing information elements to support decision-making and minimize the steps required. The scope of this support includes modeling processes and workflows and providing improvements to NASA HQ offices in developing, maintaining, and implementing information and knowledge management architectures, ontologies, taxonomies, process models, and other tools and techniques that will assist NASA in meeting its knowledge management responsibilities.

The contractor shall provide technical support in assisting HQ offices in defining their information needs to support decision-making, in developing technical and business process solutions for obtaining and organizing the information, in protecting information that is sensitive and not appropriate for general distribution, and in defining and deploying mechanisms and tools for retrieving the information in an efficient, intuitive/contextual, and cost-effective manner.

# 5.4 Applications and Web Site Development

The contractor shall develop application software and web sites based on requirements and design specifications approved by NASA HQ (approximately 5 new (1.0) applications / web-applications per year and approximately 90 1.x releases per year). The contractor shall build software applications, establish baseline configurations, and perform such other tasks as are required to make the developed application ready for operational use. Formal configuration management controls shall be adhered to in coding application software and web sites. The contractor shall maintain the baselines under configuration management and enable current and continuous access to all application data and documentation. The contractor shall:

- a. adhere to FIPS (Federal Information Processing Standards), Agency, and Division Standards:
- adhere to the full range of application lifecycle management activities as defined in the HQ Software Management Guide;
- c. formally propose modification to current standards prior to any deviation in accordance with the approved NASA HQ CCB;
- d. document tools and technologies in the NASA HQ Application Technology Library;
- e. prepare appropriate application and system documentation, (typically the software Version Description Document, an application Implementation Plan, and a User and Operations guide) prior to NASA acceptance;
- f. adhere to interface controls including coordinating with computer operations and system engineering organizations within HQ and other NASA Installations to properly define operational and system requirements in the development of applications and in the planning of system capabilities. The contractor will document interfaces via Interface Control Documents and/or Memoranda of Understanding/Agreement and clearly depict times, flow, content and assure monitoring;
- g. support hosting and development changes required to migrate relevant web and application services to I<sup>3</sup>P providers;
- h. develop data models to support design and reuse in accordance with target framework;
- i. generate test data to ensure functionality and results prior to release;
- j. deliver software test plans and test cases reflective of requirements and use cases;
- k. deliver Logical Data Base Design and the Physical Data Base Design at the PDR and CDR. Data element and types, primary and secondary key fields, and dependencies among data shall be identified. Other pertinent characteristics shall be presented as determined by the contractor or directed by ITCD;
- adhere to baseline requirements for all software documentation, including requirements, data sources, design, source code, test scripts, planned test results, actual test results, and version description documentation; and
- m. maintain the baselines under configuration management and enable immediate and continuous access to all application data and documentation.

DRD	Description	Frequency
DRD #34A	Framework for Development Program.	Due at contract start, modifications reflecting approved changes as required.
DRD #34B	Framework for Web Site Development Program	Due nine months after contract start.
DRD #35	Interface Control Documents.	One month from contract start and as needed thereafter.

# 5.5 Software Management Guide (SMG)

The NASA HQ Software Management Guide gives specific guidance identifying the accepted life cycle processes that shall be used by the contractor for developing, prototyping, and deploying application services and is leveraged to extend or share our services outside of the HQ application development environment. The contractor shall:

- a. utilize and enhance the NASA HQ Software Management Guide (SMG);
- employ software management and development detailed in specific sections for Software Standards and Procedures, Software Configuration Management, and Software Assurance;
- adhere to the NASA software policies and guidelines referenced, specifically NASA Procedural Requirements (NPR) 7150, NASA Software Engineering Requirements;
- maintain and update to reflect current or needed processes and procedures, specifically to incorporate agility and responsiveness in development methodologies into NASA HQ standard; and
- assure changes adhere to the CCB process and pre-submittal is reviewed by NASA for approval.

DRD	Description	Frequency
DRD #36	Software Management Guide.	Interim due three months after
		contract start date; updated SDLC
		due six months after contract
		start; modifications reflecting
		approved modifications quarterly
		thereafter.

## 5.5.1 Streamlined Development Methodology

NASA HQ is striving to implement an iterative, streamlined Software Development Lifecycle as a means to deploy quality solutions quickly and to reduce design, development, and

implementation risks. To transition/implement to a more rapid and iterative development methodology, the contractor shall:

- a. use prototyping, and rapid development methodologies;
- prototype new technical approaches, with an emphasis on small discreet proofs of concept;
- c. demonstrate prototypes during critical design reviews;
- d. ensure all derived requirements identified are presented to and accepted by the government prior to each design review;
- e. provide full lifecycle documentation;
- f. implement of an iterative development methodology in adherence to NASA 7120 and NASA HQ configuration management requirements; avoid using production data within a prototype application without prior government consent; and
- g. modify the Software Management Guide.

# **5.6 Applications Development Requirements**

Requirements are the foundation for the systems development program. A goal of this contract is to optimize the collection, documentation, and confirmation processes associated with the requirements phase of development. NASA HQ seeks to leverage technology for documenting requirements and facilitating mapping requirements to test cases and design specifications. In addition, improvements are sought in the means by which documented requirements are expressed back to the customer in an engaging way to verify and validate priority and intent. To facilitate requirements definition and to document independently testable and verifiable requirements, the contractor shall:

- utilize existing NASA HQ defined tools (IBM Rational software) to document all software development project requirements, and/or recommend alternate technologies and approaches which provide improved efficiencies;
- collect, interpret, model, generate, and document business, functional, and technical requirements in accordance with programmatic mandatory, preferred and optional formats;
- c. provide a consultative role to fully elicit customer requirements,
- d. ensure requirements traceability;
- e. obtain written NASA approval of the documented application requirements
- f. maintain responsibility to ensure captured requirements are vetted and understood by stakeholders prior to government acceptance;
- g. ensure project requirements reflect the "as built" state of the product upon project delivery;

- h. leverage technology, models, diagrams, and multimedia to communicate concepts and details;
- i. provide business process re-engineering services as requested;
- i. identify opportunities for business improvements and provide recommendations,
- schedule and conduct requirements reviews to document and validate the NASA requirements;
- consult with the Government data and/or system owner to support them in identifying the
  proper data category and security requirements in accordance with the governing FIPS
  (Federal Information Processing Standards) and National Institute of Standards and
  Technology Special Publications; and
- m. ensure requirements reflect NASA HQ organizational approach to development projects and reflect the needs of the organizational unit and are not specific to an individual.

DRD	Description	Frequency
DRD #37	Standard requirements template that	Within two months from
	documents the service or design need	contract start date.
	from the perspective of effected	
	discipline areas (e.g. applications	
	development, IT security, customer	
	training, operations) and by level of	
	need (e.g. mandatory, optional,	
	preferred).	

# 5.7 System Design Specification

Quality system design is the blue print that translates "what" the system must do to "how" the system will do it. A goal of this contract is to optimize the analysis, modeling, prototyping, documentation, and confirmation processes associated with the design phase of development. NASA HQ seeks to leverage technology for documenting design specifications and facilitating mapping design specifications to requirements and test cases. In addition, improvements are sought in the means by which design specifications are expressed back to the customer for confirmation. To facilitate system design the contractor shall:

- a. identify and utilize a NASA HQ approved tool to document project design specifications,
- b. map design specifications to requirements and test cases;
- provide a repository for design specifications accessible using common metadata (e.g. portfolio, system, service, owner);
- d. provide an Application Design Specification for each new development project and each subsequent project;

- e. provide the system functional design, the software components definition, system
  interfaces, data base specifications, and systems, equipment and software requirements,
  as appropriate;
- f. ensure design approach is vetted and understood by stakeholders prior to government acceptance;
- g. ensure integration of modules or components through open reviews;
- h. leverage technology, models, diagrams, and multimedia to communicate concepts, details, alternatives analysis, and technologies;
- conform to the NASA HQ EA target architecture, including Master Data Management and web-service oriented architectures, NASA security and authentication standards;
- j. give maximum consideration to both the short and long term requirements, including data consolidation, modularity, reusability, high availability, security, data access, data quality, and virtualization; conduct an alternatives analysis and recommend use of COTS, open source, cloud technologies as appropriate, and use of prototyping; and
- k. provide and use modeling/analysis techniques to identify and correct design errors and deficiencies which could cause performance deficiencies or resource utilization and/or contention problems.

DRD	Description	Frequency
DRD #38	System Design Specification.	Two months from contract start
		date, modifications reflecting
		approved modifications as
		needed thereafter.

# 5.8 Data Conversion

The contractor shall provide data conversion support for moving and migrating data from legacy applications to formats required by modernization, consolidation or migration. The conversion efforts require creative and efficient approaches for applying various rule sets for the conversion processes, and for validating and verifying data accuracy. The contractor is responsible for successful project data conversion and data migration defects will be corrected at no cost to the government. The contractor shall:

- a. work with ITCD, business customers, and system owners of the source and target applications so that they may fully understand the definition and characteristics of the source data and the converted data;
- b. document data conversion rules;
- provide consultation for improved efficiency and effectiveness in conversion and testing of the data;
- d. provide NASA customers data reconciliation solutions; and

 e. establish and operate of an information management authority to reconcile and harmonize NASA HQ data.

# 5.9 Quality Assurance & Performance Controls

NASA HQ seeks to implement repeatable application and information development processes that minimize errors, leverages previously employed solutions and maximizes service delivery to the customer. Additionally, all defects noted by the government during acceptance testing are deemed application defects for the purposes of this contract and will be remedied at no cost to the government. Defects will be defined as:

- Baseline Defects: the number of defects documented at the time of transition.
- Release Defects: defects identified after deployment that are introduced as the result of
  new or modified code, back end changes, or modification in application configuration.
   (ITCD reserves the right to update this definition based on the application portfolio. As
  the types of applications and their architectures change, review of the Release Defect
  definition will be required.).

To ensure project deliverables meet NASA HQ quality standards, the contractor shall:

- a. establish and enhance quality assurance and quality control processes;
- b. incorporate and identify a QA approach in each project plan;
- c. establish, update and adhere to a method and process for code and system peer review;
- d. develop and deliver a test plan for each project, regardless of project size or complexity including a pre and post deployment acceptance period;
- e. validate requirements and design specifications;
- f. complete all testing prior to government acceptance testing;
- g. ensure products for acceptance testing includes a formalized assurance report as part of the documentation from contractor that confirms all requirements and design specifications have been met and the project is ready to be deployed in production, report should include test results and findings:
- h. utilize QA practices to ensure defined procedures are followed and corrective action taken when procedures need to be modified;
- i. document and communicate risks and issues identified in the QA program to NASA; and
- j. be responsible for delivering a quality product as measured by the customer.

Application performance is measured at the user interface level based on customer impact. The contractor shall:

- a. recommend performance metrics; provide tools and perform systems, performance, tuning, and capacity analysis studies for applications;
- b. use modeling and/or prototyping techniques to quantify sizing of required resources;

- c. identify and recommend system optimize opportunities and strategies; and
- d. include performance planning approach in application design documentation.

#### 5.10 Application Status Reviews

To facilitate NASA HQ's management of the Development Program, the contractor shall provide a monthly summary of development activities, including newly identified risks, recommended mitigations, and project status for cost, schedule, and quality. While the contractor may propose the format and full content of the Application Review Package, the package contents are to be coordinated with the government lead for application development, made available via the web and have a strategic focus. At a minimum the Application Review shall contain: schedules for applications currently in work; current project life cycle phase and project progress at the task level; project and program risks, issues, and both executed and planned mitigations; upcoming milestones; deployments planned for the current month; All current and anticipated schedule rebaseline requests; and the program project plan for the next two months, based on the Integrated Master Schedule.

DRD	Description	Frequency
DRD #39	Application Status Review materials.	Three months from contract
		start date, monthly thereafter.

#### 5.11 Application Portfolio Management

NASA HQ maintains a catalog of software applications, currently in our Repository of Supported Applications (ROSA). The contractor shall update, augment, validate, and maintain current the Catalog of Contractor Supported Applications to support in application sharing, reuse, portfolio management, migration and similar support activities. The contractor will be responsible for maintaining this information, current with each software and web site release. There are approximately 100 ITCD supported applications and web sites managed through ROSA. Application data includes customers, service types, dependencies, system integration methods, and technologies and must align with or adopt agency nomenclature for portfolio categorization.

This catalog serves as a single document reference point for NASA and contractor management and staff for supported and active production applications. The contractor shall:

- e. use existing tools when possible to perform the catalog function;
- f. ensure the catalog includes applications that reside on all classes of computer platforms and networks, as well as all physical locations;
- g. ensure the catalog includes all web sites that are developed and/or maintained by the contractor;
- h. align where feasible to agency application portfolio categories; and

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i. provide web-enabled access for ITCD and designated customers to the catalog.

The contractor shall analyze the current NASA HQ application inventory and submit recommendations throughout the course of this contract regarding opportunities to improve portfolio management, improve technologies, reduce operations and/or costs, improve data quality and availability. Project reporting will include identification of variances in portfolio strategies, impacts and risks. Additionally, the contractor shall include mechanisms to find, sort and analyze our portfolio by:

- a. the number of legacy applications in the portfolio approaching end of life;
- b. the number of legacy applications in the portfolio requiring technology refreshes;
- c. the number of legacy applications in the portfolio with low utilization;
- d. the number of legacy applications in the portfolio with large footprints on the infrastructure and large resource consumption; and
- e. the reduction or trending of maintenance required for applications.

DRD	Description	Frequency
DRD #40	Portfolio Management Views of	Six months from contract start
	Application Services and Inventories.	date, and quarterly thereafter.

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### 5.12 Contractor's Development Environment

The contractor shall provide a managed and controlled environment in which it will conduct application development and testing. This environment shall include the appropriate hardware and software environment for the management of requirements, design, configuration management, testing and curation of the code base and interfaces. The development environment must be secure and be certified and accredited at no cost to the government. The contractor is responsible and liable for all security risk associated with this environment, including housing, storing, and transferring data. The government will be provided access to the development environment during normal business hours.

A goal of this contract is to leverage source code developed with public funding, open source, unlimited license and similar code release strategies to reduce costs and enhance the NASA HQ application portfolio. NASA owns all source code developed under this contract for use by NASA. The contractor grants NASA the right to use all source code provided by the contractor, but developed elsewhere, beyond the end of this contract. To ensure the quality of application development projects the contractor shall:

- a. develop an explicit plan for project verification and validation that reflects current industry best practices and takes a life cycle approach to quality management;
- b. provide development test plan framework within one month of contract award;
- c. generate and use test plans, procedures, specifications, and reports;

- d. provide test scripts and test procedures that are repeatable and under configuration control;
- e. provide and utilize automated test tools for unit, integration, regression, system, and load testing identified in the test plan and utilized accordingly;
- f. document test results, deviations from test procedures, and all software anomalies following completion of the testing;
- g. prepare and conduct an acceptance test that demonstrates to the NASA customer the integrity of the application and prove that the application meets specified requirements; and
- h. provide final and deployable application for the start of acceptance testing.

The contractor shall ensure that applications do not use production data for testing or otherwise prior to operational deployment, unless specifically approved by NASA.

DRD	Description	Frequency
DRD #41	As built detailed functional and	Two months from contract start
	physical description of development	date, provided within 2 days of
	environment, its interfaces and	changes to structural or ITS
	processes.	environment including patches.

# 5.13 Application Deployment

The contractor shall deploy applications and websites in the customer's computing environment following a successful Operational Readiness Review and pertinent training as defined in the SMG. For projects deployed to hosting facilities managed outside of this contract, the contractor shall meet all required steps for transitioning the project to the hosted facility for deployment. The contractor is responsible for determining, providing, and/or following (executing) deployment steps at the hosting facilities or in conjunction/collaboration with hosting facilities staff regardless of the facility. The contractor shall:

- a. provide a Release Implementation Plan (RIP) (formerly known as the VDD) and Release Notes Document (RND) for each software application release;
  - The RIP shall describe how the software is to be installed, tested and accepted by the user;
  - The RIP shall include the technical information of the application/website including but not limited to: database information, server information, etc;
  - The RND shall provide release notes and known issue information that is intended for the end user/application owner;
- b. deliver the User and Operations Guide as required;
- c. deliver any end user training and other related training , in coordination with user outreach as defined in Section 4.3 Customer Education and Outreach, as required;

- d. baseline the final application documentation and source code;
- e. maintain the baseline under configuration management control;
- f. perform coordination with the data center hosting provider to ensure post-deployment success;
- g. perform coordination with the desktop provider (ACES) as required; and
- Provide a Website Delivery Implementation Plan/Version Description Document or an Application Delivery Implementation Plan/Version Description Document for each release.

DRD	Description	Frequency
DRD #42A	Application Delivery Implementation	Initial draft five months from
	Plan. (Formerly Version Description	contract start; final six months
	Document but renamed to Release	from contract start date.
	Implementation Plan Template)	
DRD #42B	Website Delivery Implementation	Initial draft eight months from
	Plan (Formerly Version Description	contract start; final nine months
	Document but a secondary plan	from contract start date.
	created specifically for Website	
	Implementations)	
DRD #42C	Release Notes Document Template	Initial draft five months from
		contract start; final six months
		from contract start date.
DRD #43A	Release Implementation Plan (for each	Scheduled in accordance with
	Application and Website)	CCB.
DRD #43B	Release Notes Document (for each	Scheduled in accordance with
	Application and Website)	CCB.

Metric	Description	Performance Level to Achieve Fee
Metric #9	Error Free Releases. All application version releases shall be error free and not require post-release repairs.	57% - 92% are error free.

# 5.13.1 Application Service Management Support and Administration

The contractor shall provide application and information management support for new and/or enhanced applications throughout the application life cycle. The contractor shall:

- a. provide programming support for all applications of the DBMS;
- b. collect and analyze selected DBMS data (at times from disparate data bases and application platforms);

- support trade-off studies regarding selection of COTS, GOTS, MOTS, and open source DBMS products;
- d. perform data administration and data base administration in accordance with operations guidelines;
- e. coordinate with IT Security (ITS), Systems Engineering and Integration (SE&I), System Operations, I<sup>3</sup>P contractors and all other organizational entities in identifying, fielding, debugging, and restoring services,
- f. perform design and implementation of new data file structures and relations to meet requirements for data base expansion; and
- g. perform data administration and data base administration activities to support applications, web sites, development activities, and post-deployment issues.

# 5.14 Electronic and Information Technology (EIT) Accessibility, Rehabilitation Act of 1973

The contractor shall comply with Section 508 of the Rehabilitation Act (29 U.S.C. 794.d) as amended by the Workforce Investment Act of 1998 (P.L. 105-220). Section 508 was enacted to eliminate barriers in information technology, open new opportunities for people with disabilities, and encourage development of technologies that will help achieve these goals.

The contractor shall ensure, unless an undue burden would be imposed on NASA, that systems they develop, procure, maintain, or utilize electronic and information technology be accessible to:

- individuals with disabilities, who are NASA employees, have access to and use of
  information and data that is comparable to the access to and use of the information and
  data by NASA employees who are not individuals with disabilities; and
- individuals with disabilities, who are members of the public seeking information or services from NASA, have access to and use of information and data that is comparable to the access to and use of the information and data by such members of the public who are not individuals with disabilities.

The contractor shall comply with Section 508 technical standards for all EIT they develop, procure, and maintain. This includes the following technologies:

- software applications and operating systems;
- web-based information or applications;
- telecommunication products;
- · video and multimedia products,
- self contained, closed products (e.g., information kiosks); and

• desktop and portable computers.

# 5.15 Support for HQ & Agency Forms

The contractor shall develop, implement, and maintain both Agency and HQ operational forms. "Forms" refers to paper forms, metal or other signs, media and other labels, and forms produced by electronic means as referenced in NASA Policy Directive (NPD) 1420.1A, NASA Forms Management Policy. In support of this activity, the contractor shall:

- a. Collaborate with the Agency Forms Officer (AFO), HQ Forms Manager (HQFM), forms sponsoring offices, and the NASA Electronic Forms Working Group (NEFWG).
- b. Conduct outreach, communications, and training in support of the Forms Management Program as defined in this PWS, section 4.3, Customer Education and Outreach.
- c. Produce and maintain a forms management SOP and forms design standard, based upon the requirements of NPD 1420.1A, commonly accepted business practices, and Business Forms Management Association (BFMA) guidelines.
- d. Design, produce, publish, and maintain Agency and HQ forms in either electronic media or hard copy as defined by the sponsoring organization's requirements for the form.
- e. Apply Agency printing and publishing standards to forms in accordance with NPD 1490.1, NASA Printing, Duplicating, and Copy Management.
- f. Maintain a repository (electronic or hard copy) of Agency and HQ forms via web access from the NASA Electronic Forms System (NEFS). Maintain all original artwork, printing base files, CAD drawings for signs, etc. in the forms case files to support printing requirements. The forms repository contains approximately 286 Agency forms and 103 HO forms.
- g. Manage the forms case files in accordance with NASA Procedural Requirement (NPR) 1441.1, NASA Records Retention Schedules.
- h. Create new or update forms upon request by form sponsoring organizations or at the direction of the AFO or HQFM. Approximately 29 new forms are created and 39 form revisions are made each year.
- Conduct the Biennial Review of Forms for both Agency and HQ forms as required in NPD 1420.1A, NASA Forms Management Policy.
  - Upon completion of the Biennial Review of Forms, submit a final report to the AFO and HQFM summarizing the data collection required for each biennial review.
  - Based upon the results of the Biennial Review of Forms, revise or cancel forms as needed.
  - c. Provide data to the AFO and HQFM listing all active NASA and Center forms collecting PII to include part or full Social Security Number (SSN) information.

- j. Provide data quarterly to the HQFM identifying all HQ forms revisions, cancellations, and new forms for the production of the HQ Forms Bulletin, which is produced and sent out by the HQFM.
- k. Provide data quarterly to the AFO identifying all Agency forms revisions, cancellations, and new forms for the production of the NASA Forms Bulletin, which is produced and sent out by the AFO.
- Maintain the forms inventory databases for all Agency and HQ forms, and provide reports on demand to the AFO and HQFM.
- m. Provide recommendations to the AFO/HQFM for forms enhancements, potential forms consolidation, and/or workflow migration to existing systems.
- n. Provide recommendations to the AFO/HQFM for methods to increase economy, efficiency, and productivity of the Forms Program.
- o. Provide an online portal by which the AFO and HQFM can access real time data regarding the status of Agency and HQ forms, including but not limited to:
  - a. total inventory count (active, inactive, cancelled, etc.)
  - b. type of form (hard copy, sign, electronic)
  - c. count and detail of forms collecting PII or other SBU
  - d. count and detail of form complexity (including workflow)
  - e. count and detail of forms compliance with NASA Records Retention Schedule identifiers
- p. Attend the NEFWG meetings and other meetings as requested.
- q. Support the migration to the Agency eForms solution, including, but not limited to:
  - a. participating in meetings related to the migration project,
  - b. responding to data calls related to the migration project,
  - c. conducting testing of forms design in the new product as requested,
  - d. attending training on the new product
  - e. providing support for outreach, training, and education related to the migration project

DRD	Description	Frequency
DRD #44a	Biennial Review of Forms Final	First report due 10/1/2014 and
	Report	biennially per NPD 1420.1A
DRD#44b	Quarterly Data to Produce Forms	Quarterly (December, March,
	Bulletins (one for Agency and one for	June and Sept)
	HQ)	

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## 5.16 Support for HQ IBM Rational Product Suite and Related Services

NASA HQ utilizes several IBM Rational products to support its CCB, software development lifecycle, service request management, and application and infrastructure asset and artifact related management. Other NASA centers utilize these products through services provided by NASA HQ. The contractor will be responsible for

- maintaining the scalability of the architecture and environment
- upgrading the products per vendor recommendation and NASA HQ's approved release cycle and governance specific to IBM Rational products and related services
- · monitoring license structure and license utilization
- making recommendations on enhancements to configuration for front end capabilities
- ensuring service level agreements and operational level agreements are met in accordance to services provided to other NASA centers
- monitoring performance and health of the environment; making recommendations and implementing solutions to address potential issues and risks
- supporting other NASA centers including, but not limited to the following:
  - o user support
  - training
  - o administrator support
  - o customization/development and configuration support

## 6.0 NASA HQ Data Center

Data Center support at NASA HQ is divided between two major areas of responsibilities: the network infrastructure and the application and file servers that reside on it. The NASA NICS contract will manage and be responsible for all of the HQ's network infrastructure and support inclusive of firewall management, network address management, and the monitoring and management of routers, switches, cables and probes. The HITSS contract will be responsible for server management monitoring, maintenance and administration, inclusive of server and application deployment, troubleshooting and mitigation. The NICS and HITSS contractor teams must be well integrated and mutually supportive to assure that performance, availability and security are maintained at the highest levels practical and that moves, adds, changes, monitoring for performance, availability, capacity planning, reporting, and recovery processes are performed without organizational impedance.

Commented [ld18]: Added this section to account for specifics required for services and support provided to other NASA centers. The goals of ITCD are to provide uninterrupted service of our housed and hosted assets; to facilitate service advertisement and analytics; to provision continuity with similar data centers and alternative sites; to reduce the data center's impact on our environment; to reduce its size and; to eventually reduce our dependence on a HQ data center by reducing its size to the greatest extent that is practical. As such the contractor shall plan upgrades, process changes, monitoring tools, infrastructure modifications, deployment and audit methods in the context of an overall plan to migrate the HQ data center to its optimum configuration within the Office of Management & Budget, the Office of the CIO and ITCD's guidelines and HQ building modernization schedule.

#### 6.1 Data Center Operations, Scope

HITTS is responsible for the availability, reliability, and uninterrupted service of all servers, appliances, backup devices, storage devices, web streaming devices, data storage systems, server monitoring, and other similar systems and subsystems that reside within the HQ computer room and collectively provide customers with IT services such as databases, file storage and sharing, application and web hosting, authentication, and directories. The contractor shall:

- a. coordinate issues of performance and availability of HQ resident services that are reliant on responsive network connectivity with the NICS provider;
- b. provision machine processable Service Level Agreements which can be audited by all members of the agreement including the Government; and
- c. properly label servers, and provide a means to easily locate server racks.

In addition to the IT services managed and hosted at the HQ Data Center, Operations also shares responsibility for services housed at HQ's but managed by external contracts (WEST/EAST/NDC, etc). To support their coordination role the contractor shall:

 a. actively participate in configuration control, problem escalation/resolution, installation, and ITS with counterparts on other contracts or at other Centers in order to assure that failures of services are minimized; and

DRD	Description	Frequency
DRD #45	Reserved	
DRD #46	Service Level Agreement Audit.	Six months from contract start date.

#### **6.2 Hours of Operations**

The contractor shall provide on-site operations and maintenance support to all HQ systems. Support includes, but is not limited to, HQ based services, specialized services for commissions and study groups, file storage and data recovery, financial system portals, and similar services that are critical to business support for HQ customers. On-site support shall be provided during

the Prime Time hours of 6:00 am until 6:00 pm Monday through Friday (except for holidays). During Non-Prime Time hours the contractor shall respond to the automated alerts, the Help Desk, or Government notification within 15 minutes. If the problem cannot be resolved remotely, arrive on-site within two hours of the initial notification.

#### 6.3 Server Management Team (SMT) Operations

NASA HQ hosts general service as well as specialized application and file servers that, along with large storage, backup and other associated hardware, comprise the HQ service infrastructure. HQ hosted services include, but are not limited to, personal and organizational file storage, database and web applications servers, LDAP and certificate servers, monitoring and intrusion detection servers, and streaming media encoders. These services are reliant on devices that include UNIX computers, mirrored Network Attached Storage devices, Storage Area Network devices, enterprise tape library system, Windows, Solaris and Linux Operating Systems, appliances, power supplies and monitoring equipment. HQ also houses agency services such as Internet Protocol Address Management (IPAM), Domain Name Service (DNS), NASA Consolidated Active Directory (NCAD), and intrusion detection devices. The service infrastructure largely conforms to a design goal of uninterrupted service. As a result, many of the servers are in a High Availability (HA) implementation and all are expected to be monitored 24 X 7. The goal for all of HQ hosted servers and appliances is to provide optimum performance and consistent availability to customers 99.99% of the time, 24 hours a day. The goal for HQ housed servers is the same as for hosted unless superseded by an ITCD signed or concurred MOU or OLA.

DRD	Description	Frequency	
DRD #47	Availability of hosted and housed	One month from contract start	
	services.	date, monthly thereafter.	
DRD #48	Performance of hosted and housed	One month from contract start	
	services.	date, monthly thereafter.	

Metric	Description	Performance Level to Achieve Fee
Metric #10	Data Center Availability. Data	99.90% - 99.98% average
	Center systems and services (hosted	availability.
	and housed) shall be available on a	
	24 X 7 X 365 basis.	

#### **6.4 HO Hosted Server Operations**

Hosted servers largely have services that are provisioned by HQ. For hosted services, the contractor shall:

 a. maintain transaction and service logs of servers and services within the HQ computer center;

- b. assure that quality and timely services are available;
- c. assure performance is responsive to OLA and Government direction;
- d. coordinate and perform upgrades;
- e. maintain hardware & software:
- f. enable accounts;
- g. be actively engaged in problem coordination, analysis and resolution;
- h. co-develop fail-over strategies, service integration, and budget planning;
- i. administer, plan, manage and provision storage;
- j. provide quantitative capacity planning;
- provide security reporting, monitoring and management reporting, and Help Desk coordination; and
- support in special projects to support Agency and HQ initiatives as well as special commissions and review boards.

## 6.5 HQ Housed Server Operations

There are several agency IT assets which currently provide critical services to the HQ customer community and to the successful operations of the HQ Data Center. Those services are housed within the HQ Data Center, and their configuration, management and monitoring is performed by Office of the Chief Information Officer (OCIO) organizational entities via the I³P or other contracts. These include Active Directory servers/services, Internet Protocol Address Management (IPAM), (DNS/DHCP) servers/services and NCAD servers/services. Coordination for environmental issues, alert notification, trouble shooting, restoration and process modifications are some of the activities required by the HITSS contractor. To meet these responsibilities the contractor shall:

- a. maintain and test a verified call list and escalation process;
- b. coordinate and perform any needed environmental changes;
- c. coordinate and execute needed configuration or restoration in conformance with CCB process;
- d. co-develop process changes; and
- e. report anomalous conditions.

# 6.6 Monitoring, Management and Capacity Planning

To facilitate lifecycle management, virtualization, migration, debugging and sound business processes the contractor shall provision a continuous monitoring capability that enables ad-hoc views and analytics of the HQ service infrastructure. Severs and services within the HQ Data

Center are monitored using a robust implementation of Nagios that provides visibility in CPU, cache, I/O and other critical indicators that help determine use, availability, capacity and trends. The contractor shall support NASA in planning for and implementing changes to servers associated with determining the capacity and utilization of application servers and infrastructure servers. The contractor shall:

- a. manage, install and maintain the performance monitoring and capacity planning tools at the HQ Data Center;
- monitor for software performance and capacity planning changes inclusive of CPU utilization, memory usage and notify the performance monitor accordingly;
- tune, adjust and modify systems and associated software for optimum performance within established security and CCB processes;
- d. assess, with appropriate recommendations, the adequacy and effectiveness of solutions to hardware and/or software problems that are degrading computer system performance;
- e. monitor and manage server use utilization including when it requires the insertion of
  equipment or agents into discrete components, devices, or the operating systems in order
  to identify and isolate anomalous conditions;
- f. study trends, harvest and analyze data from existing management tool databases, develop new processes and procedures, and recommend innovations to ensure peak performance and availability of the service;
- monitor, manage and provide trending views of services with data exchange agreements to assess the frequency and success of exchanges between those services within the HQ Data Center;
- use structured and sound analytics to determine level of server use, peak use, and trends
  fact-based forecasts and modeling to assure levels of storage, memory, cache, and similar
  server subsystems are able to efficiently manage current services as well as determine
  capacity for growth or additional hosting requirements;
- provide on-call, continuous support and shall respond within 15 minutes to the automated notifications from the HQ Data Center. Arrive on-site, if necessary, within two hours of the initial notification;
- j. ensure agreements that document, manage, audit, and modify Data Exchange Agreements are in place between and across all relevant systems within the HQ domain. The agreements will be living documents used to assess performance delivery and reused to extend service;
- k. operate and maintain all of the servers, data storage devices systems and subsystems that together comprise the HQ Service Infrastructure which provides services at HQ from inside the HQ campus or externally;
- deploy and maintain all servers in accordance with the operating system and application configuration benchmarks published by the Center for Internet Security (CIS) as adopted by NASA Headquarters;

- m. develop, acquire, secure, sustain, operate, or recommend system service enhancements, upgrades, or new capabilities. Proposed implementations shall provide an integrated approach with respect to existing systems, other work in progress, and applicable policies, standards, and methodologies while maintaining optimum security and performance;
- n. coordinate hosting, relocation, enhancement and debugging activities with application development personnel, system administrators, the IT Security team, SE&I, Outreach, CM, and Help Desk, I<sup>3</sup>P contracts, and any other group or individual that may be impacted by a change or require SMT to support a change;
- support the service capabilities at service levels in accordance with OLAs that ensure that
  the availability requirements are satisfied. This support shall quickly respond to changes
  in technology, IT Security threats and incidents, dynamic requirements and system,
  equipment, software, service, and carrier outages;
- notify ITCD as early as possible of the need for outages or reduced services due to IT Security threats and/or incidents, investigation of anomalous behaviors, equipment failure, or other contingencies that cannot be scheduled;
- q. provide planning, definition, design, security, development, acquisition, implementation, maintenance and sustaining engineering support for new server systems or subsystems,
- ensure that all CM documentation including diagrams, System Description Documents (SDDs), processes and procedures for the HQ Data Center devices and services is maintained and accurate;
- develop, implement and maintain procedures, policies and standards to provide effective performance tuning and capacity planning such as service, memory, and processor utilization, and application performance;
- t. provide analysis and growth projections for all supported systems;
- u. provide and have accepted monthly capacity reporting and recommendations within 3 days of the end-of-month;
- v. monitor, maintain, and administer Headquarters Mailman List servers and services;
- w. analyze performance of all supported systems (e.g. servers, storage systems, etc.) and provide monthly reports and have them accepted within 3 days of end-of-month.
   Performance Tuning will be accomplished to improve system performance; and
- leverage data acquired and analytics performed to properly plan the data center's migration to its optimum configuration.

DRD	Description	Frequency
DRD #49	Diagram of server location.	Three months from contract start date and every 3
		monthsthereafter.

DRD #50	Diagram of servers logical connection to network.	Three months from contract start date, on-demand thereafter.
DRD #51	Capacity and Performance Report.	Two months from contract start date, on-demand thereafter.

# 6.7 Server Backups

The contractor shall perform regularly scheduled backups of servers and data storage devices in accordance with current SOPs. The contractor shall:

- a. restore files on an on-demand basis;
- b. conduct regularly scheduled quality assurance and process tests for the restoration process;
- c. test the restoration process end-to-end at least twice each year and make recommendations.
   The first test shall be within the first 90 days of contract start
- in the event of any contingency operations, current files and services must be available for recovery at remote sites; and
- e. support the planning integration, coordination, and operations required to mirror selected files and storage devices at a designated remote location.

## 6.8 System Software Installations, Maintenance and Management

The contractor is responsible for assuring that server operating systems and affiliated libraries, patches and administrative software is up-to-date. The contractor shall:

- a. monitor and report on system performance, availability and security;
- b. participate or lead debugging and trouble shooting;
- c. implement and maintain updates, corrections and enhancements to subscription services, operating systems and other commercial software packages;
- d. ensure that licensing and certificates on servers do not expire;
- e. ensure that all *applicable* commercially released OS upgrades, software enhancements, and patches are installed quarterly for Unix-based servers (approximately 201 for Unix and 63 for Linux per quarter), monthly for Windows-based servers (approximately 250 per month) and on-demand for appliances. Security patches may occur out of normal scheduled upgrades. The contractor shall submit the appropriate *Change Request or* Service Request to start the work so that the enhancement or patch can be completed on all supported devices within the year time frame requirement. The CCB process shall be used to govern the schedule should delays be necessary to:
- f. ensure HQ Data Center software is in operating condition, current, with up-to-date maintenance, and is secure;
- g. install and/or make updates to system software at a time that will not affect user productivity;
- h. develop and maintain required test procedures or simulations to properly test software upgrades, modifications and maintenance;

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- provide an ongoing program to evaluate new commercially available software and provide reports including recommendations to designated NASA management;
- j. ensure all operational support software modifications are installed, secure, work as expected and that no problems have been detected;
- k. prepare a system software implementation test and release plan for each release or software package update and present it for approval of the performance monitor
- 1. maintain subscriptions to the OEM system software services;
- m. review OEM web sites for failure, security, and enhancement information and install updates or patches as appropriate; and
- n. manage and maintain hardware and software maintenance agreements for all production systems.

DRD	Description	Frequency
DRD #52	Quarterly/Monthly Patch Release	One month after contract start
	Report.	date, monthly thereafter.

Metric	Description	Performance Level to Achieve Fee
Metric #11	Compliance with Patch	95% - 98% meet the criteria.
	Management Plan. Data center	
	servers shall be patched in	
	accordance with the approved	
	patch management plan and	
	schedule.	

#### 6.9 Equipment Upgrade Support

The contractor shall provide, at a minimum, a semiannual evaluation of new commercially available equipment for use in the HQ Data Center and provide recommendations to NASA management.

DRD	Description	Frequency
DRD #53	Equipment Upgrade Evaluation	90 days of contract start date
	Report.	and semiannually thereafter.

# 6.10 Account Administration

NASA has implemented the NASA Account Management System (NAMS), as part of NEACC (NASA Enterprise Applications Competency Center. Currently, NASA HQ new application

account requests, changes and deletions are processed through NAMS. HQ Account Administration staff receives notification from NAMS when all the required approvals have been made for account requests and proceeds with provisioning the application access. There are other, local, IT services where account provisioning and coordination is the responsibility of the HITSS contractor. This includes accounts for HQ network domain and data servers, File Transfer Protocol (FTP), and HQ custom applications. Among the responsibilities for account management, the contractor shall:

- a. maintain up-to-date procedures for coordinating with IT Security, Help Desk, NAMS and others for account creation, modification and deletion;
- b. provision password resets for local applications via the Help Desk processes;
- provision user accounts for custom applications (approximately 50 new accounts and 50 deletions per month);
- d. create Guest Network accounts;
- e. provision new standard personal Microsoft networked folders;
- support modifications to process and provide support to meet future NASA account services; and
- g. adhere and comply with applicable regulations and policies (e.g., HSPD-12, NPR 2810.n,).

#### 6.11 Operational Support for IT Security

The HITSS contractor is responsible for management of the ITS function within the Headquarters' infrastructure including the Data Center and to coordinate observations of anomalous behavior, analysis of threats as well as threat responses with those in the ITS, network and HQ IT communities. (see ITS section 8.0). The contractor shall:

- a. maintain a clear and complete understanding of all internal network protocols used and associated internal-to-internal and internal-to-external source(s)/destination(s);
- maintain an escalation and analysis call list for all points-of-contact required in resolving ITS operations problems;
- c. provide anomalous behavior analysis, status and reporting during Prime Time hours and;
- d. report any identified anomalous behavior at Daily Tag Up..

DRD #54	Reserved	

## 6.12 Physical Control Support

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Because of the sensitivity of the systems and services within the Data Center, and because of the potential damage that could be done by an individual who has physical access to the hardware and network within it, the NASA HQ Data Center has restricted access which must be vigorously maintained by the HITTS contractor. The contractor shall:

- a. monitor the physical security of the HQ Data Center and all sensitive unclassified automated information resources within the HQ Data Center;
- work closely with HQ Security to control HQ Data Center access provided to contractor and subcontractor personnel;
- c. comply with the policies and procedures for HQ Data Center physical security in accordance with established procedures; and
- d. Maintain server racks and server facilities in a clean, safe, and well organized way.

Commented [Id20]: Reflects current state since start of

#### 6.13 Environmental Control Support

The NASA HQ Facilities and Administrative Services Division (FASD) is primarily responsible for provisioning the environmental systems and power that support the HQ Data Center, however co-monitoring and coordination is critical to the safe operations of the HQ Data Center. The contractor shall continually monitor the environmental conditions of the HQ Data Center. The contractor shall immediately report all anomalous conditions to ITCD and to FASD. The contractor shall maintain a verified call and escalation list.

### 6.14 Technical Documentation and Data Center Reporting

The contractor shall develop, contribute, implement and/or update technical documentation for the HQ Data Center. Technical documentation shall include policies, operations, and guidelines. The contractor shall provide HQ Data Center System Assessment and Metrics Reports.

DRD	Description	Frequency
DRD #55	Data Center (including SEF) SOP	Six months from contract start
	Audit & Recommendations Report.	date and on demand thereafter.

## 6.15 Outage Notification

The contractor shall notify ITCD as early as possible of the need for outages or reduced services due to new security threats, investigation of anomalous behaviors, equipment failure, or other contingencies that cannot be scheduled. The contractor shall categorize activities as to whether they are security, equipment, service or software related on a 24/7 schedule and provide recommendations and take appropriate actions. If the anomaly is concluded to be equipment, service or software related, report to the performance monitor and take appropriate action(s) during normal working hours and within 3 hours for after hour occurrences

#### **6.16 Printing Support**

All printing support will be moved to the I<sup>3</sup>P contracts. NASA HQ migrated 100% to /ip-based printing and away from print servers; therefore, there is only a minimal amount of work effort in this area. The exception is support for the PRGate print server which is in place to provision /ip printing across the HQ security zone for visitors using our guest wired and wireless network. NASA HQ does not anticipate a reversal to our elimination of print servers. To support printing the contractor shall:

- a. assure timely and coordinated service upgrades on the remaining print server, PRGate;
   and
- b. assure timely support and coordination for any security issues.

(Moved to Section 4.4.2)

# 7.0 Systems Engineering and Integration (SE&I)

The Systems Engineering & Integration (SE&I) function provides technical leadership in path finding, analysis, trouble-shooting and expertise in Information Technology, Information Security and Computer Science disciplines. As the technology leaders and lead analysts, the SE&I staff is tasked in areas of innovation, agency integration, systems design, requirements formulation and documentation, planning and to quickly resolve escalated problems.

The Systems Engineering & Integration support portfolio at NASA HQ is comprised of five areas of emphasis; (1) assurance that all new IT capabilities and services are designed and implemented in the most efficient and effective manner, (2) technical forecasting, studies conducted in areas that advance the goals of HQ IT, (3) participation in agency and external working groups, (4) advanced trouble shooting and problem resolution, and (5) HQ IT planning. There is an SE&I testing facility adjacent to the HQ Data Center and is specially purposed for testing, build-outs, vendor demonstrations and analysis (currently there are approximately 50 SE&I Service Requests initiated per year).

# 7.1 Innovation Program

NASA HQ customer's require agile adaption to organizational change or business needs. As a result, innovation must permeate all facets of this contract. To facilitate this requirement, ITCD has established an Innovation Program. To directly support this program, in conjunction with ITCD's CTO the contractor shall evaluate and investigate new and emerging applications technologies and approaches; and analyze and recommend technologies for integration and use within the NASA development and/or operational architecture. The contractor shall:

a. explain how specific new technologies can contribute to meeting ITCD's goals;

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- provide analysis of new and emerging applications technologies capabilities and maturity readiness;
- c. analysis of alternative technologies (new or existing) that the ITCD should consider;
- d. how a technology may fit into the NASA Enterprise Architecture;
- e. analyze readiness factors for insertion of new technologies;
- f. provide life cycle cost analysis for the proposed technologies;
- g. provide technical demonstrations of evaluation packages; and
- develop and maintain an online environment that provides details to innovative technologies and solution sets that aligns and conforms to similar systems at other centers

DRD	Description	Frequency
DRD #56	Reserved	

#### 7.2 IT Service Design, Integration & Implementation

IT Services may include everything from migrating point to point data exchanges, to integrating multi-touch interfaces, to implementing rules engines to utilizing cloud algorithmic services. The contractor shall ensure that proposed implementations provide an integrated approach with respect to customer business needs, requirements, existing HQ IT infrastructure, future direction, IT Security, work in progress, and applicable NASA policies, standards, and methodologies. This integrated approach shall encompass the architecture, equipment, software and data associated with the HQ environment and driven by requirements and use cases. Occasionally, establishment, enhancement or extension of a service capability may include other NASA centers or customers outside of NASA HQ.

In order to align ITCD with the Agency's strategy for data centers, the contractor shall develop, submit and regularly update a Data Center Modernization Plan, detailing plans during the upcoming period and the top five to ten quantifiable objectives expected to be achieved. The Government and Contractor will discuss, modify (if necessary), and agree to the top five to ten objectives, which will form the basis for a portion of the incentive fee determination (technical performance) during that period. The contractor shall submit a report at the end of each period to describe the accomplishments against the objectives met from the previous period and which 5-10 objectives will be targeted for the next period. The Data Center Modernization Plans shall align with the general guidance in section 2.3.1 and 2.3.2 of this Performance Work Statement.

DRD Description	on Free	quency
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DRD #57	Data Center Modernization Plan	Initial plan three months from
		contract start date; updated plan
		at six months, and annually
		thereafter.

# 7.2.1 System Engineering Requirements & Analysis

As the technical leads in several areas, it is critical that the SE&I requirements analysis documentation is valid, timely and complete. The SE&I requirements process will be in conformance with the EA/CCB guidelines. The contractor shall be responsible for:

- a. the collection, interpretation, generation, validation and documentation of requirements for IT systems and services;
- b. assurance that derived requirements are captured and documented;
- requirements gathered and documented at a sufficient level of detail and in a form that is
  useful for the Government, or another Government contractor or used as part of analysis
  requested by a HQ customer;
- d. annotation of requirements generated by another NASA, Government or vendor to depict relevance to the HQ IT infrastructure or point of view;
- assessments to resolve near-term operational issues, implementation strategies, improve services, advance information management, reduce risks, reduce costs or to improve the customer experience; and
- f. analysis, interpretation, studies regarding changes to technology, policy or lessons learned which may benefit or impact HQ IT customers, infrastructure, or plans.

#### 7.3 Systems Engineering Design

Design solutions must meet or exceed use cases and address all requirements. The contractor shall be responsible for:

- a. designs to meet the documented requirements;
- designs consistent with Internet, Industry, Agency and / or HQ standards, architecture or design targets (e.g. High Availability);
- c. designs consistent with rigorous application of design-to-cost methodology;
- d. specifications for systems, components, equipment, and software, services, supplies and Concept of Operations (ConOps) that implement the design;
- e. written documentation of all designs, in accordance with Industry, government or NASA HQ standards;
- f. design coordination with the HQ IT Security, Operations, Applications, and other appropriate groups to ensure that risks are minimized and that security requirements are being adequately addressed and satisfied;

- g. design reviews to ensure that a design meets documented requirements and architectural target, consideration of human factors (e.g. usability, training), engineering principles (e.g. minimizes security risks, and effectively and efficiently uses HQ and/or NASA IT resources); and
- design and specification reviews that are in accordance with Configuration Control Board processes.

#### 7.4 Systems Integration & Implementation

Assurance that designs of proposed solutions are made available and are supportable within our infrastructure demands thorough analysis and coordination. The contractor shall be responsible for:

- a. a systems view, understanding the interdependencies between HQ, Center, contractor services, agency services, and Internet services;
- implementations that provide an integrated approach with respect to existing HQ IT infrastructure, customer support, IT Security, other work in progress, and applicable NASA policies, standards, and methodologies;
- c. implementations to enhance or extend a service or capability to HQ that is part of other NASA, government or business partners;
- d. implementations to enhance or extend a service or capability within HQ, to other NASA Centers or to customers outside the Agency;
- e. staying current with evolving systems designs and implementations to ensure integration with other NASA systems or services (e.g. I<sup>3</sup>P, ITS, pilots, etc.); and
- build out of new servers & services, installation applications, production servers support maintenance.
- g. keep accurate, auditable as-build diagrams, POC documentation, OLA and Data Exchange Agreements (DEA), call-down return to service information, and ITS status for all items in the HQ Data Center.

DRD	Description	Frequency
DRD #58	Data Exchange Agreement Audit and	Six months from contract start
	Gap Analysis	date.

# 7.5 Forecasting, Studies and Development

The contractor shall maintain awareness of new trends in technologies, evolution in services, and developments in service delivery strategies that are emerging in academia, standards communities, Industry or Government at sufficient levels to recommend innovations and to determine applicability, readiness and impact. The driver is a continual assessment to identify opportunities to improve the provisioning of IT services, increase capability, decrease costs, and improve information services to the customer. The contractor shall:

- a. provide assessments based on sound analysis to implement new capabilities that either advance ITCD's stated direction or that are game-changing and warrant augmentation of target states;
- b. provide path-finding and technical reviews that indicate important trending and areas to watch;
- offer analysis, whitepapers, trending and similar products to stimulate possible direction or to elevate awareness of potential changes to HQ IT;
- d. provide assessments of white papers, initiatives or the proceedings from working group sessions that are conducted under the auspices of the NASA Chief Information Officer (OCIO), conferences, and seminars;
- e. conduct technology comparative analysis that evaluate emerging IT technologies and services that have not yet been introduced to the NASA or HQ IT environment to determine their applicability, feasibility, trade-offs and cost-benefit to HQ or the Agency's mission, customer or project support requirements;
- f. interview, participate and otherwise facilitate the collection of input from the Customer Advisory Committee and other stake holders to identify business needs and utilize them to develop the Tactical plan initiatives;
- g. conduct analysis of customer and HQ IT business needs and draft the associated Tactical Plan initiatives to meet or address customer needs;
- h. perform pre-release testing, (when approved by the CCB process) new monitoring, management, or operating systems, load balancers, network subsystems, video integration, nomenclature/metadata management, incomplete query, model-based planning and other tools supplied by contractors or available in open source;
- i. provide reviews and assessments of working group activities within the auspices of the OCIO, standards, industry or government working groups or of conferences and workshops:
- j. provide input to the development and update of the HQ Tactical Plan, Strategic Plan, or Integration Plans;
- deliver each assessment as a written document or in HTML on a designated site using appropriate metadata; and
- provide recommendations and update the Tactical Plan quarterly as conditions change or modifications or updates are made to Federal, Agency, or HQ regulations, policies, or strategic direction occurs.

DRD	Description	Frequency
DRD #59	HQ Tactical Plan.	On demand.

Metric	Description	Performance Level to Achieve Fee

Metric #12	Delivery of Annual Tactical Plan	50% submitted on time.
	and Updates on demand. Tactical	
	Plan shall be fully documented	
	and delivered annually after IT	
	Board of Directors' approval; or	
	Tactical Plan Status Report shall	
	be provided on demand to reflect	
	current status and projections.	

# 7.6 Agency and External Support Initiatives

The contractor shall support in planning for and accomplishing the IT integration necessary to implement Agency initiatives at HQ. In some instances this support includes ensuring that cross-Center and cross-Agency systems work effectively and can exchange information while adhering to NASA IT security requirements. The contractor shall:

- a. support in planning for and accomplishing the IT integration necessary to implement Agency initiatives at HQ;
- ensure that cross-Center and cross-Agency systems work effectively and can exchange information while adhering to NASA IT security requirements;
- c. provide assessments of security, performance, cost and process impacts that Agency initiatives may have on the NASA HQ infrastructure; and
- d. support or consult in IT Security assessments and or penetration testing and in any required countermeasures.

#### 7.7 Support OCIO and other projects, working groups

NASA programs and projects traverse many NASA Centers, often with Program leadership residing at HQ. From an IT perspective, HQ is an important participant in Agency OCIO activities to improve uniform capabilities across all of NASA. Achievement of these goals requires analysis of alternatives for governance, management and technology, often at working group levels or in fielding cross-center projects. The contractor shall:

- a. participate in weekly/monthly Agency working group telecons and attend annual/semiannual Agency Face-to-face meetings (approximately 20 working groups totally 100 labor dollars per month and support for 8 face-to-face meetings);
- b. monitor and report working group activities;
- c. track actions, scheduling and facilitating the preparation of responses;
- d. consult with and debrief the HQ CIO and staff regarding impacts to budget, schedules, infrastructure and levels of effort;
- e. support the provisioning of services by a NASA Center, another Federal agency, or a private entity to NASA HQ, or by NASA HQ to another organization;

- coordinate seamlessly with external contractors in order to achieve successful implementation;
- f. support in the development of extended and distributed service models;
- g. draft memoranda of agreement / Memorandum of Understanding and Service Level Agreements and development of the online template DBMS entry; and
- develop and document web-services or, if needed, point-to-point data exchange agreements.

# 7.7.1 HQ Support to Identity, Credential, Access Management (ICAM) and Supporting Systems Infrastructure

To conform to Federal regulations, NASA is taking steps to centrally control physical and IT resources in the areas of Identity, Credential, and Access Management (ICAM). This effort is being implemented through several related Agency-wide projects to track and validate identities, and to provide for centralized authentication and authorization for both physical and logical access to NASA resources. The Agency ICAM program is in direct support of Homeland Security Presidential Directive (HSPD) 12. It was renamed to better align integration of HSPD-12 with NASA business processes.

The Contractor shall act as a technical point of contact, and provide consulting, engineering, application development, communication and training, and sustaining operations support as needed for all ICAM-related projects, as well as new projects which may be started under the auspices of ICAM. Currently the following systems are within scope of ICAM:

- Common Badging and Access Control System (CBACS);
- Desktop Smart Card Integration (DSI);
- NASA Enterprise Physical Access Control System (EPACS);
- Identity Management and Account Exchange System (IdMAX);
- NASA Account Management System (NAMS);
- Two-Factor Token Infrastructure (TFTI);
- NASA Enterprise Directory (NED);
- NASA Consolidated Active Directory (NCAD).

# 7.8 Special Analyses, Studies, and Tasks

Subject to the issuance of service requests or tickets, the contractor shall conduct special studies and analyses addressing a variety of IT-related topics. Examples of support that the contractor may be called upon to provide include:

- updates to the Office of Diversity and Equal Opportunity Discrimination Complaints Management System to include new fields and reports as well as interactive features;
- action tracking systems that will allow HQ offices to capture, assign, and manage to completion actions generated both internally and received through official Agency channels;
- technical analyses of draft NASA and federal policy documents to determine their impact on NASA's IT capabilities and environment;
- analyses of life cycle documentation of systems developed/proposed by federal agencies for NASA's use to determine adequacy of requirements, design, security considerations, etc.;
- analyses and studies to support NASA HQ in complying with Section 508 of the Rehabilitation Act, the Privacy Act, the Federal Information Security Management Act, Homeland Security Presidential Directive-12 (HSPD-12), and other IT-related directives, statutes, and implementing regulations;
- tracking, analyses, and compilation of information on IT security bulletins issued by the U.S. Computer Emergency Response Team (US-CERT) and other organizations.

## 7.9 Advanced Trouble Shooting & Problem Resolution

The contractor shall provide engineering support for the operations, maintenance and enhancement of all NASA HQ IT infrastructure, applications and services and function as a centralized capability for escalation of technical issues. The contractor shall:

- a. provide support to resolve issues with the design, installation, configuration, testing, securing, upgrade, or diagnoses of problems with computer room, network, application, and security assets;
- b. provide support to resolve issues locally that may be part of agency or government-wide solutions;
- c. respond promptly to requests for trouble shooting and resolution; and
- d. recommend methodologies to proactively model systems to determine if a problem is likely to occur.

# 7.10 IT Planning

Planning activities include assuring that business drivers and requirements are in alignment with process change and IT service implementation. Structured planning is essential in several areas for HQ IT (e.g. agency integration, reaction to changes in organizational roles, changes to policy, threats, technology, and more fundamental changes in how services are provisioned or capabilities introduced. The contractor shall:

- a. participate in the development of HQ IT Tactical, Strategic and budget planning
- develop a resourced schedule and integrated plan that will guide HQ in completing NASA strategic IT initiatives;

- assure alignment with NASA's Information Resource Management (IRM) Strategic Plan, Open Government Initiatives and similar external drivers;
- d. assure alignment of requirements to implementation and solution to business driver by Enterprise Architecture techniques; and
- e. assure alignment to Agency's and HQ IT Capital Planning and Investment Processes.

# 7.11 IT Systems Engineering & Integration Test Lab

The contractor shall maintain and operate the HQ IT Systems Engineering and Integration Test Lab. The lab is used to replicate the HQ infrastructure sufficiently for testing and acceptance of new services, evaluations of potential services (prototypes and proofs-of-concepts), build-outs, vendor testing, and debugging. A staging area of the lab with specialized network policy is used for pre-deployment testing and checkout of applications, services, or new operating systems. Because changes to form, fit or function of the HQ infrastructure is not permitted without thorough testing and approval by the CCB, the maintenance and currency of the lab is critical to assure sufficient simulation of the HQ IT service infrastructure. The contractor shall be responsible for applying technologies in support of customer tasks encompassing deployment of web, multimedia, or virtual environments, maintaining optimum configuration controls, scheduling individuals, and support to ensure that the correct hardware and software is on hand. The lab is staffed to facilitate setups, tear downs, support for engineering, developers, vendors and HQ customers. To sustain and operate the IT test lab the contractor shall:

- a. maintain a log of tests that occurred with results;
- b. maintain a schedule of testing required (approximately 37 instances of testing per month);
- c. assure testing assets are ready and available prior to scheduled tests;
- d. maintain detailed knowledge of the HQ production environments (e.g. workstations, servers, networks, and security);
- e. maintain a detail knowledge of potential agency environments required for simulation;
- f. document and assess the impact or risk of any areas that cannot be simulated and their effect on the testing conducted;
- g. assure and document the as-built and build out of lab service infrastructure in support of simulating test environments;
- h. validate test plans;
- maintain, operate and coordinate the SE&I Test Lab's network, connectivity, IDS, monitoring and staging in accordance with HQ and agency security policy and operational procedures and assure that production data is controlled and limited to the pre-production/staging segment of the lab; and
- j. manage, coordinate, trouble-shoot and otherwise ensure operational stability between the SE&I Test Lab and the HQ network service provider.

Reserved	

# 8.0 IT Security (ITS) Program

Protecting the Nation's intellectual and computational assets, NASA's information, our customer's privacy, and our ability to perform work without interruption are all critical goals for our IT Security team. Our commitment and emphasis in IT Security is integrated in all of our processes including prevention, recovery, compliance, and analysis. This emphasis extends to our internal systems, the contractor's environment, and external systems accessed by our customers. ITS planning, implementation, and compliance is integral to all work performed under this contract, and therefore is not limited to the contractor's IT security staff. The contractor is responsible for ensuring that all of the services it provides complies with Federal law as well as Agency and HQ policies, processes, procedures, regulations, requirements, and standards. The contractor is also responsible for providing technical and managerial support for the HQ ITS Program, which is under the direction of the HQ IT Security Manager (ITSM). The Contractor shall document their approach to managing information security in an Information Security Management Plan to be delivered within one month from contract date. This plan shall be reviewed and updated at least annually.

DRD	Description	Frequency
DRD #60	Contractor Information Security	Within one month from
	Management Plan.	contract start date, updated
		annually thereafter.

## 8.1 Contractor Support for Headquarters ITS Program

The contractor shall provide comprehensive ITS support to the HQ ITSM. The activities associated with this support are those for implementing the policies, processes, procedures and guidelines of Federal Information Security Management Act (FISMA), the Computer Security Act of 1987, OMB Circular A-130, NPR 2810.1, NPR 1600.1, NIST Special Publications and Federal Information Processing Standards (FIPS), and other Agency/HQ policies, processes, procedures and guidelines governing the protection of information resources. The following are specific security support requirements that enhance selected governing security items.

## 8.1.2 Standards and Procedures

The contractor shall develop and maintain security standards and procedures for a broad range of IT operations and support in accordance with Federal and NASA policies, requirements, and guidelines. Categories include, but are not limited to:

- System access controls;
- Account management controls;

- Technical, network, and environmental security controls;
- · Risk management;
- Information System Security Authorization (ISSA)
- Virus detection and eradication;
- Encryption
- Vulnerability monitoring and scanning;
- Penetration testing;
- Remote access;
- Secure communications;
- Security monitoring;
- Personnel screening procedures;
- Incident handling response and reporting controls;
- Contingency planning;
- Application development security controls; and
- · Auditing metrics.

# 8.1.3 HQ Draft Policy, Requirements, Procedure, and Standards Development

The contractor, when tasked by the HQ ITSMs, shall develop draft NASA HQ policies, requirements, and procedures for review and approval through established HQ procedures. Documents shall be accurate, complete, professional, and tailored for audiences inclusive of non-ITS personnel.

DRD	Description	Frequency
DRD #61	Draft Policy, Requirement,	On demand.
	Procedure, or Standard.	

# 8.1.4 Support of ITS Program Meetings

The contractor shall provide the HQ ITSM schedules and status of completed, current, and future ITS program projects on a bi-weekly basis. The contractor ITS program lead, or designated alternate, shall attend Agency ITS teleconferences and off-site NASA ITS working group meetings as required.

# **8.1.5 Security Configuration Baseline Documents**

In accordance with CCB approval, the contractor shall develop and maintain security configuration baseline documents. These baseline documents shall provide additional security control configuration details beyond the documented security settings that are required under NPR 2810.1 or other HQ policies or guidelines; i. e., they shall specify security controls in effect for each of the following HQ supported items:

- · Operating systems;
- Personal Digital Assistant (PDA) operating systems;
- Email clients;
- · Web browsers: and
- Publicly accessible NASA HQ Library systems (desktop operating system only).

## 8.1.6 Freedom Of Information Act (FOIA), General Counsel, and Congressional Requests

Upon request, the contractor ITS team shall download and parse user e-mail data from NOMAD (NASA's Operational Messaging and Directory) email service, Tivoli backups of users, or copies of user e-mail files. If no NOMAD or Tivoli files are available, the ITS team will contact the user and arrange to copy their mailbox from their workstation. The contractor ITS team shall electronically search the records based on criteria provided through the HQ ITSM using Paraben E-Mail Examiner or similar software. The contractor shall develop an index for the data. The contractor shall load the index and all data meeting the criteria to appropriate removable media (CD-ROM, DVD, Thumb Drive, etc) and provide at least two (2) copies to the requesting ITSM for delivery to the customer.

DRD	Description	Frequency
DRD #62	eDiscovery Data Search Results.	On demand.

# 8.1.7 Human Resources and Inspector General Requests

The contractor ITS team shall conduct forensic imaging of user workstations in support of HR appropriate use investigations and IG criminal investigations. Data collection may need to occur after normal business hours when the subject and other area personnel are not present. HR requests will usually include analysis of data to identify and capture evidence of inappropriate use of HQ IT resources. IG investigations will usually only require acquisition of data and provide it to the IG Computer Crimes Section for analysis and investigation.

## 8.2 Security requirements for Contractor Provided Services

The contractor shall develop and document management, operational, and technical ITS procedures and controls for all services the contractor provides to NASA HQ. For each of these services, the contractor shall:

a. integrate the ITS procedures and control measures into their full life cycle;

- b. test and periodically review procedures and controls for adequacy and compliance;
- c. allow NASA access to the contractor's and sub-contractor's facilities, installations, technical capabilities, operations, documentation, records, databases and personnel to the extent required to carry out a program of ITS inspection and audit. This access is needed to safeguard against threats and hazards to the integrity, availability and confidentiality of NASA data:
- d. not store, copy, or transfer NASA confidential, Sensitive but Unclassified (SBU), or production data across non-production or development systems and networks, including off-site support systems and networks;
- e. encrypt all electronic data transmissions of risks, threats, and/or vulnerabilities;
- f. for all contractor IT systems storing, containing, or otherwise processing Federal or NASA information be certified and approved to operate storing government information in accordance with Federal and NASA regulations. Hard copy sensitive information and portable electronic devices will be stored and protected in accordance with Federal and NASA regulations;
- g. maintain separation of sensitive IT duties to limit risks require two individuals to access password storage facilities. (e.g. different individuals perform information system support functions for system management, systems programming, configuration management, quality assurance and testing, network security and personnel who administer access control functions do not administer audit functions); and
- h. provide copies of contractor systems with eight business hours upon request for normal requests, the contractor shall provide to the COTR a full, bit-by-bit copy of any system they use to support NASA HQ. For urgent requests, the copy shall be provided within two business hours. This shall be completed using forensically sound software capable of providing image hashing. The copy shall be delivered on media appropriate for the amount of data. The authority to obtain such data is provided by NPD 2540.1G, Personal Use of Government Office Equipment including IT; and the NASA Headquarters Appropriate Use Policy.

## 8.2.1 Compliance with Regulation and Policy

The contractor shall ensure adherence to all of the relevant Federal, Agency and HQ regulations, policies and procedures in the execution of their duties in support of NASA. The contractor shall;

- ensure that all US Government information provided, developed, or acquired under this
  contract is properly secured in accordance with Federal and NASA Requirements
  including but not limited to NPR 1600.1, NPR 2810.1A, NITR's, NASA ITS Handbooks,
  and other OCIO, NASA Office of Protective Services, and NASA HO requirements;
- adhere to applicable policy directives (e.g. NASA Procedural Requirements (NPR) 2810.1A Security of Information Technology; NPR 1600.1 NASA Security Program Procedural Requirements; NASA Policy Directive (NPD) 2540.1G, Personal Use of Government Office Equipment Including IT; NASA Federal Acquisition Regulations (FAR) Supplement 1852.204-76; National Institute of Standards and Technology (NIST) Special Publications (SP) 800 Series and Federal Information Processing Standards (FIPS); NASA Information Technology Requirements (NITR); NASA ITS Handbooks;

- NASA Agency Chief Information Officer (CIO) requirements; HQ policies and procedures; and other governing security items); and
- c. adhere to applicable system & application life cycle requirements including the NIST Guide for Assessing the Security Controls in Federal Information Systems and Organizations, NIST SP 800-53A, Rev1, NIST Risk Management Guide for Information Technology Systems, NIST SP 800-30, and the HQ Security Review Process requirements during all phases of the System and Application Life Cycle.

#### 8.2.2 Privileged and Limited Privileged Access

The contractor shall follow NPR 1600.1, NASA IT Requirement (NITR)-2810-14A, Managing Elevated User Privileges on NASA IT Devices, NASA ITS-HBK-0004, Managed Elevated Privileges Implementation Guidance Handbook, and the Headquarters Contractor Badging and Screening Process. All contractor requests for privileged or limited privileged access shall:

- a. request approval from the HQ Center Chief of Security through the NASA COTR in the event the contractor needs to provide privileged or limited privileged access to one of their employees who do not meet the requirements stated in NPR 1600.1;
- b. not fill positions with, or assign duties that require privileged or limited privileged access to foreign nationals regardless of status; and

DRD	Description	Frequency
DRD #63	Reserved	

#### 8.3 Security Risk Assessments and Design Reviews

NASA relies on the ITS staff to assure that new systems, services and contexts are safe and do not introduce new threats or weaknesses into our environment. The contractor shall:

- a. ensure that system data categorization occurs prior to System/Software Requirements Review (SRR);
- complete a preliminary security risk assessment on a design prior to the Critical Design Review (CDR);
- c. provide design security risks, including possible mitigations, to the line manager or equivalent, data owner, and application owner prior or during official design review. If the risks are accepted the life cycle may continue, otherwise the life cycle shall cease or the design and/or mitigations shall be modified until the risks and possible mitigations are acceptable; and
- d. ensure that the system security plan and risk assessment are completed and/or updated, as applicable, prior to Operational Readiness Review (ORR) (all risks must be accepted by the application and system owner prior to ORR).

## 8.3.1 Security Reviews and Assessments for New or Modified Hardware and Software

The contractor shall conduct a security assessment for all new hardware products introduced on an HQ system. The review shall include research to identify all known vulnerabilities for the product. The assessment shall identify all risks associated with product and recommend mitigation actions. The review shall also ensure that the product complies with the appropriate security configuration baseline. If none exists the ITS team shall also develop one for the product. Completed reviews will be forwarded to the HQ ITSM and system owner for approval. Approved reviews will be forwarded to the contractor ITS ISSA Team lead for incorporation into the appropriate ITS plan(s). The contractor shall ensure that security is practiced throughout the system life cycle for all hardware, software, and supplications managed by the contractor. The contractor shall conduct security reviews and risk assessments for HQ custom applications, new or updated hardware, and new or updated commercial-off-the-shelf (COTS) software products. The contractor shall:

- a. provide the system owner a written risk assessment and security review for new or significantly modified HQ hardware or software, prior to deployment;
- b. use the products reviewed as a basis to update ITS Plans, as applicable;
- c. present to the system owner, prior to deployment, all risks and recommended mitigations (separate from the security plan) for approval. If the hardware or software connects to other systems, the approved risks and mitigations shall also be presented to the system owners of the interconnected systems for their information;
- d. on an ad hoc basis, the contractor shall provide written risk assessments and technical security reviews as requested by the HQ ITSM or NASA COTR. The assessments and reviews developed shall be used as a baseline to update ITS Plans, as applicable. All risks shall be presented to the line manager or equivalent, at least verbally, and subsequently reflected in the applicable security plan. If the system connects to other systems, the risk assessment shall also be presented to each interconnected line manager or equivalent;
- e. conduct a security review for all new COTS software products prior to their installation
  on an HQ operational system component in accordance with the NASA HQ Triage 3 SOP
  (approximately 13 per month). Completed reviews will be forwarded to the HQ ITSM
  and system owner for approval. Approved reviews will be forwarded to the contractor
  ITS ISSA Team lead for incorporation into the appropriate ITS plan(s);
- f. conduct a security review for all new HQ custom applications and application changes developed by the contractor applications development team or developed by others for deployment on HQ systems. Reviews shall follow the NASA HQ Security Review SOP. Completed reviews will be forwarded to the HQ ITSM and system owner for approval. Approved reviews will be forwarded to the Application owner, Application Development Team, HQ Software Applications Manager, and the contractor ITS ISSA team lead;
- g. review annually IDS signatures and firewall rule sets to determine their validity in relation to services provided and associated risks. The results of the review shall be documented, including a description of updates implemented; and
- h. ensure that all systems operated or maintained are compliant with Federal Desktop Computer Controls (FDCC), Center for Internet Security (CIS) Controls, or controls specified in the NASA security configuration baseline documents as applicable.

These baseline documents provide additional security control configuration details beyond the documented security settings that are required under NPR 2810.1 or other HQ policies and guidelines. They specify security controls in effect for each of the following supported items:

- Operating systems;
- Personal Digital Assistant (PDA) operating systems;
- Email clients:
- Web browsers; and
- Publicly accessible NASA HQ Library systems (desktop operating system only).

The contractor shall only deploy, into production, hardware and software, including security related patches or upgrades, which have been subject to a NASA-approved security review.

DRD	Description	Frequency
DRD #64	Security Reviews and Assessments.	On demand.

#### 8.3.2 IT Vulnerability Management, Scanning and Monitoring

The contractor shall manage and monitor IT vulnerabilities in accordance with NPR 2810.1A and NITR-2810-24, NASA IT Device Vulnerability Management. The contractor shall:

- a. conduct and document vulnerability scanning and monitoring, required of each NASA Center, in accordance with NPR 2810.1A and NITR-2810-24 and other guidance provided by the Agency;
- b. use the NASA approved tools and profiles;
- provide ITS vulnerability services each business day by monitoring/reviewing the following:
  - Foundstone vulnerability scans,
  - Patchlink Critical and Critical-01 ratings,
  - NASA SOC distributed bulletins and alerts,
  - US CERT bulletins and alerts,
  - NIST distributed bulletins and alerts,
  - The HQ standard web browser contractor web sites,
  - · The HQ standard email client web site,
  - The operating system web sites for all HQ system platforms,
  - · Vulnerability scans,
  - Relevant emails from the HQ ITSM.

- d. conduct and document monthly vulnerability scans of all NASA HQ owned IP addresses using the NASA approved vulnerability scanning tool and HQ scanning profiles. The results of the HQ tests shall be documented in a monthly report provided to the HQ ITSM. All vulnerabilities found during scanning shall be assessed and distributed per the Vulnerability Reporting and Monitoring section;
- collect and analyze threat alert information from the Security Operations Center, local Intrusion Detection systems (IDS), security scanners, vendor alters, hacker boards and others and provide recommendations for mitigation of IT Security threats (approximately 128 per month).
- f. conduct quarterly wireless 802.11 scanning to discover unauthorized wireless systems which are on or near the NASA HQ wireless network;
- g. submit a quarterly report identifying all detected authorized and all detected unauthorized wireless system;
- h. conduct security scans of incoming devices (laptops, thumb drives, or other removable media, etc) to determine whether they meet Agency and HQ requirements for connection to our private network or insertion into devices attached to our private network. These devices may belong to other contractors supporting NASA HQ or NASA issued devices from another Center. Scans will generally be infrequent but may need to be conducted on short notice;
- report to the HQ CERT, within four business hours after discovery, all unexplained system anomalies found while conducting normal duties that effect confidentiality of data or integrity of a system or data;
- j. report to the Help Desk, all deviations of the HQ Appropriate Use Policy that are observed while conducting normal duties. If an observed deviation is thought to be a malicious activity that affects integrity, confidentiality or availability, it shall be considered a Computer Security Incident and immediately reported to the Help Desk; and
- attend all weekly Agency working group meetings and periodic workshops and training related to scanning and monitoring and keep the ITSMs informed of issues and activities.

When the contractor identifies a vulnerability affecting a HQ system component, it shall be added to the Daily Risk Vulnerability Report. This report shall be distributed encrypted daily to the ITSMs, system owners, and system administrators of HQ systems. The intent of this report is to give system owners and administrators "early warning" of new vulnerabilities and patches that there systems will be required to incorporate. See section 7.1.9 Vulnerability Mitigation for more information.

DRD	Description	Frequency
DRD #65	Daily Risk Vulnerability Report.	Daily.
DRD #66	Monthly Vulnerability Scan Report	One month after contract start
	(encrypted).	date, monthly thereafter.
DRD #67	Reserved	

DRD #68	Quarterly Wireless 802.11 Scanning	Four months after contract
	Report (encrypted).	start date, quarterly thereafter.

## 8.3.3 HQ Penetration Testing

The contractor shall conduct annual HQ penetration testing as requested. These tests may include attack simulations, running automated scanning tools, or conducting physical inspections. The scope of the annual test shall be agreed upon annually in conjunction with the HQ ITSMs and HQ system owners. The contractor shall:

- a. prepare proposed Rules of Engagement, Penetration Test Plan, and a comprehensive schedule outlining activities and anticipated man hours for approval prior to beginning the test;
- b. provide daily status of test activities and findings to the HQ ITSM; and
- c. Prepare a comprehensive Test Report describing the penetration test, methods, results, vulnerabilities, and recommendations for corrective actions and improvements to the NASA HQ ITSM, System Owners, and ITCD Management.

DRD	Description	Frequency
DRD #69	Annual Penetration Test Plan and	On demand.
	Rules of Engagement and Schedule.	
DRD #70	Annual HQ Penetration Testing	On demand.
	Report.	

## 8.3.4 Information System Security Authorization (ISSA) Documentation

The Federal Information Systems Management Act (FISMA) requires all Federal organizations to assure that systems are appropriately classified and the measures to secure them are adequate. The contractor shall follow the accepted process for monitoring, analysis, recommending and provisioning risk-based acceptance criteria as directed by the Government.

#### 8.3.4.1 NASA Internal Systems

In support of the ISSA process for NASA Internal Systems, the contractor shall:

- a. develop and maintain ISSA documentation for all internal HQ systems as required under NPR 2810.1A and Federal Regulations;
- assist NASA system and data owners in categorizing systems as well as defining system hardware/software, system boundaries, system interconnections, system responsible officials, and system users;
- analyze the system and provide security control recommendations to the system owner in accordance with NIST SP 800-53 guidance. The contractor shall document all security controls compliance for each system;

- d. conduct a controls assessment in accordance with NIST SP 800-53A guidance and develop and maintain a Plan of Actions and Milestones (POA&M) for all identified risks in coordination with the system owner and operating officials;
- e. conduct authorization activities for all HQ internal systems categorized at the low level in accordance with Federal and NASA requirements;
- f. coordinate all authorization activities, as required, for all systems categorized at the Moderate and high levels;
- g. conduct and document *periodic* controls assessments as required by NASA and Federal regulations; and
- h. update ISSA documentation as changes occur affecting the security of a system
- load and maintain all ISSA documentation in the NASA Security Assessment & Authorization Repository (NSAAR).

## 8.3.4.2 NASA External Systems

In support of the ISSA process for NASA External Systems, the contractor shall:

- a. support, or fully develop and maintain ISSA documentation for NASA HQ external systems at outside agencies, contractors, universities, or other organizations. The extent of involvement will be decided on a case-by-case basis;
- support NASA external system owner, information owner, and accountable official (i.e. NASA authorizing official) in categorizing systems as well as defining system hardware/software, system boundaries, system interconnections, system responsible officials, and system users. The extent of involvement will be decided on a case-by-case basis;
- c. analyze the system and provide security control recommendations to the NASA External System owner in accordance with NASA, NIST SP 800-37 and NIST SP 800-53 guidance. The contractor shall document all security controls compliance for each system as required. The extent of involvement will be decided on a case-by-case basis;
- d. conduct a controls assessment in accordance with NASA and NIST SP 800-53A guidance and develop and maintain a Plan of Actions and Milestones (POA&M) for all identified risks in coordination with the NASA External System Owner and Contractor system operating officials. The extent of involvement will be decided on a case-by-case basis;
- e. conduct authorization activities for HQ External Systems in accordance with Federal and NASA requirements;
- f. conduct, document and provision for continuous monitoring of information security controls as required by NASA and Federal regulations; and
- g. load and maintain all ISSA documentation in the NASA Security Assessment & Authorization Repository (NSAAR).

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Contractor personnel involved with external systems may be required to sign non-disclosure agreements prior to commencing any ISSA activities.

#### 8.3.4.3 Coordinate Risk and POA&M Updates

Prior to each meeting of the HQ Configuration Control Board (CCB), the contractor ITS personnel shall meet with each internal and external system owner (as required) to review system security reviews and mitigation recommendations for the purpose of gaining concurrence. The contractor shall on a monthly basis, coordinate, prepare, and provide an updated POA&M Status Report to the HQ ITSM that reflects the status of each POA&M item for each internal and external system. On a monthly basis, the contractor shall also coordinate, prepare, and provide an ISSA Status Report to the HQ ITSM that includes an update of all ISSA activities that occurred in the last month.

DRD	Description	Frequency
DRD #71	Reserved	
DRD #72	Reserved	
DRD #73	Reserved	
DRD #74	Reserved	
DRD #75	Reserved	
DRD #76	Monthly POA&M Status Report.	One month after contract start
		date, monthly thereafter.
DRD #77	Monthly ISSA Status Report.	Two months after contract start
		date, monthly thereafter.

Commented [Id21]: Removing these DRDs as they are all required as part of the larger A&A process required in the SOW and assured through Metric #15 and the OSSA Monthly Report

## 8.4 Vulnerability Mitigation

The ITS program is responsible for mitigation, response and preventive measures. System vulnerabilities are required to be mitigated in a timely manner. Mitigations shall occur in accordance with the most current NPR 2810.1 and NITR 2810-24, NASA IT Vulnerability Management. Depending on the assessed severity (expedited, critical, high, medium, or low) of a vulnerability and NASA System Owner concurrence with the severity, the contractor shall evaluate, test, and implement mitigation. The contractor shall notify the NASA System Owner when vulnerabilities are mitigated. A permanent mitigation is required for an expedited, critical or a high vulnerability. In some cases a temporary mitigation may be necessary. The contractor shall obtain approval by the NASA System Owner for a temporary mitigation. For a medium or low vulnerability, the contractor may mitigate the vulnerability or present a thoroughly researched recommendation that justifies accepting the risk. The contractor shall comply with the standard and expedited requirements in the Vulnerability Mitigation Requirements Table below. The contractor shall obtain approval by the NASA System Owner for any deviation from the requirements. In some rare circumstances, the NASA Deputy CIO for ITS, the NASA HQ CIO,

or their designees may determine that a particular patch must be applied more urgently. In such cases, all information systems shall be patched in the timeframe specified.

Metric	Description	Performance Level to Achieve Fee
Metric #13	The patch management plan shall	95% - 97% of the time.
	address all vulnerabilities identified by	
	ITSEC-EDW within 30 days,	
	additionally, expedited patches shall be	
	addressed within seven (7) days of	
	Agency notification.	

## 8.4.1 Incident Response

The contractor shall:

- a. Staff and operate the NASA HQ Computer Emergency Response Team (CERT) to respond to IT Security incidents in accordance with the NASA HQ Incident Response SOP (the number of IT Security incidents per month is estimated to range between 10 and 60 incidents);
- b. Conduct a daily review of the SOC Incident Management System (IMS) tickets and acknowledge all SOC IMS tickets assigned to HQ with a Categorization level of either 1, 2, 3, or 4 within one business day, if there is an after hours call down the ticket will be acknowledged within 24 hours;
- c. Conduct a daily review of the SOC Daily Reports, HQ Antivirus Daily Reports, Content Filter logs and conduct any IT Security investigations as appropriate:
- d. Follow the HQ Incident Response Process and document all incidents in the NASA SOC IMS;
- e. Ensure that all SOC incident tickets are processed and closed in a timely manner;
- f. During Prime Time hours of 6:00 am until 6:00 pm Monday through Friday, except for Federal holidays and periods where the Government is not operating under normal circumstances, support the acknowledgement, identification, and mitigation of IT Security incidents. During non-Prime Time hours, respond to a phone call, a NASA SOC or NASA Help Desk notification, or other Government notification within 30 minutes and arrive on-site, if required, within four hours of the Government's request for on-site services; and
- g. Annually conduct incident response training and conduct an incident response exercise in accordance with the NASA HQ Incident Response SOP.

DRD #78	Incident Response Training and Test	Annually by fiscal year's end.
	Report.	

Metric	Description	Performance Level to Achieve Fee
Metric #14	Incident Response. Acknowledge all	Meet the criteria 93% - 95% of the
	SOC IMS tickets assigned to HQ with a	time.
	Categorization of 1, 2, 3, or 4 within one	
	(1) business day.	

## 8.4.2 Incident Reporting

The contractor shall immediately report to the HQ Computer Emergency Response Team (CERT) any known malicious activity or other suspected incidents that negatively affects the confidentiality, integrity or availability of HQ IT resources. The contractor shall immediately report all losses of IT devices, electronic media, or NASA information in accordance with Agency and HQ requirements.

## 8.4.3 Computer Sanitization

The contractor shall develop and implement procedures that ensure IT resources leaving control of an assigned user (e.g., the resource is being reassigned, repaired, replaced or excessed) have all NASA data and sensitive application software removed by a NASA approved technique. Applications acquired via a "site license" or "server license" shall be removed prior to resources leaving the control of NASA. Damaged IT storage media for which data recovery is not possible shall be degaussed by a NASA approved technique or destroyed. All sanitization shall meet the requirements of NPR 2810.1A; NITR 2810-22, *Media Protection Policies and Procedures*; and NASA ITS-HBK-035, *Digital Media Sanitization*.

#### 8.4.4 Computer Anti-Virus Services

The contractor shall provide and properly configure anti-virus software on all workstations and servers. The anti-virus signatures on all systems shall be maintained and updated to the latest signatures as made available by the anti-virus software vendor. The contractor anti-virus server shall, at a minimum make available for distribution to client workstations and servers, updates to anti-virus signature files within two hours of vendor release. The contractor shall ensure that updates to anti-virus signature files are distributed to and activated on all client workstations and servers within eight hours of vendor release.

#### 8.4.6 Account Establishment and Termination Process

The contractor shall follow the HQ process for requesting, establishing, issuing and closing user accounts and authentication devices, including removal of user accounts after contractor employees depart.

## 8.4.7 Security Training

The contractor shall:

- a. ensure all newly hired employees with access to NASA information resources complete NASA ITS Awareness Training within one month of start date;
- b. ensure all of its employees, including sub-contractors with access to NASA information resources, complete NASA Annual ITS Awareness Training;
- support, as required, the development and presentation of NASA Annual ITS Awareness Training for NASA HQ IT users;
- d. employ an effective method for ensuring that all of its new employees, including subcontractors, understand ITS policies and guidance provided by the ITSM and/or CIO as part of the new employee briefing process; and
- e. ensure that all employees with system elevated privileges (1) possess requisite ITS skills in the operating systems they support; and (2) complete NASA elevated privileges training as required by NITR-2810-14A, *Managing Elevated Privileges on NASA IT Devices* and NASA ITS-HBK-0004, *Managed Elevated Privileges Implementation Guidance Handbook*.

#### 8.5 Classified Work Requirements

Specific work performed by the contractor will require some individuals access to classified information, work in a secure area, or both, up to the level of Top Secret/ Secure Compartmented Information (TS/SCI). This work may include requests to assist NASA's Office of Protective Services (OPS) with classified system (e.g. providing technical support) or to collaborate with the intelligence community within NASA and other federal agencies specific to the details of an IT security incidents of a classified nature (e.g. forensics support). See Federal Acquisition Regulation clause 52.204-2 in this contract and DD Form 254, Contract Security Classification Specification. The Contractor shall ensure that key Contractor ITS personnel have the appropriate security clearances, up to the level of TS/SCI, to receive classified ITS threat information, to implement security controls based on such information, or to support other activities that require access to classified information.

#### 8.5.1 ITCD Communications Security Support and Services

The Contractor shall provide COMSEC support and services to NASA HQ, acting as the HQ COMSEC Account Manager (CAM). Contractor COMSEC personnel shall possess and maintain a current TS/SCI level clearance preferably adjudicated within the last 36 months. In general, the contractor shall:

## Attachment A NNH12CF39C September 5, 2014

- a. obtain, purchase, receive, safeguard, issue, provision accounting for, ship, and destroy (as required) all COMSEC material and equipment within the NASA HQ COMSEC account in accordance with Federal and NASA regulations and guidelines;
- b. install COMSEC equipment, software, and keying material; troubleshoot COMSEC related user, equipment, and software problems; and conduct COMSEC user training and security briefings;
- c. conduct HQ-wide COMSEC inspections and inventories consistent with National and NASA COMSEC policy and provide reports to the NASA HQ Information Technology Security Manager;
- d. maintain currency and proficiency on National and NASA COMSEC policies and secure communications equipment;
- e. coordinate with the NASA COMSEC Office of Record (COR) on COMSEC matters in support of the COMSEC function;
- f. ensure availability for services within an agreed to schedule;
- g. ensure a secure work environment inclusive of restricting unauthorized access to the COMSEC manager's material or work area; and
- attend required training, working group meetings and similar authorized COMSEC events.

DRD	Description	Frequency
DRD #79	Quarterly Metric Report summarizin	g Due 90 days from contract
	the transaction history, incidents, and	
	inventories/inspections for that repor	t thereafter
Metric	Description	Performance Level to Achieve Fee
Metric #15	Service Continuity Management	Meet the criteria 85% - 99% of the
	(ITSCM). Description - For the NHCC	time.
	and the HQDEV information systems,	
	within the current contract year, ensure	
	the following:	
	-Sustainment of each system's	
	Authorization to Operate (ATO);	
	-Performance of one (1) Contingency	
	Plan training session and one (1)	
	exercise for each system; and	
	-Performance of one (1) Incident	
	Response training session and one (1)	
	exercise for each system.	

Commented [Id22]: New metric for FISMA compliance.

#### **8.6 IT Service Continuity Management (ITSCM)**

The contractor shall support the overall NASA ITSCM process by ensuring that required IT technical and service facilities (including computer systems, networks, applications, data repositories, telecommunications, environment, and technical support) operated by the contractor and supporting NASA HQ (and other NASA facilities as applicable) can be resumed within required business timeframes. The Contractor shall be responsible for developing, implementing, and providing ITSCM procedures that align with Government and NASA ITSCM Processes to mitigate the impact of a disaster or major failure. Plans, procedures and processes include Business Continuity Plans, Disaster Recovery Plans, Information System Contingency Plans, etc. developed in coordination with NASA HQ and other contractors providing IT and other support to NASA HQ. The contractor shall:

- a. annually update, maintain, and test the HQ ITS Contingency Plan in accordance with NPR 2810.1 and NIST guidelines;
- b. at least annually train contingency teams in plan procedures and operations;
- at least annually develop, plan, and implement a contingency scenario test designed to validate the effectiveness of the plan to quickly restore HQ IT operations in the event of a disaster; and
- d. deliver a lessons learned report from each test and use the results to update the HQ ITS Contingency Plan.

DRD	Description	Frequency
DRD #80	HQ ITS Contingency & Continuity	annually by fiscal year's end
	Plan, Training and Test Report annual	
	update	

## 8.6.1 Disaster Recovery and Continuity Planning

The contractor shall support NASA in developing and testing plans to ensure continuous availability of IT systems and services at systems located at HQ and also for systems located at other Centers. The contractor shall:

 a. support NASA in analyzing and providing comments and suggestions to NASA on the disaster recovery and continuity planning for systems operated by other Federal agencies and by commercial suppliers who provide services to NASA;

- coordinate with information systems and disaster recovery experts across NASA and NASA's partners to verify integration of procedures and planning techniques for disaster recovery and continuity planning; and
- c. support NASA in Agency-wide emergency preparedness and continuity of operations planning (COOP).

## 8.6.2 Emergency Operation Center (EOC) and Continuity of Operation (COOP) support.

The NASA HQ EOC, located at 300 E St SW, consists of workstations, printers, monitors, PA system and network connections. In an emergency, EOC personnel meet in the room to implement necessary actions. Emergency exercises are conducted in the EOC on a regular basis. Recovery exercises at the remote failover site will be conducted twice a year. The contractor shall provide IT support for the EOC room when needed and during real emergencies. The contractor shall recommend improvements after each recovery exercise and shall implement improvements only after receiving approval by the COTR or designee. In addition to an EOC room, NASA HQ maintains COOP sites at Goddard Space Flight Center, Langley Research Center, and the Glenn Space Center. If NASA HQ becomes inaccessible or as directed, essential Agency leadership personnel will utilize one or more of these sites. The contractor shall support the activation of this capability.

# 9.0 Other Support Tasks (Non-Core Support)

This PWS represents a comprehensive set of core requirements. Other related services may be required during the life of the contract to provide direct support to Mission Directorates and Mission Support organizations. These other services will be ordered through the indefinite delivery, indefinite quantity provisions of the contract. Several examples of task orders include the following:

- Support the investigation and deployment of state-of-the-art and leading edge technologies
  for the Exploration Systems Management Directorate. Support to this task has a Research
  and Development component that complements Headquarters core IT services by
  demonstrating, exploring, and exploiting new technologies within both development and
  production environments.
- Support the Exploration Systems Management Directorate in the planning, design, analysis, development, implementation, and training support to the Integrated Collaborative Environment (ICE) project.
- Support the Science Mission Directorate (SMD) through the enhancement of SMD business
  systems and processes placing emphasis on integration, collaborative solutions, knowledge
  management, and communications technologies. In addition, develop, maintain, and
  document the SMD IT architecture as it relates to the Agency IT architecture and to any
  locations hosting SMD servers/applications.

- Support the daily operations and strategic planning for the HQ Space Operations Center (SOC). Activities include demonstrations, training, on-site support, operation of desktop, web-based and other advanced applications and products.
- Support the Office of the Chief Financial Officer by maintaining the Central Resource Control System, NASA Audit Tracking System, CFO Web Site Portal, and Financial Management Internal Control System.
- Support the Office of Public Affairs (OPA) to include application development, IT strategic guidance, technical support and maintenance, test-bed provisioning, recommendations of software and hardware, multimedia support, and research and development support.
- Support the Chief Information Officer with expert level consultation, recommendations and support on Security Program Management, Governance and Oversight, Security Operations and Security Architecture and Engineering. In addition, provide program management support for each of the Program Managers in the OCIO, including Architecture and Integration, IT Security, Enterprise Portfolio Management, and Policy and Investment; eGovernment Initiatives support; Application Portfolio Management support throughout the Agency; and Agency Business Systems Support.

## Appendix A. Data Requirements Documents DRDs

DRD #1	Documentation environment of metrics, analytics and deliverables implementation plan and migration schedule	Updated and available weekly during the first two months of contract start; enhancements and additional content added monthly thereafter until established baseline schedule is met
DRD #2	Transition plan and integrated schedule	Available at contract start with significant weekly updates for the transition period up to Operational Readiness Review and acceptance.
DRD #3	Contract Status Meeting	Monthly – no later than last week of the month
DRD #4	Daily TagUp Review	Daily
DRD #5	Integrated Master Schedule with ability to drill down to supporting data, including resource loading	Updated every 2 weeks from month 2 of contract start date.
DRD #6	Project Schedule Adherence Report	Monthly – no later than second week of the month
DRD #7a	Logistics Management Plan	Three months after contract start date.
DRD #7b	Asset Inventory	Monthly
DRD #8	HQ Enterprise Architecture Plan Updates	8 months after contract start date
DRD #9	Operational Level Agreements	Initial set due 4 months after contract start; subsequent due in accordance with Government schedules
DRD #10	Report on response times, ticket aging, and customer satisfaction, delivered	1 month after start date and monthly after that.
DRD #11	Root Cause Analysis and Corrective Action Plan	as requested by ITCD
DRD #12	Configuration Management Plan	Update as required by ITCD
DRD #13	CCB Meeting Minutes	Weekly – 2 days after meeting
DRD #14	Spare Parts Inventory Report	3 months after contract start, quarterly thereafter
DRD #15A	Summary of updates to ROSA showing what was created	One time deliveable due with Data Migration Plan for RAM

DRD	Summary of updates to RAM showing what was	Available quarterly after RAM
#15B	created and modified over previous 3 months	Implementation
DRD	Diagrams of Application logic, connectivity,	90 days after contract start and
#16	interdependence and data flow	update continuously
DRD	Diagrams of Server dependencies (sinks/sources),	Draft three months after
#17	physical placement and relationship	contract start; final six months
"17	physical placement and relationship	and update continuously
DRD	Health & Safety Plan	Submit with proposal
#18	Ticatur & Sarcty Fran	Submit with proposar
DRD	Occupational Injuries and Illnesses Report	One month from contract start
#19	o confinencial engineers and entire engineers	and monthly thereafter
DRD	Customer Service Metrics Proposal	Deliver final three months
#20		after contract start
DRD	Customer Satisfaction Survey Report	Deliver at contract start with
#21		the customer satisfaction
		survey, monthly summary
		analytics and trending
DRD	Training Program & Outreach Plan, detailing	Initial Draft 45 days from
#22A	materials, methods and approach and to include	contract start; Final two months
	communications, and facilitating relationship building	from contract start. Subsequent
	activity. Two plans submitted each year with each	draft plan due each August 1
	plan covering the period of performance April 1 thru	with final due Oct 1; and Feb 1
	September 30 and October 1 thru March 31.	with final due April 1.
DRD	ITCD Communications Plan	Draft 45 days from contract
#22B		start; final six months from
		contract start. Updates as
		required by ITCD.
DRD	Customer Advisory and Service Review, meeting	As required within 2 business
#23	notes, action items, results, and schedule.	days of meetings.
DRD	On-Boarding and Off-Boarding Statistics Report	Deliver weekly beginning 3
#23A		months from contract start.
DRD	HITSS On-Boarding Report	Weekly
#23B	_ ^	
DRD	HITSS Off-Boarding Report	Weekly
#23C		
DRD	HITSS On-Boarding Checklist	Submitted to the government
#23D		for each HITSS employee on-
		boarding 2 weeks before
		execution of on-baording
		activity
DRD	HITSS Off-Boarding Checklist	Submitted to the government
#23E		for each employee off-boarding
		2 weeks before execution of
1		2 weeks before execution of

DRD	HITSS On-Baording and Off-Boarding SOP	Deliver two weeks after the
#23F	H1155 On-Baording and Off-Boarding SOF	start of option year two and
#231		
		update quarterly.
DRD	Customer Requirements Adherence Metrics Proposal	Deliver within 75 days of
#24		contract start; final due 3
		months after contract start
DRD	Requirements Adherence Report	Deliver 3 months after contract
#25		start date, monthly thereafter
DRD	Summary and Trend Ticket Reporting including	One month from contract start
#26	number of tickets opened, completed and pending	date and monthly thereafter
	(e.g. under a week, under two or over three) number	
	escalated, rating, closed, times to first respond,	
	customer satisfaction. Summary and reporting of	
	phone support, email support, and drop-in support.	
DRD	Service Request Processing Plan describing overall	Within two weeks of contract
#27	management and execution of the SR system and	start date
"2"	customer satisfaction report	Start date
DRD	customer satisfaction report	
#28	Reserved	
DRD	Catalog Orders Report/Checkbook includes number	Two weeks from contract start
#29	of orders by category, requisition number and funding	
#29		date, monthly thereafter
	source (if known), number complete, funds used	
	versus available, funds in process, summary total of	
	monthly catalog invoice and break out of ITCD funded	
	monthly total.	7 1 6
DRD	Application Service Framework	Two months from contract start
#30		date, modifications reflecting
		approved changes as required
DRD	Application Service Roadmap and Implementation	Six months after contract start
#31	Plan	and every six months
		thereafter, modifications
		reflecting approved changes as
		required. (Due last business
		day of each Incentive Fee
		Period)
l .	1	1 /

DRD #32	Legacy application disposition plan	Six months from contract start date, modifications reflecting status and approved changes every 60 days. (Initial plan due last business day of Incentive Fee Period (3/29/2013); 60 day status due the first business day of July, September, November, January and March)
DRD #33	Legacy application portfolio report	6 months from contract start, and updates quarterly thereafter
DRD #34A	Framework for Development Program	Due at contract start, modifications reflecting approved changes as required
DRD #34B	Framework for Web Site Development Program	Due nine months after contract start
DRD #35	Interface Control Documents	One month from contract start date and as needed thereafter
DRD #36	Software Management Guide	Interim due three months after contract start date; updated SDLC due six months after contract start; modifications reflecting approved modifications quarterly thereafter
DRD #37	Standard requirements template that documents the service or design need from the perspective of effected discipline areas (e.g. applications development, IT security, customer training, operations) and by level of need (e.g. mandatory, optional, preferred).	Within two months from contract start date
DRD #38	System Design Specification	Two months from contract start date, modifications reflecting approved modifications as needed thereafter
DRD #39	Application Status Review materials	Three months from contract start, monthly thereafter
DRD #40	Portfolio Management Views of Application Services and Inventories	6 months from contract start date and quarterly thereafter
DRD #41	As built detailed functional and physical description of development environment, its interfaces and processes	Two months from contract start date, provided within 2 days of changes to structural or ITS environment including patches
DRD #42A	Application Delivery Implementation Plan (Formerly Version Description Document but renamed to Release Implementation Plan Template)	Initial draft five months from contract start; final six months from contract start date

DRD	Website Delivery Implementation Plan (Formerly	Initial draft eight months from
#42B	Version Description Document but a secondary plan	contract start; final nine months
	created specifically for Website Implementations	from contract start date
DRD	Release Notes Document Template	Initial draft five months from
#42C		contract start; final six months
		from contract start date
DRD	Release Implementation Plan (for each Application and	Scheduled in accordance with
43A	Website)	CCB
DRD	Release Notes Document (for each Application and	Scheduled in accordance with
#43B	website)	CCB
DRD	Biennial Review of Forms Final Report	First report due 10/1/2014 and
#44A		biennially per NPD 1420.1
DRD	Quarterly Data to Produce Forms Bulletin (one for	Quarterly (Dec, March, June &
#44B	Agency and 1 for HQ)	Sept)
DRD	Data Exchange Agreement Audit and Gap Analysis	Six months from contract start
#45		date

DRD	Service Level Agreement Audit	One month from contract start
#46		date and monthly thereafter
DRD	Availability of hosted and housed services	One month from contract start
#47		date and monthly thereafter
DRD	Performance of hosted and housed services	One month from contract start
#48		date and monthly thereafter
DRD	Diagram of server location	Three months from contract
#49		start date and every three
		months thereafter
DRD	Diagram of servers logical connection to network	Three months from contract
#50		start date and on-demand
		thereafter
DRD	Capacity and Performance Report	Two months from contract start
#51		date, on-demand thereafter
DRD	Quarterly/Monthly Patch Release Report	One month after contract start
#52		date, monthly thereafter
DRD	Equipment Upgrade Evaluation Report	90 days of contract start date
#53		and semiannually thereafter
DRD	Moved to DRD#67	
#54		
DRD	Data Center (including SEF) SOP Audit &	6 months from contract start date
#55	Recommendations Report	and on demand thereafter.
DRD	ReservedReserved	Reserved
#56		

DRD #57	Data Center Modernization Plan	Initial plan 3 months from contract start date; updated plan at 6 months, and annually thereafter.
DRD #58	Data Exchange Agreement Audit and Gap Analysis	Six months from contract start date.
DRD #59	HQ Tactical Plan	On Demand
	Reserved	
DRD #60	Contractor Information Security Management Plan	Within one month from contract start date, updated annually thereafter
DRD #61	Draft Policy, Requirement, Procedure, or Standard	On demand
DRD #62	eDiscovery Data Search Results	On demand
DRD #63	Reserved	

DRD	Security Reviews and Assessments	On demand
#64	Security Reviews and Assessments	on demand
	Daily Risk Vulnerability Report	Daily
DDD		
DRD #65		
DRD	Monthly Vylnorobility Coon Deport (on our mtod)	One month after contract start
#66	Monthly Vulnerability Scan Report (encrypted)	date, monthly thereafter
DRD	Reserved	Reserved
#67	Reserved	Reserved
DRD	Monthly Wireless 802.11 Scanning Report (encrypted)	4 months after contract start date,
#68		quarterly thereafter.
DRD	Annual Penetration Test Plan and Rules of	On demand
#69	Engagement and Schedule	
DRD	Annual HQ Penetration Testing Report	On demand
#70		
DRD	Reserved	Reserved
#71		
DRD	Reserved	Reserved
#72 DRD	Reserved	Reserved
#73	Reserved	Reserved
DRD	Reserved	Reserved
#74	110501700	110501700
DRD	Reserved	Reserved
#75		
DRD	Monthly POA&M Status Report	One month after contract start
#76		date, monthly thereafter
DRD	Monthly ISSA Status Report	Two months after contract start
#77		date, monthly thereafter
DRD	Incident Response Training and Test Report	annually by fiscal year's end
#78		
DRD	Quarterly Metric Report summarizing the transaction	Due 90 days from contract start
#79	history, incidents, and inventories/inspections for that	date, and every 3 months
DDD	report	thereafter
DRD #80	HQ ITS Contingency & Continuity Plan, Training and	annually by fiscal year's end
#80	Test Report annual update	

#### A. Technical Performance Incentive Fee

#### The Government and the Contractor agree that:

- 1. During each evaluation period, the Contractor may earn technical performance incentive fee for the core requirement based on the performance level achieved for each performance requirement identified in the tables in Section III.A.4.
- 2. During each evaluation period, the Contractor may earn technical performance incentive fee for CPIF tasks awarded under the IDIQ provisions of the contract, based on the performance levels established in the task order. Each CPIF task order will have its own set of performance standards and weightings, including method of calculation of the incentive fees.
- The evaluation periods for which technical incentive fee is available is in accordance with the chart below for the entire period of performance, which includes a 1-year base and four 1-year options.

# AVAILABLE TECHNICAL INCENTIVE FEE FOR EACH PERIOD

Contract Period	Incentive Fee Period	Start Date - End Date	Technical Incentive Fee*
Base	1	Contract Start Date plus 6 months	
Base	2	6-month period thereafter	
Option 1	3	6-month period thereafter	
Option 1	4	6-month period thereafter	
Option 2	5	6-month period thereafter	
Option 2	6	6-month period thereafter	b(4)
Option 3	7	6-month period thereafter	
Option 3	8	6-month period thereafter	
Option 4	9	6-month period thereafter	
Option 4	10	6-month period thereafter	
	Total		

### \*Technical Incentive Fee amounts are based on Target Fee only

- 4. Each required service (and associated performance requirement) shall be evaluated by the Government using the Incentive Fee Quality Assurance Plan Appendix 1, which provides details as to how samples are selected and evaluated. Each required service is weighted so that 100% of the evaluation for technical performance (and resulting technical performance incentive fee) will be derived from the performance requirements in this document.
  - For Incentive Period 1, the technical performance incentives will be based on selected metrics from Program Management, Customer

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE		PAGE OF PAGES	
				11	2	
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE		QUISITION/PURCHASE REQ. NO.	5. PROJECT N	O. (If applicable)	
000033	See Block 16C	,	0542722			
ISSUED BY	CODE HQ	7. Al	DMINISTERED BY (If other than Item 6)	CODE HQ		
NASA/Goddard Space Flight Center Headquarters Procurement Office Greenbelt MD 20771		Hea	NASA/Goddard Space Flight Center Headquarters Procurement Office Greenbelt MD 20771			
NAME AND ADDRESS OF CONTRACTOR (M	o., street, county, State and ZIP Code)	(x) <sub>3</sub>	A. AMENDMENT OF SOLICITATION NO.			
MI 550 ROCK SPRING DR 7TH E ETHESDA MD 20817-1124	LOOR	9	B. DATED (SEE ITEM 11)			
		x 1	0A. MODIFICATION OF CONTRACT/ORD INH12CF39C	DER NO.		
			OB. DATED (SEE ITEM 13)			
ODE 3BDT8	FACILITY CODE	1 1	06/22/2012			
	11. THIS ITEM ONLY A	APPLIES TO AMEND	MENTS OF SOLICITATIONS			
B. THE ABOVE NUMBERED CO appropriation date, etc.) SET		O REFLECT THE A	NGES SET FORTH IN ITEM 14 ARE MADE  DMINISTRATIVE CHANGES (such as char  TY OF FAR 43, 103(b).			
	•	do All To Ad Tho				
D OTHER (Specify type of modi	**					
X   52.232-22 Limita	tion of Funds (AP)	R 1984)			_	
.IMPORTANT: Contractor		headings, including	solicitation/contract subject matter where	feasible.)	ion of	
EE PAGE 2  Except as provided herein, all terms and condition	ons of the document referenced in t	ltem 9 A or 10Δ ≥≈	heretofore chennari remains unchanned a	nci in full force ≅nd effe	nt.	
5A. NAME AND TITLE OF SIGNER (Type or pr		16/	A NAME AND TITLE OF CONTRACTING erence L. Haynes		-	
5B. CONTRACTOR/OFFEROR	15C. DATI		3. UNITED STATES OF AMERICA Ference Li /	esne 1	6C. DATE SIGNED	
(Signature of person authorized to sign)			(Signature of Contracting Officer)		3/02/12	

STANDARD FORM 30 (REV. 10,63) Prescribed by GSA FAR (48 CFR) 53,243



This allotment of funds covers performance through April 30, 2015

PR#	Accounting and Appropriation Data	Amount
4200542722	10CI000/6100.2572/10/FC000000/934844.01.04.05/ 000/2570/10/EXPX22015D/055Y/8015/160124/1/2	\$1,010,750.00

2. Total value of the Core portion of the contract remains as follows:



AMENDMENT OF SOLICITATION/MODIFIC	ATION OF CONTRACT	1. CONTRACT ID CODE	PAGE OF PAGES	
AMENDMENT OF SOLICITATION/MODIFICA			1 2	
2. AMENDMENT/MODIF:CATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)	
000034	See Block 16C	See Schedula		
6. ISSUED BY CODE	HQ	7. ADMINISTERED BY (If other than Item 6)	CODE HQ	
NASA/Goddard Space Flight Center Headquarters Procurement Office Greenbelt MD 20771		NASA/Goddard Space Fligh Headquarters Procurement Greenbelt MD 20771		
8. NAME AND ADDRESS OF CONTRACTOR (No., street	county, State and ZIP Code)	(x) 9A. AMENDMENT OF SOLICITATION NO.	_	
IMC				
5550 ROCK SPRING DR 7TH FLOOR BETHESDA ND 20817-1124	R	9B. DATED (SEE ITEM 11)		
		x 10A MODIFICATION OF CONTRACT/ORDI	ER NO.	
		10B. DATED (SEE ITEM 13)		
CODE 3DDT 8	FACILITY CODE	06/22/2012		
GODE 3BDL8		AMENDMENTS OF SOLICITATIONS		
The above numbered solicitation is amended as set for			extended. Dis not extended.	
		RS. IT MODIFIES THE CONTRACT/ORDER NO. A		
CHECK ONE A THIS CHANGE ORDER IS ISSUED ORDER NO. IN ITEM 10A.	PURSUANT TO: (Specify authority) TH	E CHANGES SET FORTH IN ITEM 14 ARE MADE	IN THE CONTRACT	
B. THE ABOVE NUMBERED CONTRA appropriation date, etc.) SET FORTI	CT/ORDER IS MODIFIED TO REFLEC H IN ITEM 14, PURSUANT TO THE AU	T THE ADMINISTRATIVE CHANGES (such as chai THORITY OF FAR 43.103(b).	nges in paying office,	
C. THIS SUPPLEMENTAL AGREEMEN	T IS ENTERED INTO PURSUANT TO	AUTHORITY OF:		
D. OTHER (Specify type of modification	and authority)			
X 52.232-22 Limitation	of Funds (APR 1984	)		
E. IMPORTANT: Contractor Lis not.	is required to sign this document a	and return1_ copies to the i	ssuing office.	
14 DESCRIPTION OF AMENDMENT/MODIFICATION The purpose of this modifica	(Organized by UCF section headings, it	including solicitation/contract subject matter where incremental funding to the	feasible.) e CORE portion of	
the contract.		1		
SEE PAGE 2				
		17		
Except as provided herein, all terms and conditions of the SIGNER (Type or print)	the document referenced in Item 9 A or	10A, as heretofore changed, remains unchanged at 16A, NAME AND TITLE OF CONTRACTING		
		Terence L. Haynes		
KED CONTRACTORIOETEROD	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED	
15B. CONTRACTOR/OFFEROR	180. DATE BISNED	Levere L. Ha	gren 4/1×11-	
(Signature of person authorized to sign)		(Signature of Contracting Officer)	STANDARD FORM 30 (REV 10-83)	
NSN 7540-01-152-8070			3 IMMUARD FURW 30 (KEV /10-63)	

STANDARD FORM 36 (REV 10-83 Prescribed by GSA FAR (48 CFR) 59.243



This allotment of funds covers performance through May 31, 2015

PR#	Accounting and Appropriation Data	Amount
4200545488	10EA000/6100.2572/10/FC000000/090265.01.08.10/ 000/2570/10/AERX22015D/323H/8015/160126/1/2	\$ 250,000.00
4200546003	10CH000/6100.2572/10/FC000000/401769.06.07.03.19.0/ 5/000/2570/10/EXCX22015D/733B/8015/160115/1/2	\$ 90,493.00
4200546799	10LM020/6100.2572/10/FC000000/437673.09.10/ 000/2570/10/CASX22015D/618I/8015/160122/1/2	\$2,500,000.00

2. Total value of the Core portion of the contract remains as follows:



AMENDMENT OF SOLICITATION/MODIFICA		1. CONTRACT ID CODE	PA	AGE OF PAGES	
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	A DEO	UISITION/PURCHASE REQ. NO.	5 PRO II	1 2 ECT NO. (If applicable)
000035	See Block 16C		Schedule	3. 1 1.00	
6. ISSUED BY CODE		7. ADN	AINISTERED BY (If other than Item 6)	CODE	HQ
NASA/Goddard Space Flight Center Headquarters Procurement Office Greenbelt MD 20771			A/Goddard Space Flig dquarters Procuremen enbelt MD 20771	ا ht Cente:	r
		1		_	
B. NAME AND ADDRESS OF CONTRACTOR (No., street	, county, State and ZIP Code)	(x) 9A	AMENDMENT OF SOLICITATION NO.		
DMI		Ì			
5550 ROCK SPRING DR 7TH FLOOI	R	9B.	DATED (SEE ITEM 11)		
ETHESDA MD 20817-1124					
		x 10/N	A MODIFICATION OF CONTRACT/ORD NH12CF39C	DER NO.	
		106	B. DATED (SEE ITEM 13)		
CODE 3BDL8	FACILITY CODE	— l l o	6/22/2012		
	11. THIS ITEM ONLY APPLIES	TO AMENDA	IENTS OF SOLICITATIONS		
The above numbered solicitation is amended as set for				s extended.	is not extended.
virtue of this amendment you desire to change an offer reference to the solicitation and this amendment, and 12. ACCOUNTING AND APPROPRIATION DATA (If reg See Schedule	is received prior to the opening hou uired)	ur and date sp Net Inc	ecified. rease:	\$64,39	1.27
13. THIS ITEM ONLY APPLIES TO M	ODIFICATION OF CONTRACTS/OF	RDERS. IT M	ODIFIES THE CONTRACT/ORDER NO. /	AS DESCRIBED	IN ITEM 14.
CHECK ONE A. THIS CHANGE ORDER IS ISSUED ORDER NO. IN ITEM 10A.					
B. THE ABOVE NUMBERED CONTRAI appropriation date, etc.) SET FORTI	CT/ORDER IS MODIFIED TO REFL HIN ITEM 14, PURSUANT TO THE	LECT THE AD AUTHORITY	MINISTRATIVE CHANGES (such as cha OF FAR 43.103(b).	anges in paying o	office,
C. THIS SUPPLEMENTAL AGREEMEN	IT IS ENTERED INTO PURSUANT	TO AUTHOR	TY OF.	<del>.</del>	
D. OTHER (Specify type of modification	and authority)				
X 52.232-22 Limitation	of Funds (APR 19	84)			
E. IMPORTANT: Contractor X is not.	is required to sign this docume	ent and return	copies to the	issuing office.	
14. DESCRIPTION OF AMENDMENT/MODIFICATION				feesible.)	
The purpose of this modifica					ortion of
the contract.					
SEE PAGE 2					
Except as provided herein, all terms and conditions of the	he document referenced in Item 9 A				
15A. NAME AND TITLE OF SIGNER (Type or print)		16A.	NAME AND TITLE OF CONTRACTING	GOFFICER (Type	e or print)
		Ter	rence L. Haynes		
15B. CONTRACTOR/OFFEROR	15C. DATE SIGN	IED 168.	UNITED STATES OF AMERICA	/	16C. DATE SIGNED
		.	Gerence L. He	ame	-1-1
(Signature of person authorized to sign)	— . <u> </u>		(Signature of Contracting Officer)	1	3/28/15
NSN 7540-01-152-8070	<u> </u>			STANDARD	FORM 80 (REV. 19-83)

Prescribed by GSA FAR (48 CFR) 53.243



This allotment of funds covers performance through June 30, 2015

PR#	Accounting and Appropriation Data	Amount
4200549611	10NC000/6100.2572/10/FC000000/779345.04.10/ 000/2570/10/CASX22015D/618I/8015/160122/1/2	\$ 29,404.35
4200552766	10MA000/6100.2514/10/FC000000/449048.08.10/ 000/2510/10/CASX22015D/618I/8015/160122/1/2	\$ 34,986.92

2. Total value of the Core portion of the contract remains as follows:



AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE	PAGE	OF PAGES
		T	1		1	2
	NTMODIFICATION NO.	3. EFFECTIVE DATE		QUISITION/PURCHASE REQ. NO. Schedule	5. PROJECT	NO. (If applicable)
000036	0.005	See Block 16C			PODE I	
6. ISSUED BY	CODE	HQ	7. AD	MINISTERED BY (If other than Item 6)	CODE	
	ddard Space Flight C			A/Goddard Space Flight		
	rters Procurement Of:	fice		dquarters Procurement	Office	
Greenbe.	lt MD 20771		Gre	enbelt MD 20771		
		9	1			
			4			
8 NAME AND	AEDRESS OF CONTRACTOR (No., street	et county State and ZIP Code)	9/	A. AMENDMENT OF SOLICITATION NO.		
o. re une / une		n, sound, clear are an over,	(x)	The state of the s		
DMI						
	CK SPRING DR 7TH FLOO	)R	96	3. DATED (SEE ITEM 11)		
BETHESDA	A MD 20817-1124					
			X N	DA. MODIFICATION OF CONTRACT/ORDEN NH12CF39C	R NO.	
			ı N	NH12CF39C		
					_	
				DB. DATED (SEE ITEM 13)		
code 3B	BDL8	FACILITY CODE		06/22/2012		
		11. THIS ITEM ONLY APPLIES	TO AMEND	MENTS OF SOLICITATIONS		
The above r	numbered solicitation is amended as set t	forth in Item 14. The hour and date s	specified for	receipt of Offers	xtended. 🗌 is n	ot extended.
CHECK ONE	A. THIS CHANGE ORDER IS ISSUED ORDER NO. IN ITEM 10A.	PURSUANT TO: (Specify authority) ACT/ORDER IS MODIFIED TO REFLI H IN ITEM 14, PURSUANT TO THE	THE CHAN	IODIFIES THE CONTRACT/ORDER NO. AS  IGES SET FORTH IN ITEM 14 ARE MADE I  DMINISTRATIVE CHANGES (such as chang Y OF FAR 43.103(b).	N THE CONTRAC	т
	D. OTHER (Specify type of modification	n end euthodtu)				
x	52.232-22 Limitation	••	2/1			
	·			1 C copies to the iss	. inn affina	
E. IMPORTAN		is required to sign this document				
				solicitation/contract subject matter where to emental funding to the		tion of
		acton is to provide	, Incr	smental funding to the	CORE POI	CION OI
the conf	tract.					
SEE PAGE	E 2					
Except as pro	wided herein, all terms and conditions of	the document referenced in Item 9 A	or 10A. as h	neretofore changed, remains unchanged and	in full force and e	ffect.
	NO TITLE OF SIGNER (Type or print)	STEEL		. NAME AND TITLE OF CONTRACTING O		
						,
			ITΑ	rence L. Haynes		
15B CONTRA						
IOD. CONTRO	ACTOR/OFFEROR	15C. DATE SIGNE		. UNITED STATES OF AMERICA	•	16C. DATE SIGNED
IOD. CONTRO	ACTOR/OFFEROR	15C. DATE SIGNE			igner	16C. DATE SIGNED

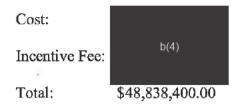
STANDARD FORM 30 (REV. 10-83) Prescribed by GSA FAR (48 CFR) 53.243



This allotment of funds covers performance through August 31, 2015

PR#	Accounting and Appropriation Data	Amount
4200553381	10CI000/6100.2572/10/FC000000/934844.01.04.05/ 000/2570/10/EXPX22015D/055Y/8015/160124/1/2	\$ 551,945.00
4200553629	10DM000/6100.2572/10/FC000000/383807.02.05/ 000/2570/10/SCEX22015D/728A/8015/160120/1/2	\$2,015,945.00
4200553968	10LM020/6100.2572/10/FC000000/437673.09.10/ 000/2570/10/CASX22015D/618I/8015/160122/1/2	\$1,000,000.00
	<u> </u>	

2. Total value of the Core portion of the contract remains as follows:



AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE		PAGE	PAGE OF PAGES	
AMENDMEN	TOP SOCIETIATION MODIFIC	A1101 01 00				<u> </u>	2	
2. AMENDMEN	TMODIFICATION NO.	3. EFFECTIVE I			ISITION/PURCHASE REQ. NO.	5. PROJECT	NO. (If applicable)	
000037		See Bloc	K 16C		54939			
6. ISSUED BY	CODE	HQ		7. ADMI	NISTERED BY (If other than Item 6)	CODE HO		
Headquar	dard Space Flight Ce ters Procurement Off t MD 20771		I	Head	/Goddard Space Flight of quarters Procurement Of nbelt MD 20771			
	ADDRESS OF CONTRACTOR (No., Stree	f, county, State and 2	(IP Code)	(x) BA A	AMENDMENT OF SOLICITATION NO.			
	K SPRING DR 7TH FLOO MD 20817-1124	R			DATED (SEE (TEM 11)			
			×	x 10A NNI	MODIFICATION OF CONTRACT/ORDER N H12CF39C	0.		
				10B.	DATED (SEE ITEM 13)			
CODE 3BI	DL8	FACILITY COD	E	0.6	7/22/2012			
		11. THIS ITE	M ONLY APPLIES TO AM	MENDME	NTS OF SOLICITATIONS			
THE PLACE virtue of this reference to	DESIGNATED FOR THE RECEIPT OF	OFFERS PRIOR er already submitt I is received prior !	TO THE HOUR AND DAT ed , such change may be to the opening hour and d	TE SPEC made b date spec		UR OFFER	f by	
See Sche		an ady	Nec	THE	.ease.	5,657.0	2	
CHECK ONE			_		DIFIES THE CONTRACT/ORDER NO. AS DE			
					IINISTRATIVE CHANGES (such as changes DF FAR 43.103(b).			
	C. THIS SUPPLEMENTAL AGREEMEN	NT IS ENTERED I	NTO PURSUANT TO AUT	THORIT	Y OF:			
	D. OTHER (Specify type of modification	n and authority)						
х	52.232-22 Limitation	n of Fund	s (APR 1984)					
E. IMPORTANT	: Contractor X is not.	is required to	sign this document and	return	O copies to the issuir	g office.		
	rich of amendment/modification ocse of this modification				oficitation/contract subject matter where feasi nental funding to the C		tion of	
SEE PAGE	2 2							
	viced herein, all terms and conditions of	the document refe	renced in Item 9 A or 10A		etofore changed, remains unchanged and in			
	1.46 1			1	ence L. Haynes			
15B. CONTRA	CTOR/OFFEROR		15C. DATE SIGNED		INITED STATES OF AMERICA	nes	16C. DATE SIGNED	
	(Signature of person authorized to sign)				(Signature of Contracting Officer)	TANDADD F	1/01/15	

STANDARD FORM 30 (REV. 10-93) Prescribed by GSA FAR (48 CFR) 53.243

	FROM	BY	TO
Cost:			
Incentive Fee:		b(4)	
Total Funding:			

This allotment of funds covers performance through August 31, 2015

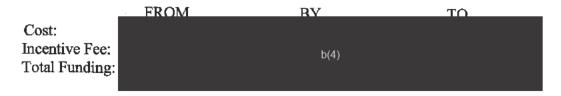
PR#	Accounting and Appropriation Data	Amount
4200554939	10QA000/6100.2514/10/FC000000/951219.04.10/ 000/2510/10/CASX22015D/512F/8015/160122/1/2	\$5,857.62

2. Total value of the Core portion of the contract remains as follows:



AMENDMENT OF SOLICITATION/MODIFIC		OF PAGES			
	<u> </u>			1	
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE		QUISITION/PURCHASE REQ. NO.	5. PROJECT	NO. (If applicable)
000038	See Block 160	See	Schedule		
6. ISSUED BY CODE	HQ	7. AE	MINISTERED BY (If other then Item 6)	CODE HQ	_
NASA/Goddard Space Flight Co	enter	NAS	A/Goddard Space Flight	Center	
Headquarters Procurement Off	fice		dquarters Procurement O		
Greenbelt MD 20771		Gre	eenbelt MD 20771		
		ļ			
B. NAME AND ADDRESS OF CONTRACTOR (No., stree		_	INC. INC. INC. INC. INC. INC. INC. INC.		
I TANIE AND ADDRESS OF CONTRACTOR (MR., 8598	r, county, stake and ZIP Code)	(x)	A. AMENDMENT OF SOLICITATION NO.		
IMG					
5550 ROCK SPRING DR 7TH FLOO	R	98	B. DATED (SEE ITEM 11)		
ETHESDA MD 20817-1124					
		10	A. MODIFICATION OF CONTRACT/ORDER N	0.	
		×  N	A MODIFICATION OF CONTRACT/ORDER N NH12CF39C	-	
			<del> </del>		
		10	B. DATED (SEE ITEM 13)		
CODE 3BDL8	FACILITY CODE		06/22/2012		
	11. THIS ITEM ONLY APPLIES	TO AMEND	MENTS OF SOLICITATIONS		<del> </del>
separate letter or telegram which includes a reference THE PLACE DESIGNATED FOR THE RECEIPT OF virtue of this amendment you desire to change an off reference to the solicitation and this amendment, and	OFFERS PRIOR TO THE HOUR ANI or already submitted, such change m is received prior to the opening hour	D DATE SP ay be made and date sp	ECIFIED MAY RESULT IN REJECTION OF YO by telegram or letter, provided each telegram o pecified.	UR OFFER If r letter makes	by
2. ACCOUNTING AND APPROPRIATION DATA (If req See Schedule	uired) N	let Ind	crease: \$2	447,60	9.09
	IODIEICATION OF CONTRACTORO	DEDA PER	ADDITION THE CONTRACTION OF THE LOCAL		
10. THIS ITEM ONLY APPLIES TO M	ODIFICATION OF CONTRACTS/ORI	DEKS. II N	ODIFIES THE CONTRACT/ORDER NO. AS DE	SCRIBED IN IT	EM 14.
CHECK ONE A THIS CHANGE ORDER IS ISSUED I ORDER NO. IN ITEM 10A.	PURSUANT TO: (Specify authority)	THE CHAN	GES SET FORTH IN ITEM 14 ARE MADE IN TI	HE CONTRAC	т
B. THE ABOVE NUMBERED CONTRAG appropriation date, etc.) SET FORT	CT/ORDER IS MODIFIED TO REFLE 1 IN ITEM 14, PURSUANT TO THE /	ECT THE AL AUTHORIT	DMINISTRATIVE CHANGES (such as changes ) Y OF FAR 43.103(b).	n paying office	
C. THIS SUPPLEMENTAL AGREEMEN	T IS ENTERED INTO PURSUANT TO	O AUTHOR	ITY OF		·-
D. OTHER (Specify type of modification	and authority)				
X 52.232-22 Limitation		243			
	is required to sign this document		0		<u> </u>
IMPORTANT: Contractor 🗵 is not.					_
4. DESCRIPTION OF AMENDMENTAMODIFICATION he purpose of this modifica					ton of
he contract.	cion is to provide	THCLE	mental funding to the Co	JKE POL	ion or
ne contract.					
FF DRCE 2					
EE PAGE 2					
	(3)				
xcept as provided herein, all terms and conditions of the	e document referenced in Item 9 A o	r 10A, as h	eretofore changed, remains unchanged and in fo	ıll force and ef	ect.
5A. NAME AND TITLE OF SIGNER (Type or print)		16A.	NAME AND TITLE OF CONTRACTING OFFICE	ER (Type or p	int)
		Te	rence L. Haynes		
5B. CONTRACTOR/OFFEROR	15C. DATE SIGNED		UNITED STATES OF AMERICA		100 DATE DIONED
	NO. DATE GIGNEL	198.			16C. DATE SIGNED
	_	6	received. Hay	ner	8/14/15
(Signature of person authorized to sign)			(Signature of Contracting officer)		2/17/13

STANDARD FORM 39 (REV. 10-83) Prescribed by GSA FAR (48 CFR) 53.243



This allotment of funds covers performance through September 30, 2015

PR#	Accounting and Appropriation Data	Amount
4200559845	10HA000/6100.2520/10/FC000000/465830.10/000 2520/10/EDUX22015D/137B/8015/160128/1/2	\$59,684.00
	10HA000/6100.2520/10/FC000000/415245.02.05/000 2520/10/EDUX22015D/246P/8015/160128/1/43	\$59,684.00
	10HA000/6100.2520/10/FC000000/975423.17.01/000 2520/10/EDUX22015D/137B/8015/160128/1/84	\$59,684.00
	10HA000/6100.2520/10/FC000000/647044.10/000 2520/10/EDUX22015D/246P/8015/160128/1/125	\$59,683.00
4200560914	10LM020/6100.2572/10/FC000000/437673.09.10/000 2570/10/CASX22014D/618I/8014/150122/1/2	\$8,874.09
	10LM020/6100.2572/10/FC000000/437673.09.10/000 2570/10/CASX22015D/618I/8015/160122/1/84	\$2,200,000.00
Total		\$2,447,609.09

2. Total value of the Core portion of the contract remains as follows:



2 AMERINMYMAODIFICATION NO SEPTECTIVE DATE SALES TO AMERINATE REG. NO. S. PROJECT NO. (If space) project on the project of the service of the american	AMENDME	NT OF SOLICITATION/MODIFIC	CATION OF CONTRACT		1. CONTRACT ID CODE	PAGE OF PAGE	_
ROBURD BY CODE   RO   ROBURD TO CODE   RO   ROBURD TO CODE   ROBURD TO ROBURD	2. AMENDMEN	NT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REC	UISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If app.	2 licable)
SESUED BY   CODE   GQ	000039		See Block 16C	4200	559960		
Headquarters Procurement Office Greenbelt MD 20771  E NAME AND ADDRESS OF CONTINUCTOR (no., sive.c. covid, State and JP Coop  MN		CODE		7. AD	MINISTERED BY (If other than item 6)	CODE HQ	
Headquarters Procurement Office Greenbelt MD 20771  E NAME AND ADDRESS OF CONTINCTON No., sived, covidy, State and 2P Code  E NAME AND ADDRESS OF CONTINCTON No., sived, covidy, State and 2P Code  MS A AMENDMENT OF SOUCHTATION NO.  MS A AMENDMENT OF SOUCHTATION NO.  MS A DATED (SEE ITEM 15)  TO AMEDICATION OF CONTINCTON NO.  MS DATED (SEE ITEM 15)  TO AMEDICATION OF CONTINCTON NO.  MS DATED (SEE ITEM 15)  TO BATED (SEE ITEM 15)  TO BAT	NASA/Goo	ddard Space Flight C	enter	NAS	A/Goddard Space Fligh	nt Center	
DMI  5550 ROCK SPRING DR 7°PH FILOOR  5571 BETHEODY AND 20817—1124    108. MODIFICATION OF CONTRACT/ORDER NO.   NNTI12/CE39 C   108. DATED (SEE ITEM 15)   108. DATED (SEE ITEM 15)   108. DATED (SEE ITEM 15)   106. PATED (SEE ITEM 15)   1	Headquar	rters Procurement Of		Hea	dquarters Procurement		
DMI  5550 ROCK SPRING DR 7°PH FILOOR  5571 BETHEODY AND 20817—1124    108. MODIFICATION OF CONTRACT/ORDER NO.   NNTI12/CE39 C   108. DATED (SEE ITEM 15)   108. DATED (SEE ITEM 15)   108. DATED (SEE ITEM 15)   106. PATED (SEE ITEM 15)   1	R NAME AND	ADDRESS OF CONTRACTOR (No. street	at county State and 7IP Code		AMENDMENT OF SOLICITATION NO.		
SECRETARY   SECR				(X)			
TORE OND 20817-1124    TOR MODIFICATION OF CONTRACTORDER NO.   NINTELL CENTRACTORDER N			-		DATED (DCC (TCL) (4)		
This active numbered solicitation is amended as set forth in item 14. The hour and date specified for models of Offers   lies activated   lies not extended.   lies not extende			DK		. DATED (SEE ITEM 11)		
The above numbered solidation is amended as each forth in trail. The hour and date specified for receipt of procept of the control of the amended of the amendment price to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing them is and it, and reluming copies of the amendment (b) By achievelying receipt of this amendment in section or as amended, by one of the following methods: (a) By completing seems and it, and reluming copies of the amendment of the section or as amendment number. FAILURE OF OVER ARROWORDSCHEMIT OR BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIF OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR DATE of the adolestion and related valuables. Another member to the solicitation and the seminant service of the solicitation and the seminant of				x 10	A. MODIFICATION OF CONTRACT/ORD VH12CF39C	ER NO.	
The above numbered solidistics in semended as est orth in term 14. The hour and date specified for secupit of Officer   The provisional of this amendment pict of the hour and date specified in the solidistics or as amended, by one of the following methods (a) By completing   Items as and 15, and returning   Copies of the amendment (b) By administrating of this amendment on each copy of the officer in the solidistics of the security of the amendment on each copy of the officer in the solidistics of the security of the amendment on each copy of the officer in the solidistics of the amendment on each copy of the officer is exhibited; or (c) By separate letter or telegram which includes a reference to the solidistics of the solidistics of the semination on each copy of the officer is exhibited; or (c) By separate letter or telegram which includes a reference to the solidistics of the solidistic				10	B. DATED (SEE ITEM 13)		
The above numbered solicitation is amended as cet forth in hem 14. The hour and date specified for receipt of Offiers   lies extended.   lie not extended.   lie no	CODE 3B	DL8	FACILITY CODE		6/22/2012		
Officer must addressedge receipt of this amendment pixt to the how and does specified in the addition or as amended, by one of the following methods: (a) By completing titlens B and 16, and returning copies of the amendment (a) By solinowinding provided for this amendment on one of the following methods: (a) By appearable letter or ledgerum which includes a reference to the adoletication and amendment musters. FAILURE OF YOUR ACKNOWALEDGEMENT TO BE RECEIVED AT THE FLACE LESSIONATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND ANTE SPECIFIED MAY RESULT IN RESECTION OF YOUR OFFER It by without of this amendment jux desire to change an offer already submitted, such change any be made by telegration or letter; provided each integration or mismas reference to the solicities and the change of protein the opening hour and date specified.  12. ACCOMENTA AND APPROPRIATION DATA (if required)  13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/CROBERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.  ONECK CINE  A. THIS CHANGE ORDER IS ISSUED PURSUANT TO (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 16.  B. THE ABOVE NUMBERED CONTRACTIONOBE IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation of sets.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF.  C. THIS SUPPLEMENTAL AGREEMENT IS ENTER THE DITTO PURSUANT TO AUTHORITY OF.  EINPORTANT: Chiractor Sin to Extend the Term of the Contract  EINPORTANT: Contractor Sin to Extend the Term of the Contract  EINPORTANT: Contractor Sin to Extend the Term of the Contract  EINPORTANT: Contractor Sin to Extend the Term of the Contract  14. DESCRIPTION OF AMENDMENTIMODIFICATION (Organized by UCF section headings, including solicitation-to-intent adject mafter intent feasible.)  The purpose of this modification is to: (1) exercise option year 3; (2) provide increment funding; (3) incentive fee payment for perind 19. A NAME AND TITLE OF CONTRACTING OFFICER (Type or print			11. THIS ITEM ONLY APPLIES	TO AMEND	MENTS OF SOLICITATIONS		
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF.  D. OTHER (Specify type of modification and euthority)  X 52.217-09 Option to Extend the Term of the Contract  E INPORTANT: Contractor		13. THIS ITEM ONLY APPLIES TO  A. THIS CHANGE ORDER IS ISSUED ORDER NO. IN ITEM 10A.	PURSUANT TO: (Specify authority)	THE CHAN	GES SET FORTH IN ITEM 14 ARE MADE	: IN THE CONTRACT	
EIMPORTANT: Contractor Eis not. Is required to sign this document and return 0 copies to the issuing office.  14. DESCRIPTION OF AMENDMENTMODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)  The purpose of this modification is to: (1) exercise option year 3; (2) provide increment funding; (3) incentive fee payment for period 5; (4) extend the period of performance  Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.  Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.  15A NAME AND TITLE OF SIGNER (Type or print)  15C. DATE SIGNED  15C. DATE SIGNED  15B. UNITED STATES OF AMERICA  16C. DATE SIGNED							
E. IMPORTANT: Contractor E is not.		D. OTHER (Specify type of modification	n and authority)			_	
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where teasible.)  The purpose of this modification is to: (1) exercise option year 3; (2) provide increment funding; (3) incentive fee payment for period 5; (4) extend the period of performance  SEE PAGE 2  Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.  15A. NAME AND TITLE OF SIGNER (Type or print)  15C. DATE SIGNED  15C. DATE SIGNED  16B. UNITED STATES OF AMERICA  16C. DATE SIGNED	х	52.217-09 Option t	o Extend the Term	of the	Contract		
The purpose of this modification is to: (1) exercise option year 3; (2) provide increment funding; (3) incentive fee payment for period 5; (4) extend the period of performance  SEE PAGE 2  Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.  15A NAME AND TITLE OF SIGNER (Type or print)  16B. CONTRACTOR/OFFEROR  15C. DATE SIGNED  16B. UNITED STATES OF AMERICA  16C. DATE SIGNED	E. IMPORTAN	T: Contractor X is not.	is required to sign this docume	nt and return	0copies to the i	ssuing office.	
Except as proviced herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.  15A. NAME AND TITLE OF SIGNER (Type or print)  16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  Terence L. Haynes  15B. CONTRACTOR/OFFEROR  15C. DATE SIGNED  16B. UNITED STATES OF AMERICA  16C. DATE SIGNED	The purp	ocse of this modific	ation is to: (1) ex	xercise	option year 3; (2)	provide incremen	tal
15A. NAME AND TITLE OF SIGNER (Type or print)  16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  Terence L. Haynes  15B. CONTRACTOR/OFFEROR  15C. DATE SIGNED  16B. UNITED STATES OF AMERICA  16C. DATE S	SEE PAGI	E 2					
15A. NAME AND TITLE OF SIGNER (Type or print)  16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  Terence L. Haynes  15B. CONTRACTOR/OFFEROR  15C. DATE SIGNED  16B. UNITED STATES OF AMERICA  16C. DATE S	Except as pro	viced herein, all terms and conditions of	the document referenced in Item 9 A	or 10A. as h	eretofore changed, remains unchanged a	nd in full force and effect.	
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	15B. CONTRA	ACTOR/OFFEROR	15C. DATE SIGNI		UNITED STATES OF AMERICA	16C. DATI	E SIGNED
(Signature of person authorized to sign)  (Signature of Contracting Officer)		(Signature of person authorized in sinn)		عـ   ٠		8/	11/12

STANDARD FORM 30 (REV. 10/83) Prescribed by GSA FAR (48 CFR) 53.243 1. As a result of this modification Option Year 3 is hereby exercised. Clause B.11 entitled, "ESTIMATED COST AND INCENTIVE FEE (1852.216-84) (OCT 1996)" is hereby Increased as follows:

	FROM	BY	TO
Cost:			
Incentive Fee:		b(4)	
Total Funding:			

- 2. The Period of Performance is hereby extended from date of award through September 30, 2016.
- 3. Additional funding is hereby added to Clause B.13, entitled, "CONTRACT FUNDING (1852.232-81) (JUN 1990)" to the Core portion of the contract as follows:

	FROM	BY	TO
Cost:			
Incentive Fee:		b(4)	
Total Funding:			

This allotment of funds covers performance through September 30, 2015

PR#	Accounting and Appropriation Data	Amount
4200559960	10EB000/6100.2572/10/FC000000/309574.01.03.10/000/ 2570/10/AERX22014D/071M/8014/150126/1/2	\$253,986.00
Total		\$253,986.00

- 4. This modification provides Incentive Fee Payment for Period 5 on the CORE portion of the contract in the amount of b(4)
- 5. All other terms and conditions remain unchanged.

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See Block 16C 4200565399  See Block 16C 4200565399  ASA/Goddard Space Flight Center  ASA/Goddard Space Flight Center  Headquarters Produrement Office  Treenbeit M 20771  See Block Frouterent Office  Greenbeit M 20771  See Block SPRING DR 7TH FLOOR  See Scholar See See Block SPRING DR 7TH FLOOR  See Scholar See See Block SPRING DR 7TH FLOOR  See Scholar SPRING DR 7TH FLOOR DR 7TH	AMENDMENT OF SOLICITATION MODIFIC	ATION OF COR	IIIOCI		1 2
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virtue of this amendment you, dealer to change an offer diready submitted, such change may be made by fellogram or letter, provided each telegram or letter makes reference to the soliditation with the semelined.  **Recount Time AND APPROPRIATION DATA (if required)**  **Net Increase: \$796,791.08  **Recount Time Only APPLIES TO MODIFICATION OF CONTRACTIS/ORDERS. IT MODIFIES THE CONTRACTIONDER NO. AS DESCRIBED IN ITEM 14.  **HECKONE.**  **A THIS CHANGE GRIDER IS ISSUED PURSUANT TO (Speedy authority) THE CHANGES SETFORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.  **BERKONE.**  **B THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation one); or SETFORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF PARK AS 100(b).  **C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF PARK AS 100(b).  **D. OTHER (Specify Type of modification and authority)**  **X. 52, 232–22 Limit tation of Funds (APR 1984)**  **IMPORTANT: Contractor					
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A THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN TIEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN TIEM 10A.  B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation cele, etc.) SET FORTH IN TIEM 14, PURSUANT TO THE AUTHORITY OF FAR 45, 103(b).  C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF  D. OTHER (Specify type of modification and authority)  X	See Schedule				
E THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43 105(b).  C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF.  D. OTHER (Spacify type of modification and authority)  X 52.232-22 Limitation of Funds (APR 1984)  IMPORTANT: Contractor	13. THIS ITEM ONLY APPLIES TO M	MODIFICATION OF (	CONTRACTS/ORDERS.	IT MODIFIES THE CONTRACT/ORDER NO. AS	DESCRIBED IN ITEM 14.
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IMPORTANT: Contractor	D. OTHER (Specify type of modification	n and authority)			
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	15B. CONTRACTOR/OFFEROR	[19	OU. DATE SIGNED	TOB. UNITED STATES OF AMERICA	116C. DATE SIGNED
				Serence Z. Ha	mer 19/11/1-
STANDARD FORM 20/DEV 44 000	(Signature of person authorized to sign)			(Signature of Contracting Officer)	1 1/11/12

STANDARD FORM 38 (REV. 14-83) Prescribed by GSA FAR (48 CFR) 53.243



This allotment of funds covers performance through October 31, 2015

PR#	Accounting and Appropriation Data	Amount
4200565359	10M020/6100.2572/10/FC000000/437673.09.10/000 2570/10/CASX22015D/618I/8015/160122/1/2	\$796,791.08
Total		\$796,791.08

2. Total value of the Core portion of the contract remains as follows:

Cost:
Incentive Fee:

Total: \$64,544,218.00

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE PAGE				OF PAGES	
						1	_2		
2. AMENDMENT/MODIFICATION NO.  3. EFFECTIVE DATE  000041  See Block 16C			1.	4. REQUISITION/PURCHASE REQ. NO. 5. PROJECT NO. (If applicable) 4200567508				). (If applicable)	
000041 6. ISSUED BY	CODE	1	X 16C		MINISTERED BY (If other than Item 6)	CODE	но	<u> </u>	
NASA/Goo Headquai	ddard Space Flight Certers Procurement Off	HQ enter fice		NAS Hea	A/Goddard Space Flight dquarters Procurement O enbelt MD 20771	Cent	er	-	
DMI	ADDRESS OF CONTRACTOR (No., stree K SPRING DR 7TH FLOO	,	ZIP Code)	*/_	A. AMENDMENT OF SOLICITATION NO.  B. DATED (SEE ITEM 11)				
BETHESDA	MD 20817-1124			10	A. MODIFICATION OF CONTRACT/ORDER N	10.			
			2	K N	NH12CF39C				
				10	B. DATED (SEE ITEM 13)				
CODE 3B	DL8	FACILITY COD	E	0	06/22/2012				
		11. THIS ITE	M ONLY APPLIES TO AN	KEND	MENTS OF SOLICITATIONS				
CHECK ONE	A. THIS CHANGE ORDER IS ISSUED ORDER NO. IN ITEM 10A	PURSUANT TO:	(Specify authority) THE C	HAN	GES SET FORTH IN ITEM 14 ARE MADE IN TO DMINISTRATIVE CHANGES (such as changes Y OF FAR 43, 103(b).	THE CO	NTRACT		
	C. THIS SUPPLEMENTAL AGREEMEN	IT IS ENTERED I	NTO PURSUANT TO AU	THOR	ÎTY OF:				
-	D. OTHER (Specify type of modification	and authority)						-	
х	52.232-22 Limitation	n of Fund	s (APR 1984)						
E. IMPORTANT	T: Contractor X is not.	is required to	sign this document and	retum	0 copies to the issuin	g office			
	ocse of this modificatract.		•	-	solicitation/contract subject matter where feasi		porti	on of	
Continue		he document refe	nanced in Item 9 A or 10A	, as h	eretofore changed, remains unchanged and in	full forc	e and effec	t.	
15A. NAME AN	ID TITLE OF SIGNER (Type or print)				NAME AND TITLE OF CONTRACTING OFFI rence L. Haynes	CER (T	ype or prin	)	
15B. CONTRA	CTOR/OFFEROR		15C. DATE SIGNED	<u> </u>	UNITED STATES OF AMERICA	ــــــــــــــــــــــــــــــــــــــ	16	C. DATE SIGNED	
	(Signature of person authorized to sign)			2	Signature of Contracting Officer)	~ر	=	7/28/15	

STANDARD FORM 30 (REV. 10-83) Prescribed by GSA FAR (48 CFR) 53.243

	FROM	BY	TO
Cost:			
Incentive Fee:		b(4)	
Total Funding:			

This allotment of funds covers performance through October 31, 2015

PR#	Accounting and Appropriation Data	Amount
4200567508	10M020/6100.2572/10/FC000000/437673.09.10/000 2570/10/CASX22015D/618I/8015/160122/1/2	\$39,915.15
Total		\$39,915.15

2. Total value of the Core portion of the contract remains as follows:



AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE		PAGE OF PAGES	
2. AMENDMENT/MODIFICATION NO.	3. EFFE	CTIVE DATE	4. RE	QUISITION/PURCHASE REQ. NO.	5. PR0	JECT NO. (If applica	2
000042				0567759		VIII ( ) Upplied	2.27
6. ISSUED BY	CODE HO	BIOCK TOO	7. AD	MINISTERED BY (If other than Item 6)	CODE	но	
NASA/Goddard Space Flig Headquarters Procuremen Greenbelt MD 20771	ht Center	_	Hea	A/Goddard Space Flight dquarters Procurement O enbelt MD 20771		er	
8. NAME AND ADDRESS OF CONTRACTOR DMI 6550 ROCK SPRING DR 7TH BETHESDA MD 20817-1124		ate and ZIP Code)	95	A. AMENDMENT OF SOLICITATION NO.  3. DATED (SEE ITEM 11)  DA. MODIFICATION OF CONTRACT/ORDER N. N. H. 12 C. F. 3 9 C.			
			10	DB. DATED (SEE ITEM 13)			
CODE 3BDL8	FACiLIT	Y CODE		06/22/2012			
- 3000		HIS ITEM ONLY APPLIES TO A					
CHECK ONE. A. THIS CHANGE ORDER IS ORDER NO. IN ITEM 10A.	TA (If required)  JES TO MODIFICAT  ISSUED PURSUAN	Net TON OF CONTRACTS:ORDER  IT TO: (Specify authority) THE	Ind S. IT N		SCRIBE	NTRACT	
C. THIS SUPPLEMENTAL AG  D. OTHER (Specify type of me		ERED INTO PÜRSUANT TO AI adily)	JTHOR	NTY OP.			
x   52.232-22 Limit	ation of E	Tunds (APR 1984)					
E. IMPORTANT: Contractor	is not. is rec	uired to sign this document an	d return	0 copies to the issuin	g office.		
14. DESCRIPTION OF AMENDMENT/MODIF The purpose of this mod the contract. SEE PAGE 2		•	_	solicitation/contract subject matter where feasing amental funding to the C		portion of	
Except as provided herein, all terms and cond 15A. NAME AND TITLE OF SIGNER (Type or		ent referenced in Item S A or 10	16A	eretofore changed, remains unchanged and in L NAME AND TITLE OF CONTRACTING OFFI rence L. Haynes			
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED	168	UNITED STATES OF AMERICA Hay	hei	16C. DATE S	GNED
(Signature of person authorized to si	gn)			(Signature of Contracting Officer)		1/30	1/12

STANDARD FORM 20 (REV. 19/83) Prescribed by GSA FAR (48 CFR) 53,243



This allotment of funds covers performance through October 31, 2015

PR#	Accounting and Appropriation Data	Amount
4200567759	10IA000/6100.2572/10/FC000000/630358.11.10/000 2570/10/CASX22015D/618I/8015/160122/1/2	\$20,300.00
Total		\$20,300.00

2. Total value of the Core portion of the contract remains as follows:



AMENDMENT O	OF SOLICITATION/MODI	FICATION OF CONTRACT	1. CONTRACT ID CODE	PAGE OF PAGES	
		3. EFFECTIVE DATE	EQUICITION/DUDGHASE DEC. NO.	1 2 5. PROJECT NO. (If applicable)	
42/			REQUISITION/PURCHASE REQ. NO. 5, PROJECT NO. (If applicab 200568241		
6. ISSUED BY		See Block 16C DDE HO		ADMINISTERED BY (If other than Item 6)	CODE HO
	ard Space Flight ers Procurement 6 MD 20771	Center	He	SA/Goddard Space Fligh adquarters Procurement eenbelt MD 20771	nt Center
B. NAME AND ADDR	RESS OF CONTRACTOR (No.,	street, county, State and ZIP Code)	(x)	9A. AMENDMENT OF SOLICITATION NO.	
	SPRING DR 7TH FI D 20817-1124	JOOR		9B. DATED (SEE ITEM 11)	
			х	10a. MODIFICATION OF CONTRACT/ORD NNH12CF39C	ER NO.
				10B. DATED (SEE ITEM 13)	
CODE 3BDL8	3	FACILITY CODE		06/22/2012	
		11. THIS ITEM ONLY APPL	IES TO AMEN	DMENTS OF SOLICITATIONS	
CHECK ONE A. T	THIS CHANGE ORDER IS ISSU ORDER NO. IN ITEM 10A.	JED PURSUANT TO: (Specify author	rity) THE CHA	MODIFIES THE CONTRACT/ORDER NO. A  NGES SET FORTH IN ITEM 14 ARE MADE  ADMINISTRATIVE CHANGES (such as char TY OF FAR 43.103(b).	IN THE CONTRACT
С. Т	THIS SUPPLEMENTAL AGREE	MENT IS ENTERED INTO PURSUA	NT TO AUTHO	ORITY OF:	
D. C	OTHER (Specify type of modific	ation and authority)			
X 52	.232-22 Limitat:	ion of Funds (APR :	1984)		
E. IMPORTANT:	Contractor X is n	ot.  is required to sign this docu	ament and retu	rn0 copies to the it	ssuing office.
	e of this modifi			g solicitation/contract subject matter where to emental functing to the	
<del></del>	herein, all terms and conditions TLE OF SIGNER (Type or print		16	herelofore changed, remains unchanged an A. NAME AND TITLE OF CONTRACTING O ERENCE J. Haynes	
15B. CONTRACTO	R/OFFEROR	15C. DATE SI	GNED 16	B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signa	ture of person authorized to sign)			(Signature of Contracting Officer)	10/15/

STANDARD FORM 30 (REV. 10-88) Prescribed by GSA

FAR (48 CFR) 53.243

	FROM	BY	TO
Cost:			
Incentive Fee: Total Funding:		b(4)	

This allotment of funds covers performance through October 31, 2015

PR#	Accounting and Appropriation Data	Amount
4200568241	10NB000/6100.2520/10/FC000000/977657.22.10/000 2520/10/SSMX22016D/618I/8016/170122/1/2	\$47,860.47
Total		\$47,860.47

2. Total value of the Core portion of the contract remains as follows:

Cost:
Incentive Fee:

Total: \$64,544,218.00

AMENDMENT OF SOLIGITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE	PAGE OF PAGES			
2 AMENDME	NT/MODIFICATION NO.	3. EFFECTIVE DATE	( D		1 2			
	THE SELECTION PO.			Schedule	<ol> <li>PROJECT NC. (If applicable)</li> </ol>			
000044 6. ISSUED BY	CODI	See Block 16C		DMINISTERED BY (if other than Item 6)	CODE HO			
		117		30 3	<del></del>			
	ddard Space Flight C		12.335	SA/Goodard Space Fligh				
Headquarters Procurement Office Greenbelt MD 20771				adquarters Procurement eenbelt MD 20771	Office			
01.001100	20112		31	eembert an x0//1				
8. NAME AND	ADDRESS OF CONTRACTOR (No., stre	et, county, State and ZIP Codel	(x)	DAL AMENDMENT OF SOLICITATION NO.				
	CK SPRING DR 7TH FLOO A MD 20817-1124	DR .		98. DATED (SEE ITEM 11)				
			×	GA MODIFICATION OF CONTRACT/ORDE NNH12CF39C	R NO.			
				103. DATED (SEE ITEM 13)				
CODE 3B	BDL8	FACILITY CODE		06/22/2012				
		II. THIS ITEM ONLY APPLIES"	NEMA OT	DMENTS OF SOLICITATIONS				
THE PLACE virtue of this reference to	E DESIGNATED FOR THE RECEIPT OF s amendment you desire to change an old the selicitation and this amendment, an TING AND APPROPRIATION DATA (If re- edule	OFFERS PRIOR TO THE HOUR ANI fer already submitted , such change m d is neceived prior to the opening hour cuired)	DDATES aybermad anddame let In	FAILURE OF YOUR ACKNOWLEDGEMENT PECIFIED MAY RESULT IN REJECTION OF ide by telegram or letter, provided each telegra specified. CCPGSSG; MODIFIES THE CONTRACT/ORDER NO. AS	YOUR OFFER If by am or letter makes \$1,023,229.75			
CHECK ONE				NGES SET FORTH IN ITEM 14 ARE MADE I				
	ORDER NO. IN ITEM 10A.							
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, size.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).  C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OP:							
	D. OTHER (Specify type of modification	D. OTHER (Specify type of modification and authority)						
х	52.232-22 Limitatio	n of Funds (APR 198	14)					
			v 3 0	n 0 opee to the iss	vina effec			
E. IMPORTAN		is required to sign this documen			<u> </u>			
				g selicitation/contract subject matter where to emental funding to the				
the cont		acton is to provide	THUL	emental lunding to the	CORE portion of			
ene con	cract.							
SEE PAGE	E 2							
Except as prov	vided herein, all terms and conditions of	the document referenced in Item 9 A.o.	r 10A, as	heretofore changed, remains unchanged and	in full force and effect.			
	ND TITLE OF SIGNER (Type or print)			A. NAME AND TITLE OF CONTRACTING O				
			т.	erence L. Haynes				
15B COMPA	CTOR/OFFEROR	15C. DATE SIGNED			Less nerr states			
TOD. OCIETY	WINNERENCE	TISO. DATE SIGNED		Berence L. Ha	Me 11/6/1			
_	(Signature of person authorized to sign)			(Signature of Contracting Official)	11/7//3			

STANDARD FOFM 30 (REV. 10,63) Prescribed by GSA FAR (48 CFR) 53,243

_	FROM	BY	TO
Cost:			
Incentive Fee: Total Funding:		b(4)	

This allotment of funds covers performance through November 30, 2015

PR#	Accounting and Appropriation Data	Amount
4200569231	10LM020/6100.2572/10/FC000000/437673.09.10/000 2570/10/SSMX22016D/618I/8016/170122/1/2	\$1,000,000.00
4200570887	10LM032/6100.2572/10/FC000000/652150.61.10/000 2570/10/SSMX22016D/618I/8016/170122/1/2	\$ 14,666.00
4200570327	10MA000/6100.2520/10/FC000000/449048.08.10/000 2520/10/CASX22015D/618I/8015/160122/1/2	\$ 8,563.75
Total	\$1,023,229.77	

2. Total value of the Core portion of the contract remains as follows:

Cost:
Incentive Fee:

Total: \$64,544,218.00