

<b>AMENDMENT OF SOLICITATION/ MODIFICATION OF CONTRACT</b>		1. CONTRACT ID CODE	PAGE OF PAGES 1   2
2. AMENDMENT/MODIFICATION NO. 100	3. EFFECTIVE DATE See Block 16C	4. REQUISITION/PURCHASE REQ. NO. N/A	5. PROJECT NO. (If applicable)
6. ISSUED BY CODE	BG	7. ADMINISTERED BY (If other than Item 6)	CODE

NASA/Johnson Space Center  
Space Station Procurement Office  
Attn: BG/Lauren N. Johnson  
Houston, TX 77058

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State, and ZIP Code)  
Barrios Technology, Ltd.  
Attn: Kris Kuehnel  
16441 Space Center Blvd. Suite B-100  
Houston, TX 77058-2015

CODE	FACILITY CODE
(X) 9A. AMENDMENT OF SOLICITATION NO.	9B. DATED (SEE ITEM 11)
X 10A. MODIFICATION OF CONTRACT/ORDER NO. NNJ04AA02C	10B. DATED (SEE ITEM 13) 11/05/03

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers  is extended,  is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing items 8 and 15, and  Copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS.

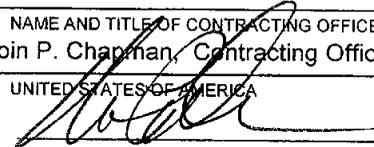
(x)	A. THIS CHANGE REFLECTS THE COMPLETION OF THE AWARD FEE PERIOD FOR THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b). 52.232-22 LIMITATION OF FUNDS (APR 1984)
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	d. OTHER (Specify type of modification and authority) G.2 Award Fee for Services Contract NASA 1852.216-76)(JUN 2000)

**EARNED AWARD FEE VOUCHER**

E. IMPORTANT: Contractor  is not,  is required to sign this document and return \_\_\_\_\_ 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 recognize the award fee earned for Award Fee Period 9: October 1, 2007 through March 31, 2008. The contractor should not submit a separate earned award fee voucher.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Robin P. Chapman, Contracting Officer	
15B. CONTRACTOR/OFFEROR  (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY  (Signature of Contracting Officer)	16C. DATE SIGNED 5/7/08

1. Award Fee Calculation:

Award Fee Available	\$638,960
Award Fee Earned:	\$632,571
Less Provisional payments	-\$500,123
<b>Total To Be Paid to Contractor:</b>	<b>\$132,448</b>

2. The AWARD FEE DISTRIBUTION table, Attachment J-4 of the Award Fee Plan, is hereby replaced in its entirety. The chart reflects Period 9 dollars earned.

AWARD FEE DISTRIBUTION

Period	Evaluation	Periods	Basic Contract		LOE	Available Fee	Earned Fee	Lost Fee
			(1)	IDIQ (2)				
1	01/01/04 - 03/31/04		\$167,881	\$104,810	\$78,871	\$351,362	\$319,739	\$31,623
2	04/01/04 - 09/30/04		\$335,361	\$209,620	\$149,741	\$694,722	\$653,039	\$41,683
3	10/01/04 - 03/31/05		\$337,605	\$213,963	\$127,183	\$678,751	\$651,602	\$27,149
4	04/01/05 - 09/30/05		\$337,604	\$213,963	\$191,191	\$742,758	\$720,476	\$22,282
5	10/01/05 - 03/31/06		\$317,847	\$232,907	\$155,165	\$705,919	\$698,860	\$7,059
6	04/01/06 - 09/30/06		\$317,847	\$232,907	\$160,474	\$711,228	\$704,116	\$7,112
7	10/01/06 - 03/31/07		\$326,034	\$196,824	\$152,048	\$674,906	\$674,906	\$0
8	04/01/07 - 09/30/07		\$326,034	\$220,527	\$170,681	\$717,242	\$710,070	\$7,172
9	10/01/07 - 03/31/08		\$334,767	\$133,949	\$170,244	\$638,960	\$632,571	\$6,390
10	04/01/08 - 09/30/08		\$334,766	\$133,950	\$168,828	\$637,544		\$0
<b>Subtotal</b>			<b>\$3,135,546</b>	<b>\$1,893,420</b>	<b>\$1,524,427</b>	<b>\$6,553,393</b>	<b>\$5,765,379</b>	<b>\$150,470</b>
<b>OPTION 1</b>	<b>Evaluation Periods</b>							
11	10/01/08 - 03/31/09		\$269,790			\$269,790		
12	04/01/09 - 09/30/09		\$269,790			\$269,790		
<b>Subtotal</b>			<b>\$539,581</b>			<b>\$539,581</b>		
<b>OPTION 2</b>	<b>Evaluation Periods</b>							
13	10/01/09 - 03/31/10		\$275,975			\$275,975		
14	04/01/10 - 09/30/10		\$275,975			\$275,975		
<b>Subtotal</b>			<b>\$551,951</b>			<b>\$551,951</b>		

# Mission Integration Contract

## International Space Station Program

**Barrios Technology**  
**Conformed thru Mod 99**

**April 24, 2008**

**National Aeronautics and Space Administration**  
**International Space Station Program**  
**Johnson Space Center**  
**Houston, Texas**



MODIFICATION AND HISTORY PAGE

MOD. NO.	DESCRIPTION	DATE
-	Basic Contract	11/5/2003
1	Russian Segment Support Team	12/30/2003
2	Increase Contract <b>Funding</b>	1/7/2004
3	Increase Contract <b>Funding</b>	2/4/2004
4	Increase Contract <b>Funding</b>	2/23/2004
5	Additional Labor Categories	2/27/2004
6	Update Award Fee Plan to Include Provisional Fee	3/3/2004
7	Updates to Section B	3/25/2004
8	Increase Contract <b>Funding</b>	3/26/2004
9	Deobligate Funding	4/20/2004
10	Delete DRD B-PR-04	5/11/2004
11	Recognize Earned Award Fee Period 1	6/14/2004
12	Attachment J-4, Award Fee Evaluation Plan	8/2/2004
13	Administrative Updates	8/10/2004
14	Increase Contract <b>Funding</b>	7/23/2004
15	Change-of-Name Agreement	8/4/2004
16	Administrative Updates	8/16/2004
17	Increase Contract <b>Funding</b>	8/13/2004
18	Update Statement of Work	9/10/2004
19	Increase Contract <b>Funding</b>	9/15/2004
20	Adds MIDAS software development effort and DQA effort. Also realigns work under Completion Form	9/30/2004
21	Increase Contract <b>Funding</b>	11/12/2004
22	Modified Section J-4, Award Fee Plan	11/19/2004
23	Recognize Earned Award Fee Period 2	11/19/2004
24	Increase Contract <b>Funding</b>	12/17/2004
25	S&MA descope modification	01/13/2005

MOD. NO.	DESCRIPTION	DATE
26	Increase Contract <b>Funding</b>	01/27/2005
27	Administrative Updates	3/30/2005
28	Administrative Updates	3/30/2005
29	Administrative Update; update to H.3	4/15/2005
30	Increase Contract <b>Funding</b>	5/02/2005
31	Revision to J-4, Award Fee Evaluation Plan	5/05/2005
32	Recognize Award Fee for Period 3	5/16/2005
33	Increase Contract <b>Funding</b>	6/27/2005
34	Revision to B.2, Estimated Cost Plus Award Fee, Administrative Update to H.5 and establish award fee pool Section J-4	7/26/05
35	Administrative Updates; DRD SA-01, Section J-1 Appendix C & Section J-1, SOW	8/12/05
36	Increase Contract <b>Funding</b>	7/27/05
37	Increase Contract <b>Funding</b>	8/30/05
38	MIDAS IDIQ TO, Additional labor categories & rates/SOW Changes	9/2/05
39	Exercise Russian Segment Support Team Option 1	9/8/05
40	Increase Contract <b>Funding</b>	10/14/05
41	Changes to Attachment J-3 DRL & DRDs DRD A-PR- 02 and Attachment J-5, DOL Wage Determination	10/17/05
42	Increase Contract <b>Funding</b>	11/1/05
43	Recognize Award Fee for Period 4	11/18/05
44	Increase Contract <b>Funding</b>	12/12/05
45	Increase Contract <b>Funding</b>	1/27/06
46	Increase Contract <b>Funding</b> , MIDAS CF Credit & Update J-4 Award Fee Evaluation Plan	3/28/06
47	Increase Contract <b>Funding</b> and update SOW	9/26/06
48	Recognize Award Fee for Period 5	5/22/2006
49	Incremental Funding	6/20/2006
50	Update SOW section 1.5 through 1.5.1.4.7	8/30/2006

MOD. NO.	DESCRIPTION	DATE
51	Incremental Funding	8/1/2006
52	F.9 Option To Extend RSST	9/13/2006
53	Exercise of Flex Options F.6	9/7/2006
54	End of Year Funding	9/26/2006
55	Adding Contract Value for GFY07 IDIQ Task Orders	9/26/2006
56	Clean up some additional SOW changes	11/9/2006
57	Award Fee Modification Period 6	11/16/2006
58	Incremental Funding	11/28/2006
59	Increase Funding	12/7/2006
60	Wage Determination/Funding	12/21/2006
61	Funding	1/22/2007
62	Section J, Attachment J-1 WLI	1/18/2007
63	Funding	1/31/2007
64	Update Section J, Appendix C, add Access & Release Sensitive Info	2/1/2007
65	Ombuds Change	2/15/2007
66	Exercise Flex Option Year 4	3/12/2007
67	Funding for \$1,082,083.34	3/2/2007
68	1018 Date Change	3/7/2007
69	Funding \$7,503,000	3/23/2007
70	Additional \$1,135,717.53	4/12/2007
71	Russian Entities Clause	4/13/2007
72	Award Fee Period 7 Payment	5/4/2007
73	Funding \$66,000	5/7/2007
74	Funding \$1,195,000	7/9/2007
75	Funding \$1,896,000	7/13/2007
76	Funding -\$543,000	9/11/2007
77	Increase Funding	9/18/2007
78	IDIQ Rate Modification	9/7/2007

MOD. NO.	DESCRIPTION	DATE
79	RSST Option exercised	9/13/2007
80	Funding	9/20/2007
81	Funding	10/25/2007
82	Funding	10/29/2007
83	B.2 and J.4 Table Update	10/30/2007
84	B.2 Table Update - FY08 TO B-08-322R1	11/20/2007
85	Incremental Funding	11/20/2007
86	Award Fee Period 8 Payment	11/28/2007
87	Funding	12/03/2007
88	Attachment J-5 US Dept. of Labor Wage Determination	12/13/2007
89	Incremental Funding	12/19/2007
90	Incremental Funding	01/11/2008
91	Incremental Funding	01/23/2008
92	SOW Section 1.3 Conf. Mgmt. - SSP 50172 Data Management Handbook	02/07/2008
93	H.3 Key Personnel and Facilities (NASA 1852.235-71) Change	02/07/2008
94	Incremental Funding	02/21/2008
95	Mutual Agreement of the Parties	03/12/2008
96	B.2 Estimated Cost and Award Fee Table update to include B-08-323R2	04/09/2008
97	Indirect Ceiling Mod - G&A	04/28/2008
98	Award Fee Period 9 Payment	4/30/2008
99	Incremental Funding	4/24/2008

**PART I - THE SCHEDULE**  
**SECTION A**  
**CONTRACT FORM**

**A.1 DETAILED TABLE OF CONTENTS**

This contract consists of the following Sections:

**SECTION A - SOLICITATION/CONTRACT FORM, SF33**  
**PAGE**

A.1	DETAILED TABLE OF CONTENTS	1-5
-----	----------------------------	-----

**SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS**

B.1	LISTING OF CLAUSES INCORPORATED BY REFERENCE	B-1
B.2	ESTIMATED COST PLUS AWARD FEE	B-1
B.3	INDEFINITE DELIVERY/INDEFINITE QUANTITY ITEMS	B-3
B.4	RESERVED	B-8
B.5	CONTRACT FUNDING	B-8

**SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT** C-

1

**SECTION D - PACKAGING AND MARKING**

D.1	LISTING OF CLAUSES INCORPORATED BY REFERENCE	D-1
D.2	PACKAGING, HANDLING, AND TRANSPORTATION	D-1
D.3	JSC MARKING INSTRUCTIONS	D-2
D.4	KSC MARKING INSTRUCTIONS	D-2

**SECTION E - INSPECTION AND ACCEPTANCE**

E.1	LISTING OF CLAUSES INCORPORATED BY REFERENCE	E-1
E.2	INSPECTION AND ACCEPTANCE	E-1
E.3	SURVEILLANCE PLAN	E-1
E.4	HUMAN SPACE FLIGHT ITEM	E-2

**SECTION F - DELIVERIES OR PERFORMANCE**

F.1	LISTING OF CLAUSES INCORPORATED BY REFERENCE	F-1
F.2	PERIOD OF PERFORMANCE	F-1
F.3	COMPLETION OF WORK	F-1
F.4	PLACE OF PERFORMANCE	F-2
F.5	OPTION TO EXTEND COMPLETION DATE	F-2
F.6	OPTION FOR THE INCREMENTAL INCREASE OF EFFORT REQUIRED DURING CONTRACT PERFORMANCE	F-3
F.7	SHIPPING INSTRUCTIONS	F-4

Contract No.

Page No.

**NNJ04AA02C**  
**(SECTION A)**

**Mission Integration Contract**

**7 of 304**

---

F.8	BILL OF LADING	F-4
-----	----------------	-----

NNJ04AA02C  
(SECTION A)

Mission Integration Contract

8 of 304

**SECTION G - CONTRACT ADMINISTRATION DATA**

G.1	LISTING OF CLAUSES INCORPORATED BY REFERENCE	G-1
G.2	AWARD FEE FOR SERVICE CONTRACTS	G-1
G.3	SUBMISSION OF VOUCHERS FOR PAYMENT	G-2
G.4	TECHNICAL DIRECTION	G-3
G.5	SECURITY/BADGING REQUIREMENTS FOR FOREIGN NATIONAL VISITORS AND EMPLOYEES OF FOREIGN CONTRACTORS	G-4
G.6	DESIGNATION OF NEW TECHNOLOGY REPRESENTATIVE AND PATENT REPRESENTATIVE	G-5
G.7	UNDERSTANDING WITH RESPECT TO COST VARIATIONS	G-6
G.8	IDENTIFICATION OF EMPLOYEES	G-6
G.9	INSTALLATION-ACCOUNTABLE GOVERNMENT PROPERTY	G-7
G.10	LIST OF INSTALLATION-ACCOUNTABLE PROPERTY AND SERVICES	G-8
G.11	TRAVEL OUTSIDE OF THE UNITED STATES	G-9
G.12	GOVERNMENT FURNISHED SERVICES (KSC)	G-9
G.13	SECURITY CONTROLS AT KSC	G-10
G.14	RIGHTS AND DATA-SPECIAL WORKS	G-11
G.15	FINANCIAL REPORTING OF NASA PROPERTY IN THE CUSTODY OF CONTRACTORS	G-11
G.16	ADVANCE AGREEMENT ON PAYMENT OF TRANSITION COSTS	G-12
G.17	INDIRECT COST CEILINGS	G-13

**SECTION H - SPECIAL CONTRACT REQUIREMENTS**

H.1	LISTING OF CLAUSES INCORPORATED BY REFERENCE	H-1
H.2	REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS OF OFFERORS	H-2
H.3	KEY PERSONNEL AND FACILITIES	H-2
H.4	HANDLING OF DATA	H-2
H.5	LEVEL-OF-EFFORT (COST)	H-2
H.6	(LIMITED) RELEASE OF CONTRACTOR CONFIDENTIAL BUSINESS INFORMATION (CBI)	H-3
H.7	ISS CONTRACT STRATEGY CONFLICT OF INTEREST AGREEMENT	H-4
H.8	ASSOCIATE CONTRACTOR AGREEMENT FOR ISS OPERATIONS AND UTILIZATION ACTIVITIES	H-4
H.9	DATA RIGHTS NOTICE	H-6
H.10	RESTRICTED RIGHTS NOTICE	H-6

NNJ04AA02C  
(SECTION A)

## Mission Integration Contract

9 of 304

H.11	LIMITED RIGHTS DATA NOTICE	H-7
H.12	MANAGEMENT AND PROTECTION OF DATA OF THIRD PARTIES	H-7
H.13	INFORMATION INCIDENTAL TO CONTACT ADMINISTRATION	H-8
H.14	ACCESS TO CONTRACTOR DATA	H-8
H.15	ADDITIONAL EXPORT CONTROL REQUIREMENTS	H-10
H.16	TASK ORDERING PROCEDURE	H-12
H.17	ADJUSTMENT FOR COMPLETION FORM	H-13
H.18	RUSSIAN TRAVEL	H-14
H.19	GOVERNMENT INSIGHT	H-14
H.20	REPROCUREMENT DATA PACKAGE	H-15

**SECTION I - CONTRACT CLAUSES**

I.1	LISTING OF CLAUSES INCORPORATED BY REFERENCE	I-1
I.2	CLAUSES INCORPORATED BY REFERENCE	I-4
I.3	APPROVAL OF CONTRACT	I-4
I.4	SECURITY CLASSIFICATION REQUIREMENTS	I-4
I.5	SECURITY REQUIREMENTS FOR UNCLASSIFIED INFORMATION TECHNOLOGY RESOURCES	I-4
I.6	OMBUDSMAN	I-7
I.7	OPTION TO EXTEND THE TERM OF THE CONTRACT	I-8
I.8	TAXES--FOREIGN COST-REIMBURSEMENT CONTRACTS	I-8
I.9	ENGINEERING CHANGE PROPOSALS	I-8
I.10	SHARED SAVINGS	I-10
I.11	SUBCONTRACTS FOR COMMERCIAL ITEMS	I-13
I.12	GOVERNMENT PROPERTY (COST REIMBURSEMENT, TIME-AND-MATERIAL, OR LABOR-HOUR CONTRACTS) (DEVIATION)	I-14
I.13	ORDERING	I-19
I.14	ORDER LIMITATIONS	I-20
I.15	INDEFINITE QUANTITY	I-20
I.16	STATEMENT OF EQUIVALENT RATES FOR FEDERAL HIRES	I-21

**SECTION J - LIST OF ATTACHMENTS**

J-1	TABLE J-1 MISSION INTEGRATION CONTRACT METHODS STATEMENT OF WORK Appendix A: Key Terms Appendix B: Acronym List Appendix C: Applicable and Reference Documents Appendix D: Government Furnished Property Appendix E: SOW-PWBS Map Appendix F: Description of Increments and Planning Periods Appendix G: Administrative Meeting Support Requirements Example Appendix H: Forms Appendix I: Government Applications Appendix J: Work Load Indicators	J-1
J-2	DATA REQUIREMENTS LIST (DRL) AND DATA REQUIREMENTS DOCUMENTS (DRD)	
J-3	SAFETY AND HEALTH PLAN	
J-4	AWARD FEE EVALUATION PLAN	
J-5	U.S. DEPARTMENT OF LABOR WAGE DETERMINATION	
J-6	IT SECURITY PLAN	

**SECTION K – REPRESENTATION, CERTIFICATIONS, & OTHER STATEMENTS OF OFFERORS**

K.1	CERTIFICATION AND DISCLOSURE REGARDING PAYMENT TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS	K-1
K.2	TAXPAYER IDENTIFICATION	K-2
K.3	CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS PLACE OF PERFORMANCE	K-3
K.4	SMALL BUSINESS PROGRAM REPRESENTATIONS	K-5
K.5	PREVIOUS CONTRACTS AND COMPLIANCE REPORTS	K-7
K.6	AFFIRMATIVE ACTION COMPLIANCE	K-8
K.7	COMPLIANCE WITH VETERAN EMPLOYMENT REPORTING REQUIREMENTS	K-8
K.8	CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING	K-8
K.9	REPRESENTATION OF LIMITED RIGHTS DATA AND RESTRICTED COMPUTER SOFTWARE	K-9
K.10	USE OF GOVERNMENT-OWNED PROPERTY	K-10

Mission Integration Contract

---

**PART I - THE SCHEDULE**

**SECTION B - SUPPLIES OR SERVICES AND PRICE/COSTS**

**B.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE**

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

**I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)**

CLAUSE NUMBER	DATE	TITLE
------------------	------	-------

None included by reference.

**II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES**

CLAUSE NUMBER	DATE	TITLE
------------------	------	-------

None included by reference  
(End-of-Clause)

**B.2 ESTIMATED COST PLUS AWARD FEE**

The contractor shall provide products and services that support International Space Station Program (ISSP) functions related to mission planning, mission integration, mission operations, International Partner Integration, Russian language and logistics services and Mission Safety in accordance with Section J-1, Statement of Work (SOW); Section J Data Requirements Descriptions (DRD's); and Section J Performance Metrics. Table B.2-1 total contract value broken down between Transition Period, Completion Form, Level-Of-Effort (LOE), and Indefinite Delivery/Indefinite Quantity (IDIQ). IDIQ data will be entered into the tables in this clause as they are negotiated and definitized, or otherwise changed. The contract value in Table B.2-1 will not include option values unless they are exercised and become an active part of the contract.

TABLE B.2-1 Total Contract Value

	Estimated Cost	Fee	Price
Transition Period	\$249,241	\$0.00	\$249,241
Completion-Form	\$50,168,741	\$3,135,546	\$53,304,288
LOE	\$25,305,680	\$1,581,693	\$26,887,373
IDIQ	\$33,531,676	\$2,081,730	\$35,613,406

Contract No.  
NNJ04AA02C

Modification No. 99  
(SECTION B)

**Mission Integration Contract**

---

<b>TOTAL</b>	\$109,255,338	\$6,798,969	\$116,054,308
--------------	---------------	-------------	---------------

(End-of-Clause)

Mission Integration Contract

**B.3 INDEFINITE DELIVERY/INDEFINITE QUANTITY ITEMS**

The Government may order Indefinite Delivery/Indefinite Quantity (IDIQ) services at any time after contract start, in accordance with the procedures set forth in Clause H.16 of this contract. The contractor shall provide engineering and technical skills in support of Government-led studies, analyses, new technology development projects and unforeseen hardware requirements. The tasks will be dynamic in nature and may be performed in a teaming arrangement with the Government or other contractors. The Government will define the overall requirements of each order, including intermediate and final deliverable end items, and decide the respective responsibilities of each organization participating in the effort.

The contractor shall utilize the fully burdened rates shown in Table B.3-1 through B.3-6 for pricing task orders. The contractor shall only accept task orders issued by the contracting officer. The total value of task orders issued under this contract shall not exceed a maximum of \$41 million. The minimum amount of IDIQ supplies and services ordered in total and paid for under this contract shall be \$1million. This amount includes both cost and fee.

Table B.3-1	RESERVED		
-------------	----------	--	--

Table B.3-2	Basic Period, First Contract Year (1/1/04 through 9/30/04)	Unit	Price
	Interpreter U.S.	Per hour	
	Interpreter Russia	Per hour	
	Translator U.S.	Per hour	
	Language Instructor U.S.	Per hour	
	Language Instructor Russia	Per hour	
	Supervisor U.S.	Per hour	
	Supervisor Russia	Per hour	
	Administrative Assistant	Per hour	
	Int. Administrative Assistant I U.S.	Per hour	
	Int. Administrative Assistant I Russia	Per hour	
	Int. Administrative Assistant II U.S.	Per hour	
	Rates to be applied to non-labor costs such as materials. Identify the rate and basis of application	Indirect Rates G&A	

Contract No.  
NNJ04AA02C

Modification No. 99  
(SECTION B)

Mission Integration Contract

---

	(e.g., G&A, Material Handling, etc.)		
	1. Basis (Contractor fill in): 2. Basis (Contractor fill in): 3. Basis (Contractor fill in):	Total Cost	
	Maximum Fee -- % of total proposed cost for estimating purposes		

Mission Integration Contract

Table B.3-3	Basic Period, Second Contract Year (10/1/04 through 9/30/05)	Unit	Price
	Interpreter U.S.	Per hour	
	Interpreter Russia	Per hour	
	Translator U.S.	Per hour	
	Language Instructor U.S.	Per hour	
	Language Instructor Russia	Per hour	
	Supervisor U.S.	Per hour	
	Supervisor Russia	Per hour	
	Administrative Assistant	Per hour	
	Int. Administrative Assistant I U.S.	Per hour	
	Int. Administrative Assistant I Russia	Per hour	
	Int. Administrative Assistant II U.S.	Per hour	
	Rates to be applied to non-labor costs such as materials. Identify the rate and basis of application (e.g., G&A, Material Handling, etc.)	Indirect Rates G&A	
	1. Basis (Contractor fill in): 2. Basis (Contractor fill in): 3. Basis (Contractor fill in):	Total Cost	
	Maximum Fee -- % of total proposed cost for estimating purposes		

Table B.3-4	Basic Period, Third Contract Year (10/1/05 through 9/30/06)	Unit
	Interpreter U.S.	Per hour
	Interpreter Russia	Per hour
	Translator U.S.	Per hour
	Language Instructor U.S.	Per hour
	Language Instructor Russia	Per hour
	Supervisor U.S.	Per hour
	Supervisor Russia	Per hour
	Administrative Assistant	Per hour
	Int. Administrative Assistant I	Per hour

Contract No.  
NNJ04AA02C

Modification No. 99  
(SECTION B)

Mission Integration Contract

---

	U.S.	
	Int. Administrative Assistant I Russia	Per hour
	Int. Administrative Assistant II U.S.	Per hour
	Manager	Per hour
	IT Professional I	Per hour
	IT Professional II	Per hour
	IT Professional III	Per hour

Mission Integration Contract

	Rates to be applied to non-labor costs such as materials. Identify the rate and basis of application (e.g., G&A, Material Handling, etc.)	Indirect Rates G&A
	1. Basis (Contractor fill in): 2. Basis (Contractor fill in): 3. Basis (Contractor fill in):	Total Cost
	Maximum Fee -- % of total proposed cost for estimating purposes	

<b>Table B.3-5</b>	<b>Basic Period, Fourth Contract Year (10/1/06 through 9/30/07)</b>	<b>Unit</b>
	Interpreter U.S.	Per hour
	Interpreter Russia	Per hour
	Translator U.S.	Per hour
	Language Instructor U.S.	Per hour
	Language Instructor Russia	Per hour
	Supervisor U.S.	Per hour
	Supervisor Russia	Per hour
	Administrative Assistant	Per hour
	Int. Administrative Assistant I U.S.	Per hour
	Int. Administrative Assistant I Russia	Per hour
	Int. Administrative Assistant II U.S.	Per hour
	Manager	Per hour
	IT Professional I	Per hour
	IT Professional II	Per hour
	IT Professional III	Per hour
	Rates to be applied to non-labor costs such as materials. Identify the rate and basis of application (e.g., G&A, Material Handling, etc.)	Indirect Rates G&A
	1. Basis (Contractor fill in): 2. Basis (Contractor fill in):	Total Cost

Mission Integration Contract

	3. Basis (Contractor fill in):	
	Maximum Fee -- % of total proposed cost for estimating purposes	

Table B.3-6	Basic Period, Fifth Contract Year (10/1/07 through 9/30/08)	Unit	Price
	Interpreter U.S.	Per hour	
	Interpreter Russia	Per hour	
	Translator U.S.	Per hour	
	Language Instructor U.S.	Per hour	
	Language Instructor Russia	Per hour	
	Supervisor U.S.	Per hour	
	Supervisor Russia	Per hour	
	Administrative Assistant	Per hour	
	Int. Administrative Assistant I U.S.	Per hour	
	Int. Administrative Assistant I Russia	Per hour	
	Int. Administrative Assistant II U.S.	Per hour	
	Manager	Per hour	
	IT Professional I	Per hour	
	IT Professional II	Per hour	
	IT Professional III	Per hour	
	Rates to be applied to non-labor costs such as materials. Identify the rate and basis of application (e.g., G&A, Material Handling, etc.)	Indirect Rates G&A	
	1. Basis (Contractor fill in): 2. Basis (Contractor fill in): 3. Basis (Contractor fill in):	Total Cost	
	Maximum Fee -- % of total proposed cost for estimating purposes		

Table B.3-7	Option 1, Sixth Contract Year (10/1/08 through 9/30/09) IF	Unit	Price
-------------	---	------	-------

Contract No.  
NNJ04AA02C

Modification No. 99  
(SECTION B)

Mission Integration Contract

	<b>EXERCISED</b>	
	Interpreter U.S.	Per hour
	Interpreter Russia	Per hour
	Translator U.S.	Per hour
	Language Instructor U.S.	Per hour
	Language Instructor Russia	Per hour
	Supervisor U.S.	Per hour
	Supervisor Russia	Per hour
	Administrative Assistant	Per hour
	Int. Administrative Assistant I U.S.	Per hour
	Int. Administrative Assistant I Russia	Per hour
	Int. Administrative Assistant II U.S.	Per hour
	Manager	Per hour
	IT Professional I	Per hour
	IT Professional II	Per hour
	IT Professional III	Per hour

Mission Integration Contract

	Rates to be applied to non-labor costs such as materials. Identify the rate and basis of application (e.g., G&A, Material Handling, etc.)	Indirect Rates G&A
	1. Basis (Contractor fill in): 2. Basis (Contractor fill in): 3. Basis (Contractor fill in):	Total Cost
	Maximum Fee → % of total proposed cost for estimating purposes	

<b>Table B.3-8</b>	<b>Option 2, Seventh Contract Year (10/1/09 through 9/30/10) IF EXERCISED</b>	<b>Unit</b>
	Interpreter U.S.	Per hour
	Interpreter Russia	Per hour
	Translator U.S.	Per hour
	Language Instructor U.S.	Per hour
	Language Instructor Russia	Per hour
	Supervisor U.S.	Per hour
	Supervisor Russia	Per hour
	Administrative Assistant	Per hour
	Int. Administrative Assistant I U.S.	Per hour
	Int. Administrative Assistant I Russia	Per hour
	Int. Administrative Assistant II U.S.	Per hour
	Manager	Per hour
	IT Professional I	Per hour
	IT Professional II	Per hour
	IT Professional III	Per hour
	Rates to be applied to non-labor costs such as materials. Identify the rate and basis of application (e.g., G&A, Material Handling, etc.)	Indirect Rates G&A
	1. Basis (Contractor fill in):	Total Cost

Contract No.  
NNJ04AA02C

Modification No. 99  
(SECTION B)

Mission Integration Contract

---

	2. Basis (Contractor fill in): 3. Basis (Contractor fill in):	
	Maximum Fee -- % of total proposed cost for estimating purposes	

(End-of-Clause)

**B.4 RESERVED**

Mission Integration Contract

---

**B.5 CONTRACT FUNDING (NASA 1852.232-81)(JUN 1990)**

(a) For purposes of payment of cost, exclusive of fee, in accordance with the Limitation of Funds clause, the total amount allotted by the Government to this contract is \$108,201,701.42.

This allotment covers the following estimated period of performance: Transition Period from November 5, 2003 through December 31, 2003 and Contract Start from January 1, 2004 to September 30, 2008.

(b) An additional amount of \$6,645,373.86 is obligated under this contract for payment of fee.

(End-of-Clause)

**SECTION C**

**DESCRIPTION/SPECIFICATION/WORK STATEMENT**

**C.1 SCOPE OF WORK**

The work the Contractor shall perform under this contract is described in Attachments J-1 of this contract. The Data Requirements Documents are described in Attachment J-2 of this contract.

(End-of-Clause)

[END OF SECTION]

**SECTION D****PACKAGING AND MARKING****D.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE**

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

**I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)**

CLAUSE NUMBER	DATE	TITLE
------------------	------	-------

None included by reference.

**II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES**

CLAUSE NUMBER	DATE	TITLE
------------------	------	-------

None included by reference

(End Of Clause)

**D.2 PACKAGING, HANDLING, AND TRANSPORTATION (NASA 1852.211-70)  
(JUN 2000)**

(a) The contractor shall comply with NPG 6000.1E, "Requirements for Packaging, Handling, and Transportation for Aeronautical and Space Systems, Equipment, and Associated Components", dated April 26, 1999, as may be supplemented by the statement of work or specifications of this contract, for all items designated Class I, II, or III.

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

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

(End of clause)

**D.3 JSC MARKING INSTRUCTIONS**

Transportation Officer, Building 421, NASA Johnson Space Center, 2101 NASA Parkway, Houston, TX 77058-3696

In addition, special marks or ultimate consignment will be shown as:

Mark for:	Accountable Property Officer:	_____ {contractor fill in} _____
Mark with:	Purchase Request No.:	_____ {contractor fill in} _____
	Contract Number:	NNJ04AA02C
	For re-issue to:	_____ {contractor fill in} _____

(End of clause)

**D.4 KSC 52.247-92 MARKING INSTRUCTIONS (NOV 2000)**

Transportation Officer, NASA J-BOSC Warehouse, Building M6-744 Kennedy Space Center, Florida 32899

In addition, special marks or ultimate consignee will be shown as:

Marked For:

Ultimate Consignee Code	_____ {contractor fill in} _____
Building #	_____ {contractor fill in} _____
Contract #	NNJ04AA02C

(End of clause)

[END OF SECTION]

**SECTION E****INSPECTION AND ACCEPTANCE****E.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE**

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

**I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)**

CLAUSE NUMBER	DATE	TITLE
52.246-3	MAY 2001	INSPECTION OF SUPPLIES – COST-REIMBURSEMENT
52.246-5	APR 1984	INSPECTION OF SERVICES – COST-REIMBURSEMENT

**II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES**

CLAUSE NUMBER	DATE	TITLE
------------------	------	-------

None included by Reference

(End of Clause)

**E.2 INSPECTION AND ACCEPTANCE (JSC 52.246-90)(JUN 1991)**

**Final inspection and acceptance shall be accomplished by the Contracting Officer or his/her duly authorized representative at any of the locations specified in the statement of work where services shall be provided.**

(End of Clause)

**E.3 SURVEILLANCE PLAN**

The Surveillance Plan will be developed and implemented by the Contracting Officer's Technical Representative (COTR) as a part of the contract administration and monitoring activities conducted to assure that the Government receives products and services that conform to contract requirements. The nature and extent of the surveillance contemplated in this plan will be based, in part, on the specific content of the contractor's Performance Assessment Plan and Performance Assessment Reports (DRD B-PM-04).

(End of Clause)

Contract No.

Page No.

**NNJ04AA02C**  
**(SECTION E)**

**Mission Integration Contract**

**28 of 304**

---

**E.4 HUMAN SPACE FLIGHT ITEM (NASA 1852.246-73)(MAR 1997)**

The Contractor shall include the following statement in all subcontracts and purchase orders placed by it in support of this contract, without exception as to amount or subcontract level:

"FOR USE IN HUMAN SPACE FLIGHT; MATERIALS, MANUFACTURING, AND WORKMANSHIP OF HIGHEST QUALITY STANDARDS ARE ESSENTIAL TO ASTRONAUT SAFETY.

IF YOU ARE ABLE TO SUPPLY THE DESIRED ITEM WITH A HIGHER QUALITY THAN THAT OF THE ITEMS SPECIFIED OR PROPOSED, YOU ARE REQUESTED TO BRING THIS FACT TO THE IMMEDIATE ATTENTION OF THE PURCHASER."

**(End of clause)**

[END OF SECTION]

---

**SECTION F**

**DELIVERIES OR PERFORMANCE**

**F.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE**

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

**I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)**

CLAUSE NUMBER	DATE	TITLE
52.242-15 ALTERNATE I	AUG 1989	STOP-WORK ORDER AND (APR 1984)

**II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES**

CLAUSE NUMBER	DATE	TITLE
None		None

(End of Clause)

**F.2 PERIOD OF PERFORMANCE**

The period of performance for the level-of-effort work of this contract shall be the contract effective date through September 30, 2008.

(End of Clause)

**F.3 COMPLETION OF WORK (JSC 52.211-95)(OCT 2001)**

The completion-form work required under this contract, including submission of all reports, shall be completed on or before September 30, 2008.

(End of Clause)

**F.4 PLACE OF PERFORMANCE**

This contract may be performed at:

- (1) Johnson Space Center and the immediate surrounding geographical area
- (2) John F. Kennedy Space Center and the immediate surrounding geographical area
- (3) Other work locations in and outside the United States, including Russia, in support of the statement of work requirements.

(End of clause)

**F.5 OPTION TO EXTEND COMPLETION DATE (JSC 52.217-90) (OCT 1996)**

The Government may require the contractor to continue to perform services under this contract. The Contracting Officer may exercise this option by issuance of a unilateral contract modification 30 days or more before the end of the period of performance and completion of work set forth in Articles F.2 and F.3. Should an option be exercised, the resultant contract will include all terms and conditions of the basic contract as it exists immediately prior to the exercise of the option, except for the following changes:

**OPTION 1**

A. B.2 entitled " Cost Plus Award Fee", Table B.2-1 shall be modified to reflect the addition of \$8,633,292 to the estimated cost and \$539,581 to the maximum award fee for completion form services; an addition of \$5,051,095 to the estimated cost and \$315,693 to the maximum award fee for LOE services. The total addition to estimated cost and maximum award fee is \$14,539,661.

B. B.3 entitled "Indefinite Delivery/Indefinite Quantity Items" shall be modified to reflect the addition of \$7,452,469 the maximum order limit for services and products.

C. F.2 entitled "Period of Performance" shall be modified to extend the period of performance to September 30, 2009.

D. F.3 entitled "Completion of Work" shall be modified to extend the ending date of the contract to September 30, 2009.

E. H.5 entitled "Level-of-Effort (Cost)" shall be modified by increasing the total direct labor hours by 109,000 hours.

**OPTION 2**

A. B.2 entitled " Cost Plus Award Fee", Table B.2-1 shall be modified to reflect the addition of \$8,831,195 to the estimated cost and \$551,950 to the maximum award fee for completion form services; an addition of \$5,190,691 to the estimated cost and \$324,428 to the maximum award fee for LOE services. The total addition to estimated cost and maximum award fee is \$14,989,264.

NNJ04AA02C  
(SECTION F)

Mission Integration Contract

32 of 304

B. B.3 entitled "Indefinite Delivery/Indefinite Quantity Items" shall be modified to reflect the addition of \$7,674,302 to the maximum order limit for services and products.

C. F.2 entitled "Period of Performance" shall be modified to extend the period of performance to September 30, 2010.

D. F.3 entitled "Completion of Work" shall be modified to extend the ending date of the contract to September 30, 2010.

E. H.5 entitled "Level-of-Effort (Cost)" shall be modified by increasing the total direct labor hours by 109,000 hours.

(End of Clause)

**F.6 OPTION FOR THE INCREMENTAL INCREASE OF EFFORT  
REQUIRED DURING CONTRACT PERFORMANCE (JSC 52.217-91)  
(JAN 1990)**

**Options 3 through 9 (Flex Options)**

The Government may increase the number of LOE hours required to be furnished during any individual 1-year period, or the first period which is nine months, of performance by an amount ranging from 1 to 28,000 labor-hours. If the Government elects to exercise its option to increase the number of labor-hours to be furnished, the contractor will be so notified by a contract modification executed by the contracting officer. The terms and conditions relating to the Government's option rights as provided herein are as follows:

Note: The blanks in this clause are to be completed by the Contractor as appropriate.

(a) The Government may increase the labor-hours to be furnished (up to the maximum amount specified) by the exercise of one option, or by the exercise of multiple options, during any 1-year period, or the first 9 month period of performance.

(b) If the Government exercises one or more options pursuant to this provision, the estimated cost and fee values will be increased as follows:

(i) (Option 3) For options exercised during contract year 1, which is 9 months, (January 1, 2004 through September 30, 2004), the estimated cost and award fee will be increased by \$39.66 and \$2.48, respectively, for every hour ordered by the exercise of an option.

(ii) (Option 4) For options exercised during contract year 2, (October 1, 2004 through September 30, 2005), the estimated cost and award fee will be increased by \$40.48 and \$2.53, respectively, for every hour ordered by the exercise of an option.

(iii) (Option 5) For options exercised during contract year 3, (October 1, 2005 through September 30, 2006), the estimated cost and award fee will be increased by \$41.78 and \$2.61, respectively, for every hour ordered by the exercise of an option.

NNJ04AA02C  
(SECTION F)

Mission Integration Contract

33 of 304

(iv) (Option 6) For options exercised during contract year 4, (October 1, 2006 through September 30, 2007), the estimated cost and award fee will be increased by \$42.65 and \$2.67, respectively, for every hour ordered by the exercise of an option.

(v) (Option 7) For options exercised during contract year 5, (October 1, 2007 through September 30, 2008), the estimated cost and award fee will be increased by \$43.40 and \$2.71, respectively, for every hour ordered by the exercise of an option.

(vi) (Option 8) For options exercised during contract year 6, (October 1, 2008 through September 30, 2009), the estimated cost and award fee will be increased by \$44.60 and \$2.79, respectively, for every hour ordered by the exercise of an option.

(vii) (Option 9) For options exercised during contract year 7, (October 1, 2009 through September 30, 2010), the estimated cost and award fee will be increased by \$45.83 and \$2.86, respectively, for every hour ordered by the exercise of an option.

(c) **The total direct labor hours identified in H.5 will be increased by the amount specified by the contracting officer in the contract amendment affecting the exercise of the option.**

(End of clause)

#### **F.7 SHIPPING INSTRUCTIONS (JSC 52.247-94) (APR 1997)**

All documentation shall be shipped to the addresses cited in Section J, Attachment 2, Data Requirements List – Data Requirements Document.

Unless otherwise specified in the Service Request, shipment of all other items shall be as follows:

##### Parcel Post Shipments and Freight Shipments

Ship to:	Transportation Officer, Building 421 NASA Johnson Space Center 2101 NASA Parkway Houston, TX 77058-3696
Mark for:	Accountable Property Officer
Mark with:	Purchase Request No. TBD
Contract Number:	NNJ04AA02C
For reissue to:	TBD

(End of clause)

#### **F.8 BILLS OF LADING (NASA 1852.247-73) (JUNE 2002)**

The purpose of this clause is to define when a commercial bill of lading or a government bill of lading is to be used when shipments of deliverable items under this contract are f.o.b. origin.

NNJ04AA02C  
(SECTION F)

Mission Integration Contract

34 of 304

(a) **Commercial Bills of Lading.** All domestic shipments shall be made via commercial bills of lading (CBLs). The Contractor shall prepay domestic transportation charges. The Government shall reimburse the Contractor for these charges if they are added to the invoice as a separate line item supported by the paid freight receipts. If paid receipts in support of the invoice are not obtainable, a statement as described below must be completed, signed by an authorized company representative, and attached to the invoice. "I certify that the shipments identified below have been made, transportation charges have been paid by (company name), and paid freight or comparable receipts are not obtainable.

Contract or Order Number: \_\_\_\_\_  
Destination: \_\_\_\_\_".

(b) **Government Bills of Lading.**

(1) International (export) and domestic overseas shipments of items deliverable under this contract shall be made by Government bills of lading (GBLs). As used in this clause, "domestic overseas" means non-continental United States, i.e. Hawaii, Commonwealth of Puerto Rico, and possessions of the United States.

(2) At least 15 days before shipment, the Contractor shall request in writing GBLs from: \_\_\_\_\_ [Insert name, title, and mailing address of designated transportation officer or other official delegated responsibility for GBLs]. If time is limited, requests may be by telephone: \_\_\_\_\_ [Insert appropriate telephone number]. Requests for GBLs shall include the following information.

- (i) Item identification/ description.
- (ii) Origin and destination.
- (iii) Individual and total weights.
- (iv) Dimensional Weight.
- (v) Dimensions and total cubic footage.
- (vi) Total number of pieces.
- (vii) Total dollar value.
- (viii) Other pertinent data.

**(End of clause)**

**F.9 OPTION TO EXTEND RUSSIAN SEGMENT SUPPORT TEAM (RSST)**

The Government may require the contractor to continue to perform RSST services under this contract during the basic period of performance. The Contracting Officer may exercise this option by issuance of a unilateral contract modification 30 days or more before the end of the base period for the RSST. Should an option be exercised, the

resultant contract will include all terms and conditions of the basic contract, as it exists immediately prior to the exercise of the RSST option, except for the following changes:

**OPTION 1**

- A. B.2 entitled "Cost Plus Award Fee", Table B.2-1 shall be modified to reflect the Addition of \$2,242,564 to the estimated cost and \$140,160 to the maximum award fee for the completion form period. The period of performance shall be October 1, 2005 through September 30, 2006.

**OPTION 2**

- A. B.2 entitled "Cost Plus Award Fee", Table B.2-1 shall be modified to reflect the Addition of \$2,244,229 to the estimated cost and \$140,264 to the maximum award fee for the completion form period. The period of performance shall be October 1, 2006 through September 30, 2007.

**OPTION 3**

- A. B.2 entitled "Cost Plus Award Fee", Table B.2-1 shall be modified to reflect the Addition of \$2,244,798 to the estimated cost and \$140,300 to the maximum award fee for the completion form period. The period of performance shall be October 1, 2007 through September 30, 2008.

**(End of clause)**

[END OF SECTION]

**SECTION G**

**CONTRACT ADMINISTRATION DATA**

**G.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE**

**NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:**

**I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)**

CLAUSE NUMBER	DATE	TITLE
52.227-11	JUN 1997	PATENT RIGHTS – RETENTION BY THE CONTRACTOR (SHORT FORM) AS NASA FAR SUPPLEMENT
	MODIFIED BY 1852.227-11	

**II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES**

CLAUSE NUMBER	DATE	TITLE
1852.227-11		PATENT RIGHTS – RETENTION BY THE CONTRACTOR (SHORT FORM)
1852.242-73	JUL 2000	NASA CONTRACTOR FINANCIAL MANAGEMENT REPORTING
1852.245-70	JUL 1997	CONTRACTOR REQUESTS FOR GOVERNMENT OWNED EQUIPMENT
1852.245-73 IN	AUG 2001	FINANCIAL REPORTING OF NASA PROPERTY THE CUSTODY OF CONTRACTORS

(End Of Clause)

**G.2 AWARD FEE FOR SERVICE CONTRACTS (NASA 1852.216-76) (JUN 2000)**

(a) The contractor can earn award fee from a minimum of zero dollars to the maximum stated in clause B.2 "Cost Plus Award Fee," in this contract.

(b) Beginning 6 months after the effective date of this contract, the Government shall evaluate the contractor's performance every 6 months to determine the amount of award fee earned by the contractor during the period. The contractor may submit a self-evaluation of performance for each evaluation period under consideration. These self-evaluations will be considered by the Government in its evaluation. The Government's

Fee Determination Official (FDO) will determine the award fee amounts based on the contractor's performance in accordance with the Award Fee Plan in Section J, Attachment J-4. The plan may be revised unilaterally by the Government prior to the beginning of any rating period to redirect emphasis.

(c) The Government will advise the contractor in writing of the evaluation results. The Contracting Officer will issue a unilateral modification to the contract that will recognize the award fee earned. The contractor is not required to submit a separate voucher for earned award fee. The NASA/JSC Financial Services Branch, mail code LF2, will make payment based on the unilateral modification.

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

(e) The amount of award fee which can be awarded in each evaluation period is limited to the amounts set forth in Attachment J-4 Award Fee Plan. Award fee which is not earned in an evaluation period cannot be reallocated to future evaluation periods.

(f) (1) Provisional award fee payments will be made under this contract pending the determination of the amount of fee earned for an evaluation period. If applicable, provisional award fee payments will be made to the contractor on a monthly basis. The total amount of award fee available in an evaluation period that will be provisionally paid is the lesser of 80 percent or the prior period's evaluation score.

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

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

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

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

(End of clause)

**G.3 SUBMISSION OF VOUCHERS FOR PAYMENT (NASA 1852.216-87)  
(MAR 1998)**

(a) The designated billing office for cost vouchers for purposes of the Prompt Payment clause of this contract is indicated below. Public vouchers for payment of costs shall include a reference to this contract, NNJ04AA02C.

- (b) (1) If the contractor is authorized to submit interim cost vouchers directly to the NASA paying office, the original voucher should be submitted to:

NASA Lyndon B. Johnson Space Center  
LF2/Financial Management (Payables)  
2101 NASA Parkway  
Houston, TX 77058-3696

- (2) For any period that the Defense Contract Audit Agency has authorized the contractor to submit interim cost vouchers directly to the Government paying office, interim vouchers are not required to be sent to the Auditor, and are considered to be provisionally approved for payment, subject to final audit.
- (3) Copies of vouchers should be submitted as directed by the Contracting Officer.

- (c) If the contractor is not authorized to submit interim cost vouchers directly to the paying office as described in paragraph (b), the contractor shall prepare and submit vouchers as follows:

(1) One original Standard Form (SF) 1034, SF 1035, or equivalent contractor's attachment to: DCAA Houston Branch  
8876 Gulf Freeway, Suite 500  
Houston, Texas 77017-8544

- (2) Five copies of SF 1034, SF 1035A, or equivalent contractor's attachment to the following offices by insertion in the memorandum block of their names and addresses:

- (i) Copy 1 NASA Contracting Officer
- (ii) Copy 2 Auditor
- (iii) Copy 3 Contractor
- (iv) Copy 4 Contract administration office; and
- (v) Copy 5 Project management office.

- (3) The Contracting Officer may designate other recipients as required.

- (d) Public vouchers for payment of fee shall be prepared similarly to the procedures in paragraphs (b) or (c) of this clause, whichever is applicable, and forwarded to:

NASA Lyndon B. Johnson Space Center  
BG/Contracting Officer  
2101 NASA Parkway  
Houston, TX 77058

This is the designated billing office for fee vouchers for purposes of the Prompt Payment clause of this contract.

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

(End of clause)

**G.4 TECHNICAL DIRECTION (NASA 1852.242-70)(SEP 1993)**

(a) Performance of the work under this contract is subject to the written technical direction of the Contracting Officer's Technical Representative (COTR), who shall be specifically appointed by the Contracting Officer in writing in accordance with NASA FAR Supplement 1842.270. "Technical direction" means a directive to the contractor that approves approaches, solutions, designs, or refinements; fills in details or otherwise completes the general description of work or documentation items; shifts emphasis among work areas or tasks; or furnishes similar instruction to the contractor. Technical direction includes requiring studies and pursuit of certain lines of inquiry regarding matters within the general tasks and requirements in Attachment J-1 of this contract.

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

- (1) Constitutes an assignment of additional work outside the statement of work;
- (2) Constitutes a change as defined in the Changes clause;
- (3) Constitutes a basis for any increase or decrease in the award fee or the time required for contract performance;
- (4) Changes any of the expressed terms, conditions, or specifications of the contract; or
- (5) Interferes with the contractor's rights to perform the terms and conditions of the contract.

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

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

- (1) Rescinded in its entirety; or
- (2) Within the requirements of the contract and does not constitute a change under the Changes clause of the contract, and that the contractor should proceed promptly with its performance.

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

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

(End of clause)

**G.5 Security/Badging Requirements for Foreign National Visitors and Employees/Representatives of Foreign Contractors (JSC 52.204-91) (JAN 2006)**

(a) An employee of a domestic Johnson Space Center (JSC) contractor or its subcontractor who is not a U.S. citizen (foreign national) may not be admitted to the JSC site for purposes of performing work without special arrangements. In addition, all employees or representatives of a foreign JSC contractor/subcontractor may not be admitted to the JSC site without special arrangements. For employees as described above, advance notice must be given to the Security Office of the host installation [JSC or White Sands Test Facility (WSTF)] at least 3 weeks prior to the scheduled need for access to the site so that instructions on obtaining access may be provided. Contractors should be aware that approval for access to the site and issuance of a badge may take much longer than three weeks and sufficient lead time must be allowed to accommodate the approval process.

(b) All visit/badge requests for persons described in (a) above must be entered in the NASA Foreign National Management System (NFMMS) for acceptance, review, concurrence and approval purposes. When an authorized company official requests a JSC or WSTF badge for site access, he/she is certifying that steps have been taken to ensure that its contractor or subcontractor employees, visitors, or representatives will not be given access to export-controlled or classified information for which they are not authorized. The authorized company officials shall serve as the contractor's representative(s) in certifying that all visit/badge request forms are processed in accordance with JSC and WSTF security and export control procedures. No foreign national, representative, or resident alien contractor/subcontractor employee shall be granted access into JSC or WSTF until approved and processed through the NFMMS. Unescorted access will not be granted unless a favorable National Agency Check (NAC) has been completed by the JSC Security Office, and an approved NASA Foreign National Visitor Security/Technology Control Plan (STTCP), (previously called the Access Control Plan) has been submitted and approved.

(c) The contractor agrees that it will not employ for the performance of work onsite at the JSC or WSTF any individuals who are not legally authorized to work in the United States. If the JSC or WSTF Industrial Security Specialist or the contracting officer has reason to believe that any employee of the contractor may not be legally authorized to work in the United States and/or on the contract, the contractor may be required to furnish copies of Form I-9 (Employment Eligibility Verification), U.S. Department of Labor Application for Alien Employment Certification, and any other type of employment authorization document.

The contractor agrees to provide the information requested by the JSC or WSTF Security Office in order to comply with NASA policy directives and guidelines related to foreign visits to NASA facilities so that (1) the visitor/employee/ representative may be allowed access to JSC or other NASA Centers for performance of this contract, (2) required investigations can be conducted, and (3) required annual or revalidation reports can be submitted to NASA Headquarters. All requested information must be submitted in a timely manner in accordance with instructions provided by JSC or any other Center to be visited.

(End of clause)

**G.6 DESIGNATION OF NEW TECHNOLOGY REPRESENTATIVE AND PATENT REPRESENTATIVE (NASA 1852.227-72) (JUL 1997)**

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

#### NEW TECHNOLOGY REPRESENTATIVE

New Tech Rep and Patent Rep HA/Technology Transfer & Commercialization Office  
NASA Johnson Space Center, Houston, TX 77058

#### PATENT REPRESENTATIVE

New Tech Rep and Patent Rep HA/Technology Transfer & Commercialization Office  
NASA Johnson Space Center, Houston, TX 77058

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

(End of clause)

#### **G.7 UNDERSTANDING WITH RESPECT TO COST VARIATIONS** **(JSC 52.232-93) (MAR 1989)**

The estimated cost of this contract is based on cost estimates for a number of cost elements (e.g., direct labor, overhead, materials, travel). One or more of these estimates was made by the Government and provided to the contractor in the solicitation leading to this contract. The parties recognize that the contractor's obligation to perform tasks within the scope of the Statement of Work could result in actual contractor expenditures which are greater or less than the Government's estimates provided to the contractor for the related cost element. Should such be the case, the parties agree that there will be no adjustment to the fee provided for in this contract, nor to any other terms and conditions hereof, except the contract estimated cost, should that become necessary. Any such adjustment in estimated cost will be subject to the terms of the "Limitation of Cost" or "Limitation of Funds" clause hereof, whichever is applicable.

(End of clause)

#### **G.8 IDENTIFICATION OF EMPLOYEES (JSC 52.242-92) (MAR 2002)**

**At all times while on Government property, the contractor, subcontractors, their employees and agents shall wear badges which will be issued by the NASA Badging**

**& Visitor Control Office, located in Building 110 at the Johnson Space Center (JSC), or at the Main Gate at the White Sands Test Facility (WSTF). JSC employee badges will be issued only between the hours of 7:30 a.m. to 4 p.m., Monday through Thursday, and 7:30 am to 12:00 pm on Friday. JSC visitor badges will be issued between the hours of 6 a.m. to 10 p.m., 7 days a week. WSTF employee badges will be issued only between the hours of 8 a.m. to 2 p.m., Monday through Friday. WSTF visitor badges will be issued on a 7-day a week, 24-hour a day basis. Resident aliens and foreign nationals/representatives shall be issued green foreign national badges .**

Each individual who wears a badge shall be required to sign personally for the badge. The contractor shall be held accountable for issued badges and all other related items and must assure that they are returned to the NASA Badging & Visitor Control Offices upon completion of work under the contract in accordance with Security Management Directive (SMD) 500-15, "Security Termination Procedures." Failure to comply with the NASA contractor termination procedures upon completion of the work (e.g., return of badges, decals, keys, CAA cards, clearance terminations, JSC Public Key Infrastructure (PKI)/special program deletions, etc.) may result in final payment being delayed.

(End of clause)

**G.9 INSTALLATION-ACCOUNTABLE GOVERNMENT PROPERTY  
(NASA 1852.245-71) (JUNE 1998) (ALTERNATE I) (MAR 1989)**

(a) The Government property described in the clause at G.10 (1852.245-77, List of Installation - Accountable Property and Services, shall be made available to the Contractor on a no-charge basis for use in performance of this contract. This property shall be utilized only within the physical confines of the NASA installation that provided the property. Under this clause, the Government retains accountability for, and title to, the property; and the Contractor assumes the following user responsibilities:

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

- (i) The contractor's purchase order shall require the vendor to deliver the property to the installation central receiving area.
- (ii) The contractor shall furnish a copy of each purchase order, prior to delivery by the vendor, to the installation central receiving area.
- (iii) The contractor shall establish a record of the property, as required by FAR 45.5 and 1845.5, and furnish to the Industrial Property Officer a DD Form 1149

Requisition and Invoice/Shipping Document (or installation equivalent) to transfer accountability to the Government within 5 working days after receipt of the property by the contractor. The contractor is accountable for all contractor-acquired property until the property is transferred to the Government's accountability.

- (iv) Contractor use of Government property at an off-site location and off-site subcontractor use require advance approval of the contracting officer and notification of the SEMO. The contractor shall assume accountability and financial reporting responsibility for such property. The contractor shall establish records and property control procedures and maintain the property in accordance with the requirements of FAR Part 45.5 until its return to the installation.

(2) After transfer of accountability to the Government, the contractor shall continue to maintain such internal records as are necessary to execute the user responsibilities identified in Paragraph A and document the acquisition, billing, and disposition of the property. These records and supporting documentation shall be made available, upon request, to the SEMO and any other authorized representatives of the contracting officer.

(3) The contractor shall not utilize the installation's central receiving facility for receipt of Contractor-acquired property. However, the Contractor shall provide listings suitable for establishing accountable records of all such property received, on a quarterly basis, to the Contracting Officer and the SEMO.

**G.10 LIST OF INSTALLATION-ACCOUNTABLE PROPERTY AND SERVICES**

**(NASA 1852.245-77) (JULY 1997)**

In accordance with the clause 1852.245-71, Installation - Accountable Government Property the Contractor is authorized use of the types of property and services listed below, to the extent they are available, in the performance of this contract within the physical borders of the installation which may include buildings and space owned or directly leased by NASA in close proximity to the installation, if so designated by the Contracting Officer.

(a) Office space, work area space, and utilities. Government telephones are available for official purposes only; pay telephones are available for contractor employees for unofficial calls.

(b) General - including office furniture as exists at contract start.

(1) Equipment to be made available is listed in Attachment J-I, Appendix D. The Government retains accountability for this property under the clause at G.9

1852.245-71, Installation-Accountable Government Property, regardless of its authorized location.

(2) If the contractor acquires property, title to which vests in the Government pursuant to other provisions of this contract, this property also shall become accountable to the Government upon its entry into Government records as required by the clause at G.9 1852.245-71, Installation-Accountable Government Property.

(c) Safety and fire protection for Contractor personnel and facilities.

(d) Installation service facilities:

1. Audiovisual: Presentation services, sound services, Release Print Film Library, Film Repository, and loan of audiovisual equipment.

2. Automatic Data Processing (ADP) Services (onsite only): Generally, this includes access to large general-purpose computer systems, 225 workstations, and the accessing media; i.e., terminals, printers, data communications, and consultation and training in the use of said systems. Unless otherwise specified in the contract, this does not include providing computer systems or ADP services for the Contractor business management, accounting, and administrative functions as well as scanners for use with NASA-wide applications.

(End of clause)

**G.11 TRAVEL OUTSIDE OF THE UNITED STATES (NASA 1852.242-71)**  
**(DEC 1988)**

(a) The Contracting Officer must authorize in advance and in writing travel to locations outside of the United States by contractor employees that is to be charged as a cost to this contract. This approval may be granted when the travel is necessary to the efforts required under the contract and it is otherwise in the best interest of NASA.

(b) The contractor shall submit requests to the Contracting Officer at least 48 hours (2 working days) in advance of the start of the travel.

(c) The contractor shall submit a travel report at the conclusion of the travel. The Contracting Officer's approval of the travel will specify the required contents and distribution of the travel report.

(End of clause)

**G.12 GOVERNMENT FURNISHED SERVICES (KSC)**

The government will furnish the following services to the contractor at KSC on a no-charge-for-use basis to the extent reasonably necessary for the contractor to fulfill its contractual obligations:

- Calibration Services
- Conference Room (Mission Briefing Room in the Operations & Checkout Bldg, Training Auditorium) audio/video set up support
- Electrical Service
- Emergency Medical Services
- Fire Protection Service
- Food Services (cafeteria, snack bars, vending machines)
- Hazardous Waste Disposal
- Heating, Ventilating, and Air Conditioning (HVAC) (in non-technical areas)
- Janitorial Services (excludes operational work areas)
- **Kennedy Unified Dial-In Access (KUDA)**
- Library Services
- Locksmith Services
- Mail Services
- NASA Equipment Management System (NEMS)
- NASA Malfunction Laboratory
- Occupational Health Services
- On-site Film Laboratory and Processing Service (must be approved/funded by SSP or ISSP)
- On-Site Office Copier Machines and Services
- On-site Passenger Bus Service
- **On-site Work Space (See Section L.21)**
- Pesticide Control
- Portable Support Services, as required, during Facility System outages (i.e. Chillers, Boilers)
- Potable Water Sampling
- Primary Power Distribution
- Printing/Micro-imaging at Central KSC Print Shop
- **Security Services (badging, investigative and law enforcement tasks, perimeter control, payload escort, and O&M of electronic surveillance systems)**
- Standards Laboratory
- Water and Sewage
- Weather Data and Forecasting
- Weights for proof loading

(End of clause)

G.13 SECURITY CONTROLS AT KSC (KSC 52.204-90) (NOV 2000)

**A. Identification of Employees**

1) The contractor shall require each employee engaged on the work site to display NASA-furnished identification badges and special access badges at all times. The contractor shall obtain and submit badging request forms for each person employed or to be employed by the contractor under this contract. The contractor shall designate its own security and badging officials to act as points-of-contact for the KSC Security Office. Prior to proceeding with onsite performance, the contractor shall submit the following information to the Protective Services Branch, Code TA-E2, Kennedy Space Center:

- a. Contract number and location of work site(s)
- b. Contract commencement and completion dates
- c. Status as prime or subcontractor
- d. Names of designated security and badging officials

2) Identification and badging of employees shall be accomplished as soon as practicable after award of the contract. During performance of the contract, the contractor shall, upon termination of an employee, immediately deliver badges and/or passes issued to the employee to the NASA Security Office. It is agreed and understood that all NASA identification badges/passes remain the property of NASA, and the Government reserves the right to invalidate such badges/passes at any time.

#### **B. Access to Controlled Areas within KSC**

1) Certain areas within KSC have been designated as Controlled Areas. These are normally surrounded by fencing and have an entrance gate monitored by a guard or monitoring device. Access into such areas is classified into "escorted" or "unescorted" access. For each employee for which the contractor desires to have unescorted access, the prescribed forms must be submitted to the responsible NASA Center Security Office. Due to the time required to process requests for unescorted access, the contractor is advised to complete and submit the required forms as soon as practicable after contract award. Within 14 working days after the receipt of the forms, the responsible NASA Center Security Office will determine whether the person is eligible for unescorted access.

2) The prime contractor is responsible for providing escort services for any of his employees and/or any subcontractor employees who are not eligible for unescorted access.

3) All requests for unescorted access by subcontractors will be submitted through the prime contractor for forwarding to the NASA Security Office.

(End of clause)

#### **G.14 RIGHTS IN DATA-SPECIAL WORKS**

The following sections of the Statement of Work and DRDs are subject to FAR clause 52.227-17 Rights in Data-Special Works:

1. 1.5.1.1 Translation
2. 1.5.1.4 Logistics
3. 4.1.1.5.1 Crew Provisioning Management
4. DRD-II-04 Student Records

All other data delivered or maintained in the performance of this contract are subject to FAR clause 52.227-14 Rights in Data-General.

(End of clause)

**G.15 FINANCIAL REPORTING OF NASA PROPERTY IN THE CUSTODY OF CONTRACTORS (1852.245-73) (OCTOBER 2003)**

(a) The Contractor shall submit annually a NASA Form (NF) 1018, NASA Property in the Custody of Contractors, in accordance with the provisions of 1845.505-14, the instructions on the form, subpart 1845.71, and any supplemental instructions for the current reporting period issued by NASA.

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

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

(3) One copy shall be submitted (through the Department of Defense (DOD) Property Administrator if contract administration has been delegated to DOD) to the following address: 2101 NASA Parkway, JB3 Property & Equipment Branch, Houston, TX, 77058, unless the Contractor uses the NF 1018 Electronic Submission System (NESS) for report preparation and submission.

(c)(1) The annual reporting period shall be from October 1 of each year through September 30 of the following year. The report shall be submitted in time to be received by October 15. The information contained in these reports is entered into the NASA accounting system to reflect current asset values for agency financial statement purposes. Therefore, it is essential that required reports be received no later than October 15. Some activity may be estimated for the month of September, if necessary, to ensure the NF 1018 is received when due. However, contractor's procedures must document the process for developing these estimates based on planned activity such as planned purchases or NASA Form 533 (NF 533 Contractor Financial Management Report) cost estimates. It should be supported and documented by historical experience or other corroborating evidence, and be retained in accordance with FAR Subpart 4.7, Contractor Records Retention. Contractors shall validate the reasonableness of the estimates and associated methodology by comparing them to the actual activity once that data is available, and adjust them accordingly. In addition, differences between the estimated

cost and actual cost must be adjusted during the next reporting period. Contractors shall have formal policies and procedures, which address the validation of NF 1018 data, including data from subcontractors, and the identification and timely reporting of errors. The objective of this validation is to ensure that information reported is accurate and in compliance with the NASA FAR Supplement. If errors are discovered on NF 1018 after submission, the contractor shall contact the cognizant NASA Center Industrial Property Officer (IPO) within 30 days after discovery of the error to discuss corrective action.

(2) The Contracting Officer may, in NASA's interest, withhold payment until a reserve not exceeding \$25,000 or 5 percent of the amount of the contract, whichever is less, has been set aside, if the Contractor fails to submit annual NF 1018 reports in accordance with 1845.505-14 and any supplemental instructions for the current reporting period issued by NASA. Such reserve shall be withheld until the Contracting Officer has determined that NASA has received the required reports. The withholding of any amount or the subsequent payment thereof shall not be construed as a waiver of any Government right. (d) A final report shall be submitted within 30 days after disposition of all property subject to reporting when the contract performance period is complete in accordance with (b)(1) through (3) of this clause.

(End of clause)

#### **G.16 ADVANCED AGREEMENT ON PAYMENT OF TRANSITION COSTS**

The Contractor shall be entitled to payment for the transition period (starting 60 days before the contract start date) in the Firm-Fixed Price amount of **\$249,241** as identified in TABLE B.2-1, Total Contract Value, to be received in payments as identified by the offeror. The offeror shall propose a payment plan based on their Transition Plan approach that includes at least two payments but not more than five payments and does not exceed the above Firm-Fixed Price. The proposed payment milestones and measurable criteria will replace the following example that is one suggested approach. Payment will be made based on the Contracting Officer concurrence that each milestone has been accomplished:

##### **Milestone 1: Staffing**

**\$32,822**

The successful offeror has hired all personnel proposed as *key* personnel and all of these personnel are performing transition work at the level proposed; and at least 90% of all personnel proposed to perform all contract requirements have provided written acceptance of firm job offers.

##### **Milestone 2: ISS Applications Competency**

**\$18,740**

The successful offeror has operational competency with the following ISS Applications.

Reference: Attachment J-1, Appendix D, Table 1	Reference: Attachment J-1, Appendix I, Table 2
1. MIDAS	3. Crew Language Training Database
2. IDT	4. COSMOS
	5. IRMA
	6. CSD

**Milestone 3: Major Subcontracts**

**\$1,087**

The successful offeror has major subcontracts in place and ready to perform contract requirements.

**Milestone 4: Plans and Other Data Deliverables**

**\$170,456**

The successful offeror has completed and submitted the following plans and other Data Deliverables for NASA review and/or approval (per DRD):

- B-CM-01, Configuration Management Plan
- B-EC-02, Export Control Plan
- B-IT-02, IT Security Plan & Reports.
- B-PC-01, NF533 M/Q Cost Reporting
- B-PM-01, MI Program Management Plan
- B-PM-06, Certification of Flight Readiness (CoFR) Plan
- B-PR-02, Wage/Salary and Fringe Benefit

**Milestone 5: Accounting System**

**\$26,136**

The successful offeror has implemented an accounting system fully capable of accurately reporting projected and actual accrued cost and fee in accordance with DRD A-PC-01. This system must also enable the capability to submit proper invoices for payment of completed work.

(End of clause)

**G.17 INDIRECT COST CEILINGS**

Without otherwise affecting the applicability of the cost principles set forth in Part 31 of the Federal Acquisition Regulation, which are a part of this contract pursuant to the clause entitled "Allowable Cost and Payment," the following agreements are made as to contract ceilings and cost categorization:

**Provisional and Ceiling Cost Rates**

General and Administrative (G&A) Expense are subject to the provisional and ceiling rates set forth below. To prevent substantial over or under payment (except where ceiling is reached), the provisional billing rates may, at the discretion of the contracting officer, be revised, either upward or downward, and such revision shall be set forth in an amendment to this contract.

Costs attributable to a rate increment in excess of the established ceiling rates (shown above) shall be unallowable unless caused by a) compliance with new state or Federal legal requirements or b) depreciation of capital investment when that investment has contributed directly and substantial to increased productivity.

By way of example and not limitation, changes such as base or rate changes over time to specific items within an existing legal requirement such as Federal Insurance Compensation Act (FICA), Federal Unemployment Insurance (FUI) and State Unemployment Insurance (SUI) are not considered a "new legal requirement." If the contractor incurs costs in excess of the ceiling rates as a result of a) or b) above, and wishes to obtain reimbursement, they shall submit a proposal that sets forth, fully and completely, the facts and circumstances believed to be responsible for the incurrence of costs above the ceiling(s).

An equitable adjustment will be made in the contract ceiling(s) only if, and to the extent, that the contractor's proposal demonstrates that the costs incurred in excess of the ceilings were attributable to the circumstances described in a) or b). The contractor's rationale must demonstrate that the costs incurred in excess of the ceilings were not reasonably susceptible to being offset by reasonable and prudent reductions in indirect costs in other areas within the contractor's control. Any unallowable costs shall not be recovered under this or any other Government contract.

The base of application for computing the G&A rates (both provisional and ceiling) shall be total cost.

The G&A cost pool is comprised of the following cost elements: executive management, corporate business development, and corporate financial and administrative functions. In addition to salaries, fringe benefits and corporate overhead allocation, the other costs

included in this pool are other direct costs in support of indirect personnel, franchise taxes, bank charges, corporate insurance, facilities, and professional fees.

(End of clause)

**G. 18 PERSONAL IDENTITY VERIFICATION OF CONTRACTOR PERSONNEL (FAR 52.204-9) (Jan 2006)**

(a) The Contractor shall comply with agency personal identity verification procedures identified in the contract that implement Homeland Security Presidential Directive-12 (HSPD-12), Office of Management and Budget (OMB) guidance M-05-24, and Federal Information Processing Standards Publication (FIPS PUB) Number 201.

(b) The Contractor shall insert this clause in all subcontracts when the subcontractor is required to have physical access to a federally-controlled facility or access to a Federal information system.

(End of clause)

**G.19 PIV CARD ISSUANCE PROCEDURES**

In accordance with G. 18 Personal Identity Verification of Contractor Personnel (FAR 52.204-9) (Jan 2006):

FIPS 201 Appendix A graphically displays the following procedure for the issuance of a PIV credential.

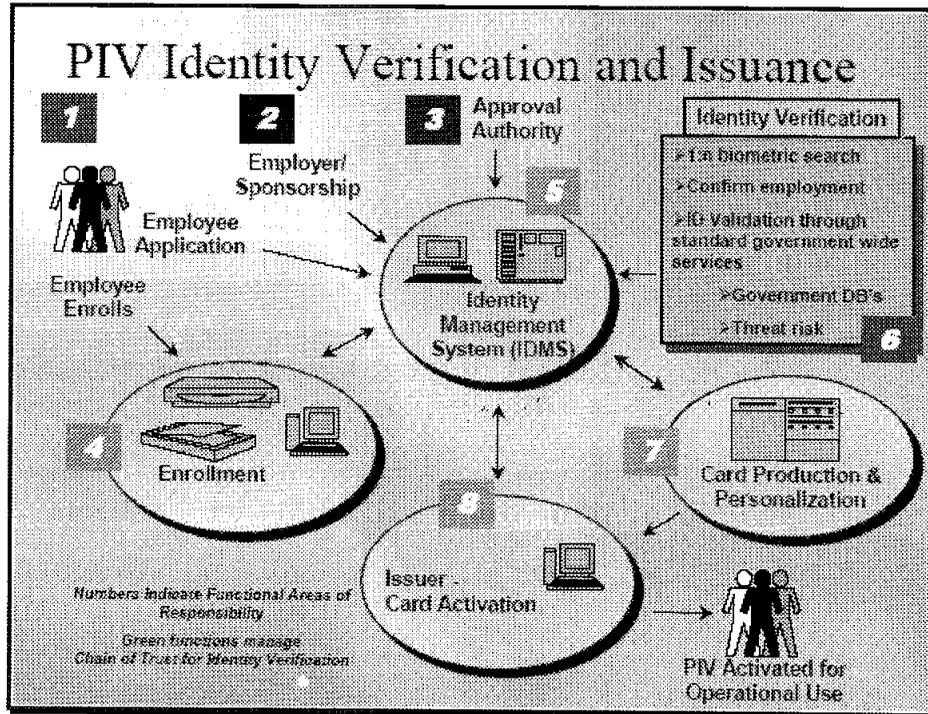


Figure A-1, FIPS 201, Appendix A

The following steps describe the procedures for the NASA Personal Identity Verification Card Issuance (PCI) of a PIV credential:

**Step 1:**

The Contractor's Corporate Security Officer (CSO), Program Manager (PM), or Facility Security Officer (FSO) submits a formal letter that provides a list of contract employees (applicant) names requesting access to the NASA Contracting Officer's Technical Representative (COTR). In the case of a foreign national applicant, approval through the NASA Foreign National Management System (NFMMS) must be obtained for the visit or assignment before any processing for a PIV credential can take place. Further, if the foreign national is not under a contract where a COTR has been officially designated, the foreign national will provide the information directly to their visit/assignment host, and the host sponsor will fulfill the duties of the COTR mentioned herein. In each case, the letter shall provide notification of the contract or foreign national employee's (hereafter the "applicant") full name (first, middle and last), social security number (SSN) or NASA Foreign National Management System Visitor Number if the foreign national does not have a SSN, and date of birth. If the contract employee has a current satisfactorily completed National Agency Check with Inquiries (NACI) or an equivalent or higher degree of background investigation, the letter shall indicate the type of investigation, the agency completing the investigation, and date the investigation was completed. Also, the letter must specify the risk/sensitivity level associated with the position in which each applicant will be working (NPR 1600.1, §4.5 is germane) Further, the letter shall also

acknowledge that contract employees may be denied access to NASA information or information systems based on an unsatisfactory background investigation/adjudication. .

After reviewing the letter for completeness and concurring with the risk/sensitivity levels, the COTR/host must forward the letter to the Center Chief of Security (CCS). The CCS shall review the OPM databases (e.g., DCII, PIP, et al.), and take appropriate steps to validate the applicant's investigation status. Requirements for a NACI or other investigation shall be initiated only if necessary.

Applicants who do not currently possess the required level of background investigation shall be directed to the e-QIP web site to complete the necessary background investigation forms online. The CCS shall provide to the COTR/host information and instructions on how to access the e-QIP for each contract or foreign national employee requiring access

**Step 2:**

Upon acceptance of the letter/background information, the applicant will be advised that in order to complete the investigative process, he or she must appear in-person before the authorized PIV registrar and submit two forms of identity source documents in original form. The identity source documents must come from the list of acceptable documents included in Form I-9, Employment Eligibility Verification, one which must be a Federal<sup>1</sup> or State issued picture identification. Fingerprints will be taken at this time. The applicant must appear **no later than** the entry on duty date.

When the applicant appears, the registrar will electronically scan the submitted documents; any document that appears invalid will be rejected by the registrar. The registrar will capture electronically both a facial image and fingerprints of the applicant. The information submitted by the applicant will be used to create or update the applicant identity record in the Identity Management System (IDMS).

**Step 3:**

Upon the applicant's completion of the investigative document, the CCS reviews the information, and resolves discrepancies with the applicant as necessary. When the applicant has appeared in person and completed fingerprints, the package is electronically submitted to initiate the NACI. The CCS includes a request for feedback on the NAC portion of the NACI at the time the request is submitted.

**Step 4:**

Prior to authorizing physical access of a contractor employee to a federally-controlled facility or access to a Federal information system, the CCS will ensure that a check has been performed with the National Crime Information Center (NCIC) and Interstate Identification Index. In the case of a foreign national, a national check of the Bureau of

---

<sup>1</sup> A non-PIV government identification badge, including the NASA Photo Identification Badge, **MAY NOT BE USED** for the original issuance of a PIV vetted credential

Immigration and Customs Enforcement (BICE) database will be performed for each applicant. If this process yields negative information, the CCS will immediately notify the COTR/host of the determination regarding access made by the CCS.

**Step 5:**

Upon receipt of the completed NAC, the CCS will update IDMS from the NAC portion of the NACI and indicate the result of the suitability determination. If an unsatisfactory suitability determination is rendered, the COTR will advise the contractor that the employee is being denied physical access to all federally-controlled facilities and Federal information systems.

Based on a favorable NAC and NCIC/III or BICE check, the CCS will authorize the issuance of a PIV federal credential in the Physical Access Control System (PACS) database. The CCS, based on information provided by the COTR/host, will determine what physical access the applicant should be granted once the PIV issues the credential.

**Step 6:**

Using the information provided by the applicant during his or her in-person appearance, the PIV card production facility creates and instantiates the approved PIV card for the applicant with an activation date commensurate with the applicant's start date.

**Step 7:**

The applicant proceeds to the credential issuance facility to begin processing for receipt of his/her federal credential.

The applicant provides to the credential issuing operator proof of identity with documentation that meets the requirements of FIPS 201 (DHS Employment Eligibility Verification (Form I-9) documents. These documents **must** be the same documents submitted for registration.

The credential issuing operator will verify that the facial image, and optionally reference finger print, matches the enrollment data used to produce the card. Upon verification of identity, the operator will locate the employee's record in the PACS database, and modify the record to indicate the PIV card has been issued. The applicant will select a PIN for use with his or her new PIV card. Although root data is inaccessible to the operator, certain fields (hair color, eye color, et al.) may be modified to more accurately record the employee's information.

The applicant proceeds to a kiosk or other workstation to complete activation of the PIV card using the initial PIN entered at card issuance.

**ALTERNATIVE FOR APPLICANTS WHO DO NOT HAVE A COMPLETED  
AND ADJUDICATED NAC AT THE TIME OF ENTRANCE ON DUTY**

Steps 1 through 4 shall be accomplished for all applicants in accordance with the process described above. If the applicant is unable to appear in person until the time of entry on duty, or does not, for any other reason, have a completed and adjudicated NAC portion of the NACI at the time of entrance on duty, the following interim procedures shall apply.

1. If the documents required to submit the NACI have not been completed prior to EOD, the applicant will be instructed to complete all remaining requirements for submission of the investigation request. This includes presentation of I-9 documents and completion of fingerprints, if not already accomplished. If the applicant fails to complete these activities as prescribed in NPR 1600.1 (Chapters 3 & 4), it may be considered as failure to meet the conditions required for physical access to a federally-controlled facility or access to a Federal information system, and result in denial of such access.
2. Based on favorable results of the NCIC, the applicant shall be issued a temporary NASA identification card for a period not-to-exceed six months. If at the end of the six month period the NAC results have not been returned, the agency will at that time make a determination if an additional extension will be granted for the temporary identification card.

Upon return of the completed NAC, the process will continue from Step 5.

(End of clause)

[END OF SECTION]

**SECTION H****SPECIAL CONTRACT REQUIREMENTS****H.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE**

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

**I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)**

CLAUSE NUMBER	DATE	TITLE
None	None	None

**II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES**

CLAUSE NUMBER	DATE	TITLE
1852.204-74	OCT 2001	CENTRAL CONTRACTOR
REGISTRATION 1852.208-81	OCT 2001	RESTRICTIONS ON PRINTING AND DUPLICATING
1852.223-70	APR 2002	SAFETY AND HEALTH
1852.223-73	APR 2002	SAFETY AND HEALTH PLAN
1852.223-75	FEB 2002	MAJOR BREACH OF SAFETY OR
SECURITY 1852.225-70	FEB 2000	EXPORT LICENSES AND ALTERNATE  (FEB 2000) AND PARA (B) INSERT "JOHNSON SPACE CENTER AND KENNEDY SPACE CENTER"
1852.228-76	DEC 1994	CROSS-WAIVER OF LIABILITY FOR
SPACE		STATION ACTIVITIES
1852.242-72	AUG 1992	OBSERVANCE OF LEGAL HOLIDAYS ALTERNATE II (OCT 2000)
1852.244-70	APR 1985	GEOGRAPHIC PARTICIPATION IN THE AEROSPACE PROGRAM

(End Of Clause)

---

**H.2 REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS  
OF  
OFFERORS (JSC 52.209-90) (SEP 1988)**

This contract incorporates Section K, Representations, Certifications, and Other Statements of Offerors, as set forth in the contractor's proposal in response to RFP #9-BG-79-2-78P dated September 8, 2003, by reference, with the same force and effect as if it were given in full text.

(End of clause)

**H.3 KEY PERSONNEL AND FACILITIES (NASA 1852.235-71) (MARCH 1989)**

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

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

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

List here the personnel and/or facilities considered essential:

(End of clause)

**H.4 HANDLING OF DATA**

It is anticipated that in the performance of this contract, the contractor may have access to and use NASA's sensitive financial, management, and technical data. The contractor agrees that it will not use, copy, or disclose this data, except as necessary for the performance of this contract and will not disclose this data to others without the written consent of the contracting officer or the contracting officer's authorized representative.

---

(End of clause)

#### **H.5 LEVEL-OF-EFFORT (COST) (NASA 1852.216-85) (DEC 1991)**

NOTE: This clause only applies to work described in Table J-1 of Attachment J-1, Statement of Work identified as LOE.

(a) During the term of the contract, the contractor is obligated to provide not less than 95 percent nor more than 105 percent of the following direct labor hours:

Total Direct Labor Hours: 606,322

(b) "Direct labor hours" are those productive hours expended by contractor personnel performing work under this contract that are charged as direct labor under the contractor's established accounting policy and procedures. The term does not include sick leave, vacation leave, or any type of administrative leave but does include direct labor hours provided under level-of-effort subcontracts.

(c) Once the maximum number of direct labor hours is reached or the contract term has ended, the contractor's requirements under the contract are fulfilled, even though the specified work may not have been completed. The contractor is not authorized to exceed the maximum of the direct labor hours specified in paragraph (a) unless a bilateral contract modification is executed. Any estimated cost and fee(s) adjustments for any additional direct labor hours shall be based solely upon the quantity of additional hours being added to the maximum number of direct labor hours specified in this clause.

(d) The fee, if any, is based upon the furnishing of at least the specified minimum number of direct labor hours, including subcontract hours. If the contractor provides less than that specified minimum number of hours prior to expiration of the contract term, and the Government has not invoked its rights under the Termination clause of this contract to adjust the contract for such reduced effort, the Contracting Officer may unilaterally make an equitable downward adjustment to the contract fee. The downward adjustment in fee will be based upon the difference between the minimum direct labor hours specified under this clause and the amount of direct labor hours provided by the contractor. Prior to making such an adjustment, the Contracting Officer will request the contractor provide a written discussion of any extenuating circumstances (e.g., productivity improvements or reductions in contract scope) which contributed to the underrun. Any information provided by the contractor will be considered by the Contracting Officer in determining the amount of the downward adjustment in fee.

(End of clause)

#### **H.6 (LIMITED) RELEASE OF CONTRACTOR CONFIDENTIAL BUSINESS INFORMATION (CBI) (JSC 52.227-91) (MAY 2002)**

(a) NASA may find it necessary to release information submitted by the contractor pursuant to the provisions of this contract, to individuals not

employed by NASA. Business information that would ordinarily be entitled to confidential treatment may be included in the information released to these individuals. Accordingly, by signature on this contract, the contractor hereby consents to a limited release of its Confidential Business Information (CBI).

(b) Possible circumstances where the Agency may release the contractor's CBI include the following:

(1) To other Agency contractors and subcontractors, and their employees tasked with assisting the Agency in handling and processing information and documents in the administration of Agency contracts, such as providing post-award audit support and specialized technical support to NASA.

(2) To NASA contractors and subcontractors, and their employees engaged in information systems analysis, development, operation, and maintenance, including performing data processing and management functions for the Agency.

(c) NASA recognizes its obligation to protect the contractor from competitive harm that could result from the release of such information to a competitor. Except where otherwise provided by law, NASA will permit the limited release of CBI under subparagraphs (1) or (2) only pursuant to non-disclosure agreements signed by the assisting contractor or subcontractor, and their individual employees who may require access to the CBI to perform the assisting contract.

(d) NASA's responsibilities under the Freedom of Information Act are not affected by this clause.

(e) The contractor agrees to include this clause, including this paragraph (e), in all subcontracts at all levels awarded pursuant to this contract that require the furnishing of CBI by the subcontractor.

(End of clause)

#### **H.7 ISS CONTRACT STRATEGY CONFLICT OF INTEREST AGREEMENT**

(a) An organizational conflict of interest exists for this contract as it relates to the contracts awarded as part of the overall ISS Contract Strategy in that the contractor may be in a position to favor its own products or capabilities. Two of the six contracts to be awarded will be responsible for support to ISS Program Management. These two contracts are the Program Integration and Control contract and the ISS Mission Integration contract. The other four contracts to be awarded will be responsible for the overall implementation of these Program requirements. These four contracts are Cargo Mission, ISS Payload Integration/Payload Mission, USOS Acceptance and Sustaining. The intent of this clause is to prohibit a contractor from developing Program requirements in one of the aforementioned two contracts designed for "Support to ISS

NNJ04AA02C  
(SECTION H)

Mission Integration Contract

61 of 304  
Modification 93

Program Management” and also implementing those requirements in one of the additional four contracts responsible for “ISS Program Implementation.” Therefore, the contractor, by signing this contract, fully understands, agrees, and will comply with the following conditions:

- (1) The contractor will not perform work as a prime for the following contracts: Cargo Mission, ISS Payload Integration/Payload Mission, and USOS Acceptance and ISS Vehicle Sustaining.
  - (2) The contractor will perform no more than 49% (total contract costs) of the work as a subcontractor under any of the contracts mentioned above in number 1.
  - (3) The contractor shall not, and will not, make the day-to-day program management decisions under any of the contracts set forth in number 1.
- (b) If by the performance of this contract, or by any other means, the contractor believes they may violate any of these conditions above, the contractor shall notify the contracting officer in writing immediately.

(End of clause)

**H.8 ASSOCIATE CONTRACTOR AGREEMENT FOR ISS OPERATIONS AND UTILIZATION ACTIVITIES**

(a) The success of the International Space Station (ISS) Program is dependent on the efforts of multiple contractors. The MIC contractor is a key participant. The other contracts of the key participating contractors are:

NNJ04AA01C	Program Integration and Control Contract (PI&C)
NNJ04AA03C	Cargo Mission Contract
NAS9-02099	Payload Integration Contract
NAS15-10000	USOS Acceptance and ISS Vehicle Sustaining Contract
NAS9-20000	Space Flight Operations Contract (SFOC)
NAS10-02007 (CAPPS)	Checkout, Assembly, and Payload Processing Services

Under the aforementioned contracts the contractors will provide the necessary technical, engineering and processing products and services required to develop, operate, maintain and utilize the International Space Station.

(b) In order to achieve efficient and effective implementation of the operation and utilization phase of the ISS, the contractor shall establish the means for coordination and exchange of information with associate contractors. The information to be exchanged shall be that required by the contractors in the execution of their respective contract requirements. The contractors are strongly encouraged to seek out and foster cooperative efforts that will benefit the ISS Program with increased safety, efficiency, and productivity.

---

(c) Given the unique role of this contract in developing, operating, maintaining and utilizing the ISS, the contractor will engage in cooperative relationships that facilitate effective management of the overall ISS effort. This joint cooperation will be evaluated as part of the contract award fee process, as defined in the Award Fee Plan for the contract. Successful performance will be determined by the Government's assessment of the overall and combined performance of the operation and utilization requirements in the contracts, as modified. This clause will be effective during the award fee period starting November 01, 2003.

(d) To ensure successful implementation and utilization of the ISS, the contractors shall establish formal guidelines to address coordination, cooperation and communication. All program elements shall work in a coordinated fashion. Each contractor shall establish the means for the exchange of such data as needed to keep other project elements fully informed.

(End of clause)

---

**H.9 DATA RIGHTS NOTICE**

(a) Any proposal submitted during the course of contract performance must expressly identify any computer software or technical data that is to be provided with less than unlimited data rights. The contractor shall notify the contracting officer in writing prior to incorporating any item, component, subcomponent, process, or software, wherein the related technical data or computer software qualifies as limited rights data or restricted computer software in accordance with Alternate II and III of FAR 52.227-14 and NFS 1852.227-86. This notification does not apply to commercial off-the-shelf (shrink-wrapped) computer software, and corresponding documentation, that has a standard commercial license unless the software is to be incorporated as a subcomponent in a developmental effort.

(b) Technical data and computer software delivered shall not be marked with restrictive legends unless the Contracting Officer has given prior written consent.

(c) All license agreements shall be compliant with Federal laws, regulations and the terms and conditions of this contract and shall be transferable to the government upon completion of the contract without additional cost to the Government. One copy of the final negotiated license agreement shall be forwarded to the contracting officer within 30 days of agreement to ensure compliance.

(End of clause)

**H.10 RESTRICTED RIGHTS NOTICE**

(a) Alternate III of FAR 52.227-14, Rights in Data – General.

(1) Paragraph (b)(1) of Alternate III of FAR 52.227-14, Rights in Data – General, is hereby deleted and the following paragraph (b)(1) is substituted in lieu thereof:

(b)(1) Used or copied for use in or with multiple computers provided they are not used simultaneously, including use at any government installation to which such computers may be transferred.

(2) The following is added as paragraph (b)(7) of Alternate III of FAR 52.227-14:

(b)(7) Used on multiple computers for network applications.

(b) NASA FAR Supplement (NFS) 1852.227-86, Commercial Computer Software – Licensing.

(1) Paragraph (d)(2)(i) of NFS 1852.227-86, is hereby deleted and the following paragraph (d)(2)(i) is substituted in lieu thereof:

(d)(2)(i) Used or copied for use in or with multiple computers provided they are not used simultaneously, including use at any government installation to which such computers may be transferred.

(2) The following is added as paragraph (d)(2)(v) of NFS 1852.227-86:

(d)(2)(v) Used on multiple computers for network applications.

(End of clause)

**H.11 LIMITED RIGHTS DATA NOTICE**

(a) Notwithstanding any other terms and conditions of this contract, the Government shall have the right to disclose technical data marked as limited rights data outside of the Government, without obtaining permission from the contractor, under the following circumstances:

(1) Use (except for manufacture) by support service contractors.

(2) Evaluation by non-government evaluators.

(3) Use (except for manufacture) by other contractors participating in the Government's program of which the specific contract is a part, for information and use in connection with the work performed under each contract.

(4) Emergency repair or overhaul work.

(5) Release to a foreign government, or instrumentality thereof, as the interests of the United States Government may require, for information or evaluation, or emergency repair or overhaul work by such government.

(b) Prior to disclosure, except in emergency circumstances as identified in paragraphs 4 and 5 above, the Government shall require the recipient to sign an agreement, provided by and acceptable to the contractor, to protect the data from unauthorized use and disclosure. The contractor shall provide a copy of the acceptable nondisclosure agreement to the contracting officer no later than 30 days after contract award.

(End of clause)

**H.12 MANAGEMENT AND PROTECTION OF DATA OF THIRD PARTIES**

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

- 
- (1) Data of third parties bearing limited rights or restricted rights notices submitted either to NASA or directly to the contractor: or
- (2) Other data of third parties, which NASA has agreed to handle under protective arrangements;
- (b) In order to protect the interests of the government and the interests of other owners of such data, the contractor agrees with respect to data in category 1 above, and with respect to any data in category 2 when so identified by the Contracting Officer, to:
- (1) Use and disclose such data only to the extent necessary to perform the work required under this contract, with particular emphasis on restricting the data to employees having a "need to know";
- (2) Preclude disclosure of such data outside contractor's organization performing work under this contract without written consent of the Contracting Officer. The contractor's organization includes support contractors to the extent they are subject to the same requirements regarding protection of 3<sup>rd</sup> party data; and
- (3) Return or dispose of such data as directed by the Contracting Officer or the furnishing third party owner when such data is no longer needed for contract performance.

(End of clause)

### **H.13 INFORMATION INCIDENTAL TO CONTRACT ADMINISTRATION**

- (a) With the exception of financial information, the Government shall have unlimited rights to use and distribute to third parties any administrative or management information developed by the contractor or a subcontractor at any tier in whole or in part for the performance of the contract or first produced in the performance of the contract, whether or not said information is specified as a contract deliverable, if created in whole or in part at Government expense. The contracting officer may, at any time during the contract performance or within a period 3 years after acceptance of all items to be delivered under this contract, order any administrative or management information developed by the contractor or a subcontractor at any tier in whole or in part for the performance of the contract or first produced in the performance of the contract.
- (b) The contracting officer may release the contractor from the requirements of this clause for specifically identified information at any time during the 3-year period set forth in paragraph A of this clause.

(End of clause)

### **H.14 ACCESS TO CONTRACTOR DATA**

(a) "Data" for purposes of this clause, means recorded information, regardless of the form or media on which it may be recorded. The term includes technical data; computer software; and information incidental to contract administration, such as financial, administrative, cost or pricing, or management information. Types of data contained in the definition also include contractor internal audits of any discipline, system, or task which directly or indirectly supports the performance of this contract as well as data from any audit of subcontractor(s) performing this contract. These examples are illustrative and are not to be construed as a limitation on the definition of data.

(b) The contracting officer or designee shall, through closeout, have access to and the right to examine any of the data produced or specifically used in the performance of this contract. The purpose of this access provision is to permit the Government to monitor the contractor's performance under this contract and to permit sampling of contractor data to verify requirements compliance and continuous improvement without unduly increasing the number of data deliverables to this contract.

(c) The contractor shall make available at all reasonable times for Government inspection all existing Government data provided to the contractor and any data first produced or used in the performance of this contract for examination through closeout. Moreover, information provided by the contractor on this system shall contain all necessary technical and business application data to determine the degree to which contract requirements are met. At a minimum, the contractor shall maintain an index of data that is available on request. The index is a medium for identifying contract internal data which has been generated by the contractor in compliance with the work effort described in the SOW and other requirements.

(d) Except for software systems being provided as part of this contract, the contractor shall maintain all data on a commercially available system for information management that is easily accessible by NASA. For the purposes of this clause, "commercially available system" is defined as a system comprised of a Commercial Off-the-Shelf (COTS) database management system with its associated reporting/query tools, and a COTS text and graphics viewer software package. The contractor must obtain the approval of the Contracting Officer prior to using any noncommercial system for information management of data generated under this contract. As part of this request, the contractor must justify why no commercial system to manage information is adequate for this contract. If use of a noncommercial system is approved, then the contractor shall demonstrate the system to the Government and provide thorough training to Government personnel to ensure they are able to access (i.e., read and copy) all data maintained on the system.

(e) The contractor shall provide the Government unimpeded access to all areas determined by Government representatives as necessary for surveillance, audit and independent evaluation purposes. In those instances that access is restricted due to

hazards or other personnel access limitations, the contractor shall accommodate Government personnel such that access is provided and operational safety is not compromised.

(f) Notwithstanding the *Additional Data Requirements* clause, the Government shall have the right to reproduce any data found during the examination that it wishes to retain. The Government will reimburse reproduction costs only when it uses contractor equipment for the reproduction. The Government shall retain no greater rights in the reproduced data than it would have under the *Rights in Data--General* clause.

(g) The contractor shall describe the areas of its internal systems where NASA access will be permitted, define access and interface requirements, and provide NASA the required training to be able to access and use these systems.

(h) The contractor shall flow this clause to all cost type subcontracts.

(End of clause)

#### **H.15 ADDITIONAL EXPORT CONTROL REQUIREMENTS**

In addition to the requirements set forth in NFS 1852.225-70 EXPORT LICENSES, the contractor shall perform the following tasks when they facilitate exports of NASA hardware, software or technical data according to the Export Administration Regulations, International Traffic in Arms Regulations or any other U.S. export control regulations (e.g. Nuclear Regulatory Commission, Drug Enforcement Agency etc.) pursuant to this contract:

1. Provide to the Johnson Space Center (JSC) Export Services Team (EST), in writing, an "Advanced Notification of Export" (ANE) for all program related exports (hardware, software and technical data) where NASA is considered the "U.S. Principal Party in Interest" (USPPI)". The requirements below shall be met by the contractor and its subcontractors, respectively, when accomplishing the following activities:
  - a. Submitting requests for NASA to apply for an export license with the Department of Commerce or Department of State for use under the contract activity in support of the International Space Station Program.
  - b. Submitting notice of the contractor's intent to use Department of Commerce or Department of State export licenses obtained by NASA as they apply to the contract activity in support of the International Space Station Program.
  - c. Submitting notice of the contractor's intent to use any export license exceptions or exemptions as they apply to the contract activity in support of the International Space Station Program.

2. For all program related exports (hardware, software or technical data), submit the equivalent information described below to the Center Export Administrator (CEA) at the geographically closest NASA Space Flight Center (JSC, Marshall Space Flight Center (MSFC) or Kennedy Space Center (KSC)) according to the policies and procedures of that center (check with the cognizant Contracting Officer or CEA). A courtesy copy of equivalent information submitted to MSFC or KSC shall be provided to the JSC CEA's office. Provide copies of shipping documents for shipments made under a NASA Export License, exemption or exception to the appropriate CEA within two weeks after the shipment.
- a. The contractor shall submit requests for NASA to apply for a license at least 7 months prior to the need date to export. Note that the agencies which approve the licenses can take up to 6 months or more to process them.
  - b. The contractor shall submit an ANE in a formal letter, fax or e-mail (e-mail is preferred), containing the information described below (as applicable), addressed to the CEA's Office in accordance with the submission schedule below. The schedule provides a minimum amount of time required to process the information, however license requests may take longer than 6 months to process by the controlling agency.

<b>Required Information</b>	<b>License Application</b>	<b>Use of License</b>	<b>Use Exemption/Exception</b>
<b>Submission Schedule</b>	7 months prior to need date	At least 30 days prior to planned export date	At least 30 days prior to planned export date
Description of Commodity (as it appears on the license)	X	X	X
Specific End Use	X		X
1) NASA license number (include date of expiration), International Traffic in Arms Regulation (ITAR) license exemption (e.g. 125.4(b)(3)) or Export Administration Regulation (EAR) exception (e.g. GOV, RPL, TMP, ENC, etc.). *		X	X

2) Quantity and description as it appears on the applicable license.	X	X	X
3) Date of planned export	X	X	X
4) Origin of export (Company and city).	X	X	X
5) Intermediate and Ultimate Consignees, End User (full name and address), and Destination of export (Country, city and company).	X		
6) Point of contact with current phone number and e-mail address (for technical questions – must be a representative of the contractor originating the export).	X	X	X
7) Contractor Point of contact, current e-mail address and phone number for CEA's use to send response	X	X	X
8) Export Classification Control Number (ECCN) under the Export Administration Regulations or category under the United States Munitions List regulations	X		X
9) The technical rationale used to support the classification	X		X
10) Requirement to export (i.e., MOU, contract number, meeting minutes). Upon request by the CEA or CO, the contractor shall provide a	X		X

copy of the requirement within 3 working days			
11) Additional information as necessary to clarify the export	X	X	X
12) A copy of the completed Pro Forma Invoice (JSC Form 1735) or equivalent form/ document attached to an email if prepared for the export	X	X	X
13) A copy of the completed electronically signed JSC Form 1724 (Export Control Request and Approval Worksheet) or equivalent form	X Signed by Civil Servant - Export Rep	X Copy of Signed form	X Signed by Civil Servant - Export Rep
NASA Point of Contact	X		X
Specific End Use	X	X	X

- \* Additional information is required for these exceptions.
  - i. If using RPL, provide the license number, or copy of records confirming export authorization for the item being replaced.
  - ii. If using ENC, provide reference to the manufacturer's record verifying eligibility for ENC (e.g. full internet address (URL), e-mail from manufacturer or copy of Commerce Department communication to manufacturer.
  - iii. If using TMP, provide the expected return date.) \*\*
  
- c. After all the information is submitted, the cognizant CEA's office will respond to the contractor or its subcontractor with a status within ten (10) working days. It is the CEA's goal to provide a notice of approval or other disposition within 10 working days for "Use of License" and "Use of Exemption/Exception" to the contractor or its subcontractors who are exporting on behalf of NASA. Once approved, NASA will provide the destination control statement to use on all export documentation via e-mail or hardcopy letter.
  
- 3. In addition to other applicable export exemptions, the contractor or its subcontractors are authorized to export hardware, software or data to ISS International Partner (IP) governmental offices that meet the conditions of license exception GOV (15 CFR 740.11(b)(2)(iii)(A)).

NNJ04AA02C  
(SECTION H)

Mission Integration Contract

71 of 304  
Modification 93

4. \*\* For temporary exports (TMP), the contractor or its subcontractors shipping on behalf of NASA shall submit written notice to the CEA and CO within five (5) business days of the date that the item was actually returned, along with the incoming documentation.
5. The contractor or its subcontractors shall keep those records required by Department of Commerce and Department of State regulations for all exports and make them available upon request to NASA and its representatives.
6. These requirements do not apply to contractor or subcontractor commercial contract related exports or exports pursuant to Technical Assistance Agreements or other license authorizations received by the contractor or its subcontractors and for which the contractor or its subcontractors will be the USPPI and/or "exporter of record".
7. These requirements do not apply to exports for which there is "No License Required" (e.g. EAR99, 9A004 to Canadian International Partners on ISS, etc.)
8. The contractor and its subcontractors shall report to the NASA JSC EST, in writing, any potential export issues (including those related to support of sustaining engineering and operations of ISS) that cannot be resolved by the contractor or its subcontractors, respectively. Such report and/or notification of issues and technical tasks should be reported to the NASA JSC EST at least three (3) months in advance of requested action.
9. Upon discovery of unforeseen adverse export issues, the contractor shall immediately notify NASA JSC EST by telephone with a follow up e-mail or hardcopy letter of said issue and shall report to the NASA JSC EST, in writing, as the facts become known.
10. This clause applies when the contractor or its subcontractors elect to export NASA owned Government Furnished Equipment and Property (GFE, GFP) (including data, software or hardware). In such instances, the contractor or its subcontractors are the USPPI. They shall provide verifiable evidence that a valid export license, exemption or exception has been processed and approved (as applicable). They shall also provide this information for additional property that is not GFE or GFP that the contractor or its subcontractors elect to include with the GFE and GFP.

(End of Clause)

**H.16 TASK ORDERING PROCEDURE (NASA 1852.216-80) (OCT 1996)**

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

- 
- (b) Prior to issuing a task order, the contracting officer shall provide the contractor with the following data:
- (1) A functional description of the work identifying the objectives or results desired from the contemplated task order.
  - (2) Proposed performance standards to be used as criteria for determining whether the work requirements have been met.
  - (3) A request for a task plan from the contractor to include the technical approach, period of performance, appropriate cost information, and any other information required to determine the reasonableness of the contractor's proposal.
- (c) Within 7 calendar days after receipt of the contracting officer's request, the contractor shall submit a task plan conforming to the request.
- (d) After review and any necessary discussions, the contracting officer may issue a task order to the contractor containing, as a minimum, the following:
- (1) Date of the order.
  - (2) Contract number and order number.
  - (3) Functional description of the work identifying the objectives or results desired from the task order, including special instructions or other information necessary for performance of the task.
  - (4) Performance standards, and where appropriate, quality assurance standards.
  - (5) Maximum dollar amount authorized (cost and fee or price). This includes allocation of award fee among award fee periods, if applicable.
  - (6) Any other resources (travel, materials, equipment, facilities, etc.) authorized.
  - (7) Delivery/performance schedule including start and end dates.
  - (8) If contract funding is by individual task order, accounting and appropriation data.
- (e) The contractor shall provide acknowledgment of receipt to the contracting officer within 2 calendar days after receipt of the task order.
- (f) If time constraints do not permit issuance of a fully defined task order in accordance with the procedures described in paragraphs (a) through (d), a task order, which includes a ceiling price, may be issued.
- (g) The contracting officer may amend tasks in the same manner in which they were issued.
- (h) In the event of a conflict between the requirements of the task order and the contractor's approved task plan, the task order shall prevail.

(End of clause)

---

**H.17 ADJUSTMENT FOR COMPLETION FORM**

(a) The provisions and references of this clause apply to the Completion Form Sections of the Statement of Work (SOW) as indicated per J-1, SOW Table 1. The purpose of this clause is to set forth the terms and conditions governing adjustments to the estimated cost and fee, if any, to account for growth or shrinkage in the work to be performed.

(b) The Government's objective is to have the SOW performed in the most efficient manner possible, consistent with the furnishing of high quality services. One means of achieving this objective is to minimize changes, and thus reduce or eliminate the administrative costs to both parties that are caused by issuing, pricing, and negotiating changes. The contract adjustment provisions set forth herein are intended to achieve that objective, while at the same time compensating the contractor fairly for the furnishing of services that are within a reasonable range of the baseline work (including work load indicator data) projected to be performed under the contract.

(c) Effort required in performance of the SOW shall be initiated via technical direction. All such technical direction shall be considered to fall within the baseline requirements of the contract. Except as provided in this clause, no technical direction shall give rise to an equitable adjustment in the estimated cost or fee, delivery schedule, or any other contract provision.

(d) Adjustment Provisions

- (1) The elements of the work described in the Completion Form Sections of the Statement of Work (SOW) as indicated per J-1, SOW Table 1 are in some instances accompanied by "workload indicator data." These data represent the Government's estimates of the level of services required, and are only intended to reflect the amount of activity anticipated for those elements of work. Workload indicator data do not constitute a limitation on the contractor's obligation to perform work in the areas to which they relate.
- (2) Workload indicator data define the thresholds which must be met before the performance of work which exceeds or is less than the threshold may become the basis for a contract adjustment. Work performed under the contract which falls within a range of plus or minus 20 percent of the workload indicator data will not be subject to contract adjustment (unless an adjustment is necessitated by some other provision of this contract). The fact that the contractor has performed work that is 20 percent above the workload indicator data shall not relieve the contractor of its obligation to continue to perform such work to the extent it is required by the Government.

- (3) An equitable adjustment (either upwards or downwards will be made in the cost and fee provided for in this contract if both the flowing conditions are met annually of each year of the contract:
- one or more of the workload sizing data thresholds has either been exceeded or has not been met by 20 percent; and
  - the net cost increase or decrease of all workload sizing data combined is greater than \$250,000.

The adjustment provisions of this clause shall not be construed as a limitation of the Government's rights under the Termination clause of this contract. In addition, this clause is fully subject to the Limitation of Funds clause of this contract and shall not be construed as authorization to perform work beyond what can be accomplished in accordance with the Limitation of Funds.

- (e) The contractor is responsible for: tracking the performance of work in each applicable Completion Form Sections of the Statement of Work (SOW) as indicated per J-1, SOW Table 1; keeping current, complete, and accurate records regarding the quantum or work performed in relation to the applicable SOW; making such records available to the contracting officer as may be requested from time to time; and submitting an adjustment proposal if the contractor believes the conditions of paragraph (d) above are met, or if requested by the contracting officer. If initiated by the contractor, the contractor's proposal shall be submitted within 90 days of the last day of the performance period under consideration. If requested by the contracting officer, the proposal shall be submitted within 90 days of the request.

#### **H.18 RUSSIAN TRAVEL**

The contractor shall comply with Management Directive, ISSP-MD-114 entitled "Guidelines for Travel to Russia and from Russia to Support Meetings". The Russian Element Team in the OC/Mission Integration and Operations Office is the approving authority for U.S. personnel traveling to Russia and Russian personnel traveling out of Russia.

(End of Clause)

#### **H.19 GOVERNMENT INSIGHT**

- (a) Definitions. For the purpose of this contract, the following definitions apply:

"Insight," as used in this clause, means technical visibility into the Program, maintained through audit, surveillance, assessment of trends and metrics, software independent verification and validation, the flight readiness review process, and review

or independent assessment of out-of-family anomalies occurring in any phase of the program.

“Surveillance,” as used in this clause means continual monitoring and verification of the status of manufacturing, testing, and processing of Station hardware, software and operations preparations to ensure that requirements are being fulfilled. Items to be monitored and verified are selected—this is not an all inclusive activity.

“Audit,” as used in this clause, means the implementation of procedures and requirements of the NASA Engineering Quality Audit (NEQA) or other equivalent audit techniques used to perform periodic audit of all aspects of processes and procedures required to manufacture, assemble, test, and process hardware for flight. Audits may include an examination of all disciplines and tasks which are involved with or support ISS, hardware and software production and maintenance, safety and quality assurance, logistics, procurements and operations. These descriptions are illustrative only and shall not be construed as any limitation on the Government’s right to conduct an audit of the Contractor and subcontractors to determine performance on this contract.

(b) The Government shall have the right to audit the Contractor and subcontractors in accordance with applicable clauses within this contract. One purpose of these audits is to afford the Government insight into and understanding of Contractor and selected subcontractor processes and procedures to determine whether the processes or procedures (1) adversely affect safety; (2) are not within contract performance standards; or (3) adversely affect future launch schedules.

(c) The Government may schedule fact-finding meetings with the Contractor and subcontractors as necessary to discuss issues requiring Government insight. Scheduling and format of these meetings shall indicate whether exchange of information will be required, and the number and expertise of Contractor/subcontractor personnel who shall attend the meetings. When requested by the Contracting Officer or designee, the Contractor and subcontractors shall provide necessary support to the Government when it audits the Contractor or subcontractor and for the Government-Contractor/subcontractor meetings. The purpose of these meetings is to understand the findings of the Government audits. The parties understand and agree that no direction from the Government or constructive change to the contract shall result from any of these meetings.

(End of Clause)

## **H.20 REPROCUREMENT DATA PACKAGE**

The contractor shall provide a Reprourement Data Package in accordance with DRD B-PR-03.

(End of Clause)

---

**H.21 ACCESS TO SENSITIVE INFORMATION 1852.237-72 (JUNE 2005)**

(a) As used in this clause, "sensitive information" refers to information that a contractor has developed at private expense, or that the Government has generated that qualifies for an exception to the Freedom of Information Act, which is not currently in the public domain, and which may embody trade secrets or commercial or financial information, and which may be sensitive or privileged.

(b) To assist NASA in accomplishing management activities and administrative functions, the Contractor shall provide the services specified elsewhere in this contract.

(c) If performing this contract entails access to sensitive information, as defined above, the Contractor agrees to -

(1) Utilize any sensitive information coming into its possession only for the purposes of performing the services specified in this contract, and not to improve its own competitive position in another procurement.

(2) Safeguard sensitive information coming into its possession from unauthorized use and disclosure.

(3) Allow access to sensitive information only to those employees that need it to perform services under this contract.

(4) Preclude access and disclosure of sensitive information to persons and entities outside of the Contractor's organization.

(5) Train employees who may require access to sensitive information about their obligations to utilize it only to perform the services specified in this contract and to safeguard it from unauthorized use and disclosure.

(6) Obtain a written affirmation from each employee that he/she has received and will comply with training on the authorized uses and mandatory protections of sensitive information needed in performing this contract.

(7) Administer a monitoring process to ensure that employees comply with all reasonable security procedures, report any breaches to the Contracting Officer, and implement any necessary corrective actions.

(d) The Contractor will comply with all procedures and obligations specified in its Organizational Conflicts of Interest Avoidance Plan, which this contract incorporates as a compliance document.

(e) The nature of the work on this contract may subject the Contractor and its employees to a variety of laws and regulations relating to ethics, conflicts of interest, corruption, and other criminal or civil matters relating to the award and administration of government contracts. Recognizing that this contract establishes a high standard of accountability and trust, the Government will carefully review the Contractor's performance in relation to the mandates and restrictions found in these laws and regulations. Unauthorized uses or disclosures of sensitive information may result in termination of this contract for default, or in debarment of the Contractor for serious misconduct affecting present responsibility as a government contractor.

(f) The Contractor shall include the substance of this clause, including this paragraph (f), suitably modified to reflect the relationship of the parties, in all subcontracts that may

---

involve access to sensitive information

(End of clause)

## **H.22 RELEASE OF SENSITIVE INFORMATION 1852.237-73 (JUNE 2005)**

(a) As used in this clause, "sensitive information" refers to information, not currently in the public domain, that the Contractor has developed at private expense, that may embody trade secrets or commercial or financial information, and that may be sensitive or privileged.

(b) In accomplishing management activities and administrative functions, NASA relies heavily on the support of various service providers. To support NASA activities and functions, these service providers, as well as their subcontractors and their individual employees, may need access to sensitive information submitted by the Contractor under this contract. By submitting this proposal or performing this contract, the Contractor agrees that NASA may release to its service providers, their subcontractors, and their individual employees, sensitive information submitted during the course of this procurement, subject to the enumerated protections mandated by the clause at 1852.237-72, Access to Sensitive Information.

(c)(1) The Contractor shall identify any sensitive information submitted in support of this proposal or in performing this contract. For purposes of identifying sensitive information, the Contractor may, in addition to any other notice or legend otherwise required, use a notice similar to the following:

Mark the title page with the following legend:

This proposal or document includes sensitive information that NASA shall not disclose outside the Agency and its service providers that support management activities and administrative functions. To gain access to this sensitive information, a service provider's contract must contain the clause at NFS 1852.237-72, Access to Sensitive Information. Consistent with this clause, the service provider shall not duplicate, use, or disclose the information in whole or in part for any purpose other than to perform the services specified in its contract. This restriction does not limit the Government's right to use this information if it is obtained from another source without restriction. The information subject to this restriction is contained in pages [insert page numbers or other identification of pages].

Mark each page of sensitive information the Contractor wishes to restrict with the following legend:

Use or disclosure of sensitive information contained on this page is subject to the restriction on the title page of this proposal or document.

(2) The Contracting Officer shall evaluate the facts supporting any claim that particular information is "sensitive." This evaluation shall consider the time and resources necessary to protect the information in accordance with the detailed safeguards mandated by the clause at 1852.237-72, Access to Sensitive Information. However, unless the Contracting Officer decides, with the advice of Center counsel, that reasonable grounds exist to challenge the Contractor's claim that particular information is sensitive, NASA and its service providers and their employees shall comply with all of the

NNJ04AA02C  
(SECTION H)

Mission Integration Contract

78 of 304  
Modification 93

---

safeguards contained in paragraph (d) of this clause.

(d) To receive access to sensitive information needed to assist NASA in accomplishing management activities and administrative functions, the service provider must be operating under a contract that contains the clause at 1852.237-72, Access to Sensitive Information. This clause obligates the service provider to do the following:

(1) Comply with all specified procedures and obligations, including the Organizational Conflicts of Interest Avoidance Plan, which the contract has incorporated as a compliance document.

(2) Utilize any sensitive information coming into its possession only for the purpose of performing the services specified in its contract.

(3) Safeguard sensitive information coming into its possession from unauthorized use and disclosure.

(4) Allow access to sensitive information only to those employees that need it to perform services under its contract.

(5) Preclude access and disclosure of sensitive information to persons and entities outside of the service provider's organization.

(6) Train employees who may require access to sensitive information about their obligations to utilize it only to perform the services specified in its contract and to safeguard it from unauthorized use and disclosure.

(7) Obtain a written affirmation from each employee that he/she has received and will comply with training on the authorized uses and mandatory protections of sensitive information needed in performing this contract.

(8) Administer a monitoring process to ensure that employees comply with all reasonable security procedures, report any breaches to the Contracting Officer, and implement any necessary corrective actions.

(e) When the service provider will have primary responsibility for operating an information technology system for NASA that contains sensitive information, the service provider's contract shall include the clause at 1852.204-76, Security Requirements for Unclassified Information Technology Resources. The Security Requirements clause requires the service provider to implement an Information Technology Security Plan to protect information processed, stored, or transmitted from unauthorized access, alteration, disclosure, or use. Service provider personnel requiring privileged access or limited privileged access to these information technology systems are subject to screening using the standard National Agency Check (NAC) forms appropriate to the level of risk for adverse impact to NASA missions. The Contracting Officer may allow the service provider to conduct its own screening, provided the service provider employs substantially equivalent screening procedures.

(f) This clause does not affect NASA's responsibilities under the Freedom of Information Act.

(g) The Contractor shall insert this clause, including this paragraph (g), suitably modified to reflect the relationship of the parties, in all subcontracts that may require the furnishing of sensitive information.

**(End of clause)**

---

**H.23 SUBCONTRACTING WITH RUSSIAN ENTITIES FOR GOODS OR SERVICES**

- a) Definitions: In this provision:
- i) The term "Russian entities" includes the following:
    - (1) The Russian Federal Space Agency (Roscosmos),
    - (2) Any organization or entity under the jurisdiction or control of Roscosmos, or
    - (3) Any other organization, entity, or element of the Government of the Russian Federation.
  - ii) The term "Organization or entity under the jurisdiction or control of Roscosmos" means an organization or entity that:
    - (1) Was made part of the Russian Federal Space Agency upon its establishment on February 25, 1992;
    - (2) Was transferred to the Russian Federal Space Agency by decree of the Russian Government on July 25, 1994, or May 12, 1998;
    - (3) Was or is transferred to the Russian Aviation and Space Agency or Russian Federal Space Agency by decree of the Russian Government at any other time before, on, or after March 14, 2000; or**
    - (4) Is a joint stock company in which the Russian Aviation and Space Agency or Russian Federal Space Agency has at any time held controlling interest.
  - iii) The term "extraordinary payments" means payments in cash or in kind made or to be made by the United States Government prior to January 1, 2012, for work to be performed or services to be rendered prior to that date necessary to meet United States obligations under the Agreement Concerning Cooperation on the Civil International Space Station, with annex, signed at Washington January 29, 1998, and entered into force March 27, 2001, or any protocol, agreement, memorandum of understanding, or contract related thereto.
- b) This provision implements the Iran and Syria Nonproliferation Act (the Iran Nonproliferation Act as amended by the Iran Nonproliferation Amendments Act of 2005) to allow extraordinary payments prior to January 1, 2012 to Russian entities in connection with the International Space Station. NASA has applied the restrictions in the Act to include funding of Russian entities via U.S. contractors.
- ~~(c)(i)~~ The Contractor shall not subcontract with Russian entities without first receiving written consent from the Contracting Officer. In order to obtain this written consent to subcontract with any Russian entity as defined in paragraphs (a), the Contractor shall provide the Contracting Officer with the following information related to each planned new subcontract and any change to an existing subcontract with entities that fit the description in paragraphs (a):
- (1) A detailed description of the subcontracting entity, including its name, address, and a point of contact, as well as a detailed description of the proposed

subcontract including the specific purpose of payments that will be made under the subcontract.

- (2) The contractor shall provide certification that the subcontracting entity is not on any of the denied parties, specially designated nationals and entities of concern lists found at: <http://www.hq.nasa.gov/office/oer/nasaecp/Welcome.html>

**Denied Parties, Specially Designated Nationals and Entities of Concern**

BIS's Listing of Entities of Concern UPDATED

BIS's List of Denied Parties UPDATED

Debarred Parties Listing

OFAC's List of Specially Designated Nationals (*Adobe PDF format*)

List of Unverified Persons in Foreign Countries UPDATED

- (ii) Unless relief is granted by the Contracting Officer, the information necessary to obtain consent to subcontract shall be provided to the Contracting Officer 20 business days prior to executing any planned subcontract with entities defined in paragraph (a).
- (d) After receiving consent to subcontract, the Contractor shall provide the following information to the Contracting Officer each time an extraordinary payment is made to the an entity in paragraph (a):
- (i) The name of the entity
  - (ii) The subcontract number
  - (iii) The amount of the payment
  - (iv) The date of the payment
- (e) The Contracting Officer may direct the Contractor to provide additional information for any other prospective or existing subcontract at any tier. The Contracting Officer may direct the Contractor to terminate for the convenience of the government any subcontract at any tier with an entity described in paragraphs (a), subject to an equitable adjustment.
- (f) Notwithstanding FAR 52.216-7, "Allowable Cost and Payments," on or after January 1, 2012 the contractor shall be responsible to make payments to entities defined in paragraphs (a) of this provision. Any subcontract with entities defined in paragraph (a), therefore, should be completed in sufficient time to permit the U.S. Government to make extraordinary payments on subcontracts with Russian entities on or before December 31, 2011.
- (g) The Contractor shall include the substance of this clause in all its subcontracts, and shall require such inclusion in all other subcontracts of any tier. The Contractor shall be responsible to obtain written consent from the Contracting Officer to enter into any tier subcontract that involves entities defined in paragraph (a).

**(End of clause)**  
**[END OF SECTION]**

**PART II - CONTRACT CLAUSES**

**SECTION I**

**CONTRACT CLAUSES**

**I.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE**

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

**I: FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)**

CLAUSE NUMBER	DATE	TITLE
52.202-1	DEC 2001	DEFINITIONS
52.203-3	APR 1984	GRATUITIES
52.203-5	APR 1984	COVENANT AGAINST CONTINGENT FEES
52.203-6	JUL 1995	RESTRICTION ON SUBCONTRACTOR SALES
	TO	
52.203-7	JUL 1995	THE GOVERNMENT
52.203-8	JAN 1997	ANTI-KICKBACK PROCEDURES
RECOVERY OF		CANCELLATION, RECISION, AND
		FUNDS FOR ILLEGAL OR IMPROPER
		ACTIVITY
52.203-10	JAN 1997	PRICE OR FEE ADJUSTMENT FOR ILLEGAL
OR		
52.203-12	JUN 2003	IMPROPER ACTIVITY
		LIMITATION ON PAYMENTS TO INFLUENCE
		CERTAIN FEDERAL TRANSACTIONS
52.204-2	AUG 1996	SECURITY REQUIREMENT
52.204-4	AUG 2000	PRINTING OR COPIED DOUBLE-SIDED ON
		RECYCLED PAPER
52.209-6	JUL 1995	PROTECTING THE GOVERNMENT'S
INTEREST		
		WHEN SUBCONTRACTING WITH
		CONTRACTORS DEBARRED, SUSPENDED,
		OR PROPOSED FOR DEBARMENT
52.211-15	SEP 1990	DEFENSE PRIORITY AND ALLOCATION
REQUESTS		
52.215-2	JUN 1999	AUDIT AND RECORDS--NEGOTIATION
52.215-8	OCT 1997	ORDER OF PRECEDENCE-UNIFORM
CONTRACT		
		FORMAT
52.215-11	OCT 1997	PRICE REDUCTION FOR DEFECTIVE COST
	OR	
		PRICING DATA - MODIFICATIONS

---

52.215-13	OCT 1997	SUBCONTRACTING COST OR PRICING DATA - MODIFICATIONS
52.215-14	OCT 1997	INTEGRITY OF UNIT PRICES
52.215-15	DEC 1998	PENSION ADJUSTMENTS AND ASSET REVERSIONS
52.215-18 FOR	OCT 1997	REVERSION OR ADJUSTMENT OF PLANS  POSTRETIREMENT BENEFITS (PRB) OTHER THAN PENSIONS
52.215-19	OCT 1997	NOTIFICATION OF OWNERSHIP CHANGES
52.215-21 DATA	OCT 1997	REQUIREMENTS FOR COST OR PRICING  OR INFORMATION OTHER THAN COST OR PRICING DATA – MODIFICATIONS
52.216-7	DEC 2002	ALLOWABLE COST AND PAYMENT
52.217-8	NOV 1999	OPTION TO EXTEND SERVICES
52.219-6 ASIDE	JUL 1996	NOTICE OF TOTAL SMALL BUSINESS SET-
52.219-8 CONCERNS	OCT 2000	UTILIZATION OF SMALL BUSINESS
52.219-14	DEC 1996	LIMITATIONS ON SUBCONTRACTING
52.222-1	FEB 1997	NOTICE TO THE GOVERNMENT OF LABOR DISPUTES
52.222-2	JUL 1990	PAYMENT FOR OVERTIME PREMIUMS
52.222-3	JUN 2003	CONVICT LABOR
52.222-21	FEB 1999	PROHIBITION OF SEGREGATED FACILITIES
52.222-26	APR 2002	EQUAL OPPORTUNITY
52.222-29	FEB 1999	NOTIFICATION OF VISA DENIAL
52.222-35 DISABLED	DEC 2001	EQUAL OPPORTUNITY FOR SPECIAL  VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS
52.222-36	JUN 1998	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES
52.222-37 DISABLED	DEC 2001	EMPLOYMENT REPORTS ON SPECIAL  VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS
52.222-41 AMENDED	MAY 1989	SERVICE CONTRACT ACT OF 1965 AS
52.223-5	APR 1998	POLLUTION PREVENTION & RIGHT-TO-KNOW INFORMATION
52.223-6	MAY 2001	DRUG-FREE WORKPLACE
52.223-10	AUG 2000	WASTE REDUCTION PROGRAM
52.223-14	JUN 2003	TOXIC CHEMICAL RELEASE REPORTING
52.224-1	APR 1984	PRIVACY ACT NOTIFICATION
52.224-2	APR 1984	PRIVACY ACT
52.225-13	JUN 2003	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES
52.227-1	JUL 1995	AUTHORIZATION AND CONSENT

52.227-2	AUG 1996	NOTICE AND ASSISTANCE REGARDING
PATENT		
52.227-14	JUN 1987	AND COPYRIGHT INFRINGEMENT
ALTERNATES II		RIGHTS IN DATA - GENERAL AND
52.227-16	JUN 1987	AND III
52.227-17	JUN 1987	ADDITIONAL DATA REQUIREMENTS
MODIFIED		RIGHTS IN DATA - SPECIAL WORKS AS
52.228-7	MAR 1996	BY NFS 1825.227-17
52.232-9	APR 1984	INSURANCE--LIABILITY TO THIRD PERSONS
PAYMENTS		LIMITATION ON WITHHOLDING OF
52.232-17	JUN 1996	INTEREST
52.232-18	APR 1984	AVAILABILITY OF FUNDS
52.232-22	APR 1984	LIMITATION OF FUNDS
52.232-23	JAN 1986	ASSIGNMENT OF CLAIMS
52.232-25	FEB 2002	PROMPT PAYMENT (ALTERNATE I)
52.233-1	JUL 2002	DISPUTES (ALTERNATE I) (DEC 1991)
52.233-3	AUG 1996	PROTEST AFTER AWARD (ALTERNATE I)
52.237-2	APR 1984	(JUN 1985)
52.237-3	JAN 1991	PROTECTION OF GOVERNMENT BUILDINGS,
52.242-1	APR 1984	EQUIPMENT, AND VEGETATION
52.242-3	MAY 2001	CONTINUITY OF SERVICES
52.242-4	JAN 1997	NOTICE OF INTENT TO DISALLOW COSTS
52.242-13	JUL 1995	PENALTIES FOR UNALLOWABLE COST
52.243-2	AUG 1987	CERTIFICATION OF FINAL INDIRECT COSTS
52.243-6	APR 1984	BANKRUPTCY
52.244-2	AUG 1998	CHANGES--COST REIMBURSEMENT
52.244-5	DEC 1996	CHANGE ORDER ACCOUNTING
52.246-11	FEB 1999	SUBCONTRACTS - ALTERNATE I (AUG 1998)
SPECIFICATION,		COMPETITION IN SUBCONTRACTING
QUALITY ASSURANCE IN		HIGHER LEVEL CONTRACT QUALITY
DESIGN/DEVELOPMENT, PRODUCTION,		REQUIREMENT (GOVERNMENT
INSTALLATION, AND SERVICING")		AS9100 "MODEL FOR
52.246-25	FEB 1997	LIMITATION OF LIABILITY--SERVICES
52.247-1	APR 1984	COMMERCIAL BILL OF LADING NOTATIONS
52.247-63	JUN 2003	PREFERENCE FOR U.S. FLAG AIR CARRIERS
52.247-64	APR 2003	PREFERENCE FOR PRIVATELY OWNED U.S.
FLAG		COMMERCIAL VESSELS
52.247-67	JUN 1997	SUBMISSION OF COMMERCIAL
	TRANSPORTATION	BILLS TO THE GENERAL
	SERVICES	ADMINISTRATION
	FOR AUDITS	
52.248-1	FEB 2000	VALUE ENGINEERING
52.251-2	JAN 1991	INTERAGENCY FLEET MANAGEMENT
	SYSTEMS	VEHICLES AND RELATED
	SERVICES	

52.249-6	SEP 1996	TERMINATION (COST-REIMBURSEMENT)
52.249-14	APR 1984	EXCUSABLE DELAYS
52.251-1	APR 1984	GOVERNMENT SUPPLY SOURCES
52.253-1	JAN 1991	COMPUTER GENERATED FORMS

## II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

CLAUSE NUMBER	DATE	TITLE
1852.203-70	JUN 2001	DISPLAY OF INSPECTOR GENERAL HOTLINE POSTERS
1852.209-72	DEC 1988	COMPOSITION OF THE CONTRACTOR
1852.216-89	JUL 1997	ASSIGNMENT AND RELEASE FORMS
1852.219-74	SEP 1990	USE OF RURAL AREA SMALL BUSINESSES
1852.219-76	JUL 1997	NASA 8 PERCENT GOAL
1852.223-74	MAR 1996	DRUG AND ALCOHOL FREE WORKFORCE
1852.227-14	OCT 1995	RIGHTS IN DATA GENERAL
1852.228-75	OCT 1988	MINIMUM INSURANCE COVERAGE
1852.235-70	FEB 2003	CENTER FOR AEROSPACE INFORMATION
1852.237-70	DEC 1988	EMERGENCY EVACUATION PROCEDURES
1852.242-76	MAR 1999	MODIFIED COST PERFORMANCE REPORT
1852.242-78	APR 2001	EMERGENCY MEDICAL SERVICES AND EVACUATION
1852.246-70	MAR 1997	MISSION CRITICAL SPACE SYSTEM PERSONNEL
		RELIABILITY PROGRAM

(End Of Clause)

### **I.2 CLAUSES INCORPORATED BY REFERENCE (FAR 52.252-2)**

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far/>

<http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>

<http://www.jsc.nasa.gov/bd2/jscbm/part-52.htm>

(End of clause)

### **I.3 APPROVAL OF CONTRACT (FAR 52.204-1)(DEC 1989)**

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

(End of clause)

**I.4 SECURITY CLASSIFICATION REQUIREMENTS (NASA 1852.204-75)  
(SEPT 1989)**

Performance under this contract will involve access to and/or generation of classified information, work in a security area, or both, up to the level of Secret. See Federal Acquisition Regulation clause 52.204-2 in this contract and DD Form 254, Contract Security Classification Specification, Section J-1, Appendix C.

(End of clause)

**I.5 SECURITY REQUIREMENTS FOR UNCLASSIFIED INFORMATION  
TECHNOLOGY RESOURCES (1852.204-76) (JUL 2002)**

(a) The contractor shall be responsible for Information Technology security for all systems connected to a NASA network or operated by the contractor for NASA, regardless of location. This clause is applicable to all or any part of the contract that includes information technology resources or services in which the contractor must have physical or electronic access to NASA's sensitive information contained in unclassified systems that directly support the mission of the Agency. This includes information technology, hardware, software, and the management, operation, maintenance, programming, and system administration of computer systems, networks, and telecommunications systems.

Examples of tasks that require security provisions include:

- (1) Computer control of spacecraft, satellites, or aircraft or their payloads;
- (2) Acquisition, transmission or analysis of data owned by NASA with significant replacement cost should the contractor's copy be corrupted; and
- (3) Access to NASA networks or computers at a level beyond that granted the general public, e.g. bypassing a firewall.

(b) The contractor shall provide, implement, and maintain an IT Security Plan. This plan shall describe the processes and procedures that will be followed to ensure appropriate security of IT resources that are developed, processed, or used under this contract. The plan shall describe those parts of the contract to which this clause applies. The contractor's IT Security Plan shall be compliant with Federal laws that include, but are not limited to, the Computer Security Act of 1987 (40 U.S.C. 1441 et seq.) and the Government Information

Security Reform Act of 2000. The plan shall meet IT security requirements in accordance with Federal and NASA policies and procedures that include, but are not limited to:

- (1) OMB Circular A-130, Management of Federal Information Resources, Appendix III, Security of Federal Automated Information Resources;
- (2) NASA Procedures and Guidelines (NPG) 2810.1, Security of Information Technology; and
- (3) Chapter 3 of NPG 1620.1, NASA Security Procedures and Guidelines.

(c) Within 60 days after contract award, the contractor shall submit for NASA approval an IT Security Plan. This plan must be consistent with and further detail the approach contained in the offeror's proposal or sealed bid that resulted in the award of this contract and in compliance with the requirements stated in this clause. The plan, as approved by the Contracting Officer, shall be incorporated into the contract as a compliance document.

(d) (1) Contractor personnel requiring privileged access or limited privileged access to systems operated by the contractor for NASA or interconnected to a NASA network shall be screened at an appropriate level in accordance with NPG 2810.1, Section 4.5; NPG 1620.1, Chapter 3; and paragraph (d)(2) of this clause. Those contractor personnel with non-privileged access do not require personnel screening. NASA shall provide screening using standard personnel screening National Agency Check (NAC) forms listed in paragraph (d)(3) of this clause, unless contractor screening in accordance with paragraph (d)(4) is approved. The contractor shall submit the required forms to the NASA Center Chief of Security (CCS) within fourteen (14) days after contract award or assignment of an individual to a position requiring screening. The forms may be obtained from the CCS. At the option of the government, interim access may be granted pending completion of the NAC.

(2) Guidance for selecting the appropriate level of screening is based on the risk of adverse impact to NASA missions. NASA defines three levels of risk for which screening is required (IT-1 has the highest level of risk):

(i) **IT-1** – Individuals having privileged access or limited privileged access to systems whose misuse can cause very serious adverse impact to NASA missions. These systems include, for example, those that can transmit commands directly modifying the behavior of spacecraft, satellites or aircraft.

(ii) **IT-2** – Individuals having privileged access or limited privileged access to systems whose misuse can cause serious adverse impact to NASA missions. These systems include, for example, those that can transmit commands directly modifying the behavior of payloads on spacecraft, satellites or aircraft; and those

that contain the primary copy of "level 1" data whose cost to replace exceeds one million dollars.

(iii) **IT-3** – Individuals having privileged access or limited privileged access to systems whose misuse can cause significant adverse impact to NASA missions. These systems include, for example, those that interconnect with a NASA network in a way that exceeds access by the general public, such as bypassing firewalls; and systems operated by the contractor for NASA whose function or data has substantial cost to replace, even if these systems are not interconnected with a NASA network.

(3) Screening for individuals shall employ forms appropriate for the level of risk as follows:

(i) IT-1: Fingerprint Card (FC) 258 and Standard Form (SF) 85P, Questionnaire for Public Trust Positions;

(ii) IT-2: FC 258 and SF 85, Questionnaire for Non-Sensitive Positions; and

(iii) IT-3: NASA Form 531, Name Check, and FC 258.

(4) The Contracting Officer may allow the contractor to conduct its own screening of individuals requiring privileged access or limited privileged access provided the contractor can demonstrate that the procedures used by the contractor are equivalent to NASA's personnel screening procedures. As used here, equivalent includes a check for criminal history, as would be conducted by NASA, and completion of a questionnaire covering the same information as would be required by NASA.

(5) Screening of contractor personnel may be waived by the Contracting Officer for those individuals who have proof of:

(i) Current or recent national security clearances (within last three years);

(ii) Screening conducted by NASA within last three years; or

(iii) Screening conducted by the contractor, within last three years, that is equivalent to the NASA personnel screening procedures as approved by the Contracting Officer under paragraph (d)(4) of this clause.

(e) The contractor shall ensure that its employees, in performance of the contract, receive annual IT security training in NASA IT Security policies, procedures, computer ethics, and best practices in accordance with NPG 2810.1, Section 4.3 requirements. The contractor may use web-based training available from NASA to meet this requirement.

(f) The contractor shall afford NASA, including the Office of Inspector General, access to the contractor's and subcontractors' facilities, installations, operations, documentation, databases and personnel used in performance of the contract. Access shall be provided to the extent required to carry out a program of IT inspection, investigation and audit to safeguard against threats and hazards to the integrity, availability and confidentiality of NASA data or to the function of computer systems operated on behalf of NASA, and to preserve evidence of computer crime.

(g) The contractor shall incorporate the substance of this clause in all subcontracts that meet the conditions in paragraph (a) of this clause.

(End of clause)

**I.6 OMBUDSMAN (NASA 1852.215-84) (OCTOBER 2003)**

(a) An ombudsman has been appointed to hear and facilitate the resolution of concerns from offerors, potential offerors, and contractors during the preaward and postaward phases of this acquisition. When requested, the ombudsman will maintain strict confidentiality as to the source of the concern. The existence of the ombudsman is not to diminish the authority of the contracting officer, the Source Evaluation Board, or the selection official. Further, the ombudsman does not participate in the evaluation of proposals, the source selection process, or the adjudication of formal contract disputes. Therefore, before consulting with an ombudsman, interested parties must first address their concerns, issues, disagreements, and/or recommendations to the contracting officer for resolution.

(b) If resolution cannot be made by the contracting officer, interested parties may contact the installation ombudsman, Lucy V. Kranz, address 2101 Nasa Parkway, Houston, Texas, at 281.483.0490, facsimile 281-483-2200, and e-mail [lucy.v.kranz@nasa.gov](mailto:lucy.v.kranz@nasa.gov). Concerns, issues, disagreements, and recommendations which cannot be resolved at the installation may be referred to the NASA ombudsman, the Director of the Contract Management Division, at 202-358-0445, facsimile 202-358-3083, e-mail [james.a.balinskas@nasa.gov](mailto:james.a.balinskas@nasa.gov). Please do not contact the ombudsman to request copies of the solicitation, verify offer due date, or clarify technical requirements. Such inquiries shall be directed to the Contracting Officer or as specified elsewhere in this document.

(End of clause)

**I.7 OPTION TO EXTEND THE TERM OF THE CONTRACT (FAR 2.217-9) (MAR 2000)**

(a) The Government may extend the term of this contract by written notice to the contractor within 30 days; provided that the Government gives the contractor a preliminary written notice of its intent to extend at least 30 days before the contract expires. The preliminary notice does not commit the Government to an extension.

(b) If the Government exercises this option, the extended contract shall be considered to include this option clause.

(c) The total duration of this contract, including the exercise of any options under this clause, shall not exceed 6 years and 9 months.

(End of clause)

**I.8 TAXES--FOREIGN COST-REIMBURSEMENT CONTRACTS**  
**(FAR 52.229-8)(MAR 1990)**

(a) Any tax or duty from which the United States Government is exempt by agreement with the Government of any countries for which travel is required under this contract, or from which the contractor or any subcontractor under this contract is exempt under the laws of such countries, shall not constitute an allowable cost under this contract.

(b) If the contractor or subcontractor under this contract obtains a foreign tax credit that reduces its Federal income tax liability under the United States Internal Revenue Code (Title 26, U.S. Code) because of the payment of any tax or duty that was reimbursed under this contract, the amount of the reduction shall be paid or credited at the time of such offset to the Government of the United States as the Contracting Officer directs.

(End of clause)

**I.9 ENGINEERING CHANGE PROPOSALS (NASA 1852.243-70) (OCT 2001)**

(a) Definitions.

**“ECP” means** an Engineering Change Proposal (ECP) which is a proposed engineering change and the documentation by which the change is described, justified, and submitted to the procuring activity for approval or disapproval.

(b) Either party to the contract may originate ECPs. Implementation of an approved ECP may occur by either a supplemental agreement or, if appropriate, as a written change order to the contract.

(c) Any ECP submitted to the Contracting Officer shall include a "not-to-exceed" \_\_\_ [price or estimated cost] increase or decrease adjustment amount, if any, and the required [time of delivery or period of performance] adjustment, if any, acceptable to the originator of the ECP. If the change is originated within the Government, the Contracting Officer shall obtain a written agreement with the contractor regarding the "not-to-exceed" \_\_\_ [price or estimated cost] and [delivery or period of performance] adjustments, if any, prior to issuing an order for implementation of the change.

(d) After submission of a contractor initiated ECP, the contracting officer may require the contractor to submit the following information:

(1) Cost or pricing data in accordance with FAR 15.403-5 if the proposed change meets the criteria for its submission under FAR 15.403-4; or

(2) Information other than cost or pricing data adequate for contracting officer determination of price reasonableness or cost realism. The contracting officer reserves the right to request additional information if that provided by the contractor is considered inadequate for that purpose. If the contractor claims applicability of one of the exceptions to submission of cost or pricing data, it shall cite the exception and provide rationale for its applicability.

(e) If the ECP is initiated by NASA, the contracting officer shall specify the cost information requirements, if any.

(End of clause)

**ALTERNATE I  
(JULY 1997)**

As prescribed in 1843.205-70(a)(2), add the following paragraph (f), modified to suit contract type, to the basic clause:

(f) If the \_\_\_ [price or estimated cost] adjustment proposed for any contractor-originated ECP is \_\_\_ [insert a percent or dollar amount of the contract price or estimated cost] or less, the ECP shall be executed with no adjustment to the contract \_\_\_ [price or estimated cost].

(End of clause)

**ALTERNATE II  
(SEPTEMBER 1990)**

As prescribed in 1843.205-70(a)(3), add the following sentence at the end of paragraph (c) of the basic clause:

An ECP accepted in accordance with the Changes clause of this contract shall not be considered an authorization to the contractor to exceed the estimated cost in the contract Schedule, unless the estimated cost is increased by the change order or other contract modification.

(End of clause)

**I.10 SHARED SAVINGS (NASA 1852.243-71) (MAR 1997)**

(a) The contractor is entitled, under the provisions of this clause, to share in cost savings resulting from the implementation of cost reduction projects which are presented to the Government in the form of Cost Reduction Proposals (CRP) and approved by the Contracting Officer. These cost reduction projects may require changes to the terms, conditions or statement of work of this contract. Any cost reduction projects must not change the essential function of any products to be delivered or the essential purpose of services to be provided under the contract.

**(b) Definitions:**

- (1) **Cost savings**, as contemplated by this clause mean savings that result from instituting changes to the covered contract, as identified in an approved Cost Reduction Proposal.
- (2) **Cost Reduction Proposal** - For the purposes of this clause, a Cost Reduction Proposal means a proposal that recommends alternatives to the established procedures and/or organizational support of a contract or group of contracts. These alternatives must result in a net reduction of contract cost and price to NASA. The proposal will include technical and cost information sufficient to enable the Contracting Officer to evaluate the CRP and approve or disapprove it.
- (3) **Covered contract** - As used in this provision, covered contract means the contract, including unexercised options but excluding future contracts, whether contemplated or not, against which the CRP is submitted.
- (4) **Contractor implementation costs** - As used in this provision, contractor implementation costs, or "implementation costs", shall mean those costs which the contractor incurs on covered contracts specifically in developing, preparing, submitting, and negotiating a CRP, as well as those costs the contractor will incur on covered contracts to make any structural or organizational changes in order to implement an approved CRP.
- (5) **Government costs** - As used in this provision, the term Government costs means internal costs of NASA, or any other Government agency, which result directly from development and implementation of the CRP. These may include, but are not limited to, costs associated with the administration of the contract or with such contractual-related functions such as testing, operations, maintenance and logistics support. These costs also include costs associated with other Agency contracts (including changes in contract price or cost and fee) that may be affected as a result of the implementation of a CRP. They do not include the normal administrative costs of reviewing and processing the Cost Reduction Proposal.

(c) General. The contractor will develop, prepare and submit CRP's with supporting information as detailed in paragraph (e) of this clause, to the Contracting Officer. The CRP will describe the proposed cost reduction activity in sufficient detail to enable the Contracting Officer to evaluate it and to approve or disapprove it. The contractor shall share in any net cost savings realized from approved and implemented CRPs in accordance with the terms of this clause. The contractor's actual percentage share of the cost savings shall be a matter for negotiation with the Contracting Officer, but shall not, in any event, exceed 50 percent of the total cost savings recognized by the Contracting Officer. The contractor may propose changes in other activities that impact performance on its contract, including Government and other contractor operations, if such changes will optimize cost savings. A contractor shall not be entitled to share, however, in any cost savings that are internal to the Government, or which result from changes made to any contracts to which it is not a party even if those changes were proposed as a part of its CRP. Early communication between the contractor and Government is encouraged. The communication may be in the form of a concept paper or preliminary proposal. The Government is not committed to accepting any proposal as a result of these early discussions.

(d) Computation of cost savings. The cost savings to be shared between the Government and the contractor will be computed by the Contracting Officer by comparing a current estimate to complete (ETC) for the covered contract, as structured before implementation of the proposed CRP, to a revised ETC which takes into account the implementation of that CRP. The cost savings to be shared shall be reduced by any cost overrun, whether experienced or projected, that is identified on the covered contract before implementation of the CRP. Although a CRP may result in cost savings that extend far into the future, the period in which the contractor may share in those savings will be limited to no more than five years. Implementation costs of the contractor must be considered and specifically identified in the revised ETC. The Contracting Officer shall offset contractor cost savings by any increased costs (whether implementing or recurring) to the Government when computing the total cost savings to be shared. The contractor shall not be entitled, under the provisions of this clause, to share in any cost reductions to the contract that are the result of changes stemming from any action other than an approved CRP. However, this clause does not limit recovery of any such reimbursements that are allowed as a result of other contract provisions.

(e) Supporting Information. As a minimum, the contractor shall provide the following supporting information with each CRP:

- (1) Identification of the current contract requirements or established procedures and/or organizational support which are proposed to be changed.
- (2) A description of the difference between the current process or procedure and the proposed change. This description shall address how proposed changes will meet NASA requirements and discuss the advantages and disadvantages of the existing

practice and the proposed changes.

- (3) A list of contract requirements which must be revised, if any, if the CRP is approved, along with proposed revisions. Any changes to NASA or delegated contract management processes should also be addressed.
  - (4) Detailed cost estimates which reflect the implementation costs of the CRP.
  - (5) An updated ETC for the covered contract, unchanged, and a revised ETC for the covered contract which reflects changes resulting from implementing the CRP. If the CRP proposes changes to only a limited number of elements of the contract, the ETCs need only address those portions of the contract that have been impacted. Each ETC shall depict the level of costs incurred or to be incurred by year, or to the level of detail required by the Contracting Officer. If other CRPs have been proposed or approved on a contract, the impact of these CRPs must be addressed in the computation of the cost savings to ensure that the cost savings identified are attributable only to the CRP under consideration in the instant case.
  - (6) Identification of any other previous submissions of the CRP, including the dates submitted, the agencies and contracts involved, and the disposition of those submittals.
- (f) Administration.
- (1) The contractor shall submit proposed CRPs to the Contracting Officer who shall be responsible for the review, evaluation and approval. Normally, CRP's should not be entertained for the first year of performance to allow the Contracting Officer to assess performance against the basic requirements. If a cost reduction project impacts more than a single contract, the contractor may, upon concurrence of the Contracting Officers responsible for the affected contracts, submit a single CRP which addresses fully the cost savings projected on all affected contracts that contain this Shared Savings Clause. In the case of multiple contracts affected, responsibility for the review and approval of the CRP will be a matter to be decided by the affected Contracting Officers.
  - (2) Within 60 days of receipt, the Contracting Officer shall complete an initial evaluation of any proposed cost reduction plan to determine its feasibility. Failure of the Contracting Officer to provide a response within 60 days shall not be construed as approval of the CRP. The Government shall promptly notify the contractor of the results of its initial evaluation and indicate what, if any, further action will be taken. If the Government determines that the proposed CRP has merit, it will open discussions with the contractor to establish the cost savings to be recognized, the contractor's share of the cost savings, and a payment schedule. The contractor shall continue to perform in accordance with the terms and conditions of the existing contract until a contract modification is executed by the Contracting Officer. The modification shall constitute approval of the CRP and shall incorporate the changes

identified by the CRP, adjust the contract cost and/or price, establish the contractor's share of cost savings, and incorporate the agreed to payment schedule.

(3) The contractor will receive payment by submitting invoices to the Contracting Officer for approval. The amount and timing of individual payments will be made in accordance with the schedule to be established with the Contracting Officer. Notwithstanding the overall savings recognized by the Contracting Officer as a result of an approved CRP, payment of any portion of the contractor's share of savings shall not be made until NASA begins to realize a net cost savings on the contract (i.e., implementation, startup and other increased costs resulting from the change have been offset by cumulative cost savings). Savings associated with unexercised options will not be paid unless and until the contract options are exercised. It shall be the responsibility of the contractor to provide such justification, as the Contracting Officer deems necessary to substantiate that cost savings are being achieved.

(4) Any future activity, including a merger or acquisition undertaken by the contractor (or to which the contractor becomes an involved party), which has the effect of reducing or reversing the cost savings realized from an approved CRP for which the contractor has received payment may be cause for recomputing the net cost savings associated with any approved CRP. The Government reserves the right to make an adjustment to the contractor's share of cost savings and to receive a refund of moneys paid if necessary. Such adjustment shall not be made without notifying the contractor in advance of the intended action and affording the contractor an opportunity for discussion.

(g) Limitations. Contract requirements that are imposed by statute shall not be targeted for cost reduction exercises. The contractor is precluded from receiving reimbursements under both this clause and other incentive provisions of the contract, if any, for the same cost reductions.

(h) Disapproval of, or failure to approve, any proposed cost reduction proposal shall not be considered a dispute subject to remedies under the Disputes clause.

(i) Cost savings paid to the contractor in accordance with the provisions of this clause do not constitute profit or fee within the limitations imposed by 10 U.S.C. 2306(d) and 41 U.S.C. 254(b).

(End of clause)

**I.11 SUBCONTRACTS FOR COMMERCIAL ITEMS (FAR 52.244-6) (APR 2003)**

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

"Commercial item" has the meaning contained in the clause at 52.202-1, Definitions.

"Subcontract" includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or non-developmental items as components of items to be supplied under this contract.

(c)(1) The contractor shall insert the following clauses in subcontracts for commercial items:

(i) 52.219-8, Utilization of Small Business Concerns (Oct 2000) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds \$500,000 (\$1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(ii) 52.222-26, Equal Opportunity (Apr 2002) (E.O. 11246).

(iii) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (Dec 2001) (38 U.S.C. 4212(a));

(iv) 52.222-36, Affirmative Action for Workers with Disabilities (June 1998) (29 U.S.C. 793).

(v) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (June 2000) (46 U.S.C. Appx 1241) (flowdown not required for subcontracts awarded beginning May 1, 1996).

(2) While not required, the contractor may flow down to subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(d) The contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

(End of clause)

**I.12 GOVERNMENT PROPERTY (COST-REIMBURSEMENT, TIME-AND-MATERIAL OR LABOR-HOUR CONTRACTS) (FAR 52.245-5) (JUL 1995)(DEVIATION)**

(a) Government-furnished property.

(1) The term "contractor's managerial personnel," as used in paragraph (g) of this clause, means any of the contractor's directors, officers, managers, superintendents, or equivalent representatives who have supervision or direction of:

- (i) All or substantially all of the contractor's business;
- (ii) All or substantially all of the contractor's operation at any one plant, or separate location at which the contract is being performed; or
- (iii) A separate and complete major industrial operation connected with performing this contract.

(2) The Government shall deliver to the contractor, or use in connection with and under the terms of this contract, the Government-furnished property described in the Schedule or specifications, together with such related data and information as the contractor may request and as may be reasonably required for the intended use of the property (hereinafter referred to as "Government-furnished property").

(3) The delivery or performance dates for this contract are based upon the expectation that Government-Furnished property suitable for use will be delivered to the contractor at the times stated in the Schedule or, if not so stated, in sufficient time to enable the contractor to meet the contract's delivery or performance dates.

(4) If Government-Furnished property is received by the contractor in a condition not suitable for the intended use, the contractor shall, upon receipt, notify the Contracting Officer, detailing the facts, and, as directed by the Contracting Officer and at Government expense, either effect repairs or modification or return or otherwise dispose of the property.

After completing the directed action and upon written request of the contractor, the Contracting Officer shall make an equitable adjustment as provided in paragraph (h) of this clause.

**(5) If Government-furnished property is not delivered to the contractor by the required time or times, the Contracting Officer shall, upon the contractor's timely written request, make a determination of the delay, if any, caused the contractor and shall make an equitable adjustment in accordance with paragraph (h) of this clause.**

(b) Changes in Government-furnished property.

(1) The Contracting Officer may, by written notice, (i) decrease the Government-Furnished property provided or to be provided under this contract or (ii) substitute other Government-Furnished property for the property to be provided by the Government or to be acquired by the contractor for the Government under this contract. The contractor shall promptly take such action as the Contracting Officer may direct regarding the removal, shipment, or disposal of the property covered by this notice.

(2) Upon the contractor's written request, the Contracting Officer shall make an equitable adjustment to the contract in accordance with paragraph (h) of this clause, if the Government has agreed in the Schedule to make such property available for

performing this contract and there is any:

- (i) Decrease or substitution in this property pursuant to subparagraph (b)(1) above; or
- (ii) Withdrawal of authority to use property, if provided under any other contract or lease.

(c) Title.

- (1) The Government shall retain title to all Government-furnished property.
- (2) Title to all property purchased by the contractor for which the contractor is entitled to be reimbursed as a direct item of cost under this contract shall pass to and vest in the Government upon the vendor's delivery of such property.
- (3) Title to all other property, the cost of which is reimbursable to the contractor, shall pass to and vest in the Government upon:
  - (i) Issuance of the property for use in contract performance;
  - (ii) Commencement of processing of the property or use in contract performance; or
  - (iii) Reimbursement of the cost of the property by the Government, whichever occurs first.
- (4) All Government-Furnished property and all property acquired by the contractor, title to which vests in the Government under this paragraph (collectively referred to as "Government property"), are subject to the provisions of this clause. Title to Government property shall not be affected by its incorporation into or attachment to any property not owned by the Government, nor shall Government property become a fixture or lose its identity as personal property by being attached to any real property.

(d) Use of Government property. The Government property shall be used only for performing this contract, unless otherwise provided in this contract or approved by the Contracting Officer.

(e) Property administration.

- (1) The contractor shall be responsible and accountable for all Government property provided under the contract and shall comply with Federal Acquisition Regulation (FAR) Subpart 45.5, as in effect on the date of this contract.
- (2) The contractor shall establish and maintain a program for the use, maintenance, repair, protection, and preservation of Government property in accordance with sound business practice and the applicable provisions of FAR Subpart 45.5.
- (3) If damage occurs to Government property, the risk of which has been assumed by the Government under this contract, the Government shall replace the items or the

contractor shall make such repairs as the Government directs. However, if the contractor cannot affect such repairs within the time required, the contractor shall dispose of the property as directed by the Contracting Officer. When any property for which the Government is responsible is replaced or repaired, the Contracting Officer shall make an equitable adjustment in accordance with paragraph (h) of this clause.

(f) Access. The Government and all its designees shall have access at all reasonable times to the premises in which any Government property is located for the purpose of inspecting the Government property.

(g) Limited risk of loss.

(1) The contractor shall not be liable for loss or destruction of, or damage to, the Government property provided under this contract or for expenses incidental to such loss, destruction, or damage, except as provided in subparagraphs (2) and (3) below.

(2) The contractor shall be responsible for loss or destruction of, or damage to, the Government property provided under this contract (including expenses incidental to such loss, destruction, or damage):

(i) That results from a risk expressly required to be insured under this contract, but only to the extent of the insurance required to be purchased and maintained or to the extent of insurance actually purchased and maintained, whichever is greater;

(ii) That results from a risk that is in fact covered by insurance or for which the contractor is otherwise reimbursed, but only to the extent of such insurance or reimbursement;

(iii) For which the contractor is otherwise responsible under the express terms of this contract;

(iv) That results from willful misconduct or lack of good faith on the part of the contractor's managerial personnel; or;

(v) That results from a failure on the part of the contractor, due to willful misconduct or lack of good faith on the part of the contractor's managerial personnel, to establish and administer a program or system for the control, use, protection, preservation, maintenance, and repair of Government property as required by paragraph (e) of this clause.

(3) (i) If the contractor fails to act as provided by subdivision (g)(2)(v) above, after being notified (by certified mail addressed to one of the contractor's managerial personnel) of the Government's disapproval, withdrawal of approval, or non-acceptance of the system or program, it shall be conclusively presumed that such failure was due to willful misconduct or lack of good faith on the part of the contractor's managerial personnel.

(ii) In such event, any loss or destruction of, or damage to, the Government property shall be presumed to have resulted from such failure unless the

contractor can establish by clear and convincing evidence that such loss, destruction, or damage

(A) Did not result from the contractor's failure to maintain an approved program or system; or

(B) Occurred while an approved program or system was maintained by the contractor.

(4) If the contractor transfers Government property to the possession and control of a subcontractor, the transfer shall not affect the liability of the contractor for loss or destruction of, or damage to, the property as set forth above. However, the contractor shall require the subcontractor to assume the risk of, and be responsible for, any loss or destruction of, or damage to, the property while in the subcontractor's possession or control, except to the extent that the subcontract, with the advance approval of the Contracting Officer, relieves the subcontractor from such liability. In the absence of such approval, the subcontract shall contain appropriate provisions requiring the return of all Government property in as good condition as when received, except for reasonable wear and tear or for its use in accordance with the provisions of the prime contract.

(5) The contractor shall notify the Contracting Officer upon loss or destruction of, or damage to, Government property provided under this contract (with the exception of low value property for which loss, damage, or destruction is reported at contract termination, completion, or when needed for continued contract performance. The contractor shall take all reasonable action to protect the Government property from further damage, separate the damaged and undamaged Government property, put all the affected Government property in the best possible order, and furnish to the Contracting Officer a statement of:

(i) The lost, destroyed, or damaged Government property;

(ii) The time and origin of the loss, destruction, or damage;

(iii) All known interests in commingled property of which the Government property is a part; and

(iv) The insurance, if any, covering any part of or interest in such commingled property.

(6) The contractor shall repair, renovate, and take such other action with respect to damaged Government property as the Contracting Officer directs. If the Government property is destroyed or damaged beyond practical repair, or is damaged and so commingled or combined with property of others (including the contractor's) that separation is impractical, the contractor may, with the approval of and subject to any conditions imposed by the Contracting Officer, sell such property for the account of the Government. Such sales may be made in order to minimize the loss to the Government, to permit the resumption of business, or to accomplish a similar purpose. The contractor shall be entitled to an equitable adjustment in the contract price for the expenditures made in performing the obligations under this subparagraph (g)(6) in accordance with paragraph (h) of this clause. However, the

Government may directly reimburse the loss and salvage organization for any of their charges. The Contracting Officer shall give due regard to the contractor's liability under this paragraph (g) when making any such equitable adjustment.

(7) The contractor shall not be reimbursed for, and shall not include as an item of overhead, the cost of insurance or of any reserve covering risk of loss or destruction of, or damage to, Government property, except to the extent that the Government may have expressly required the contractor to carry such insurance under another provision of this contract.

(8) In the event the contractor is reimbursed or otherwise compensated for any loss or destruction of, or damage to, Government property, the contractor shall use the proceeds to repair, renovate, or replace the lost, destroyed, or damaged Government property or shall otherwise credit the proceeds to, or equitably reimburse, the Government, as directed by the Contracting Officer.

(9) The contractor shall do nothing to prejudice the Government's rights to recover against third parties for any loss or destruction of, or damage to, Government property. Upon the request of the Contracting Officer, the contractor shall, at the Government's expense, furnish to the Government all reasonable assistance and cooperation (including the prosecution of suit and the execution of instruments of assignment in favor of the Government) in obtaining recovery. In addition, where a subcontractor has not been relieved from liability for any loss or destruction of, or damage to, Government property, the contractor shall enforce for the benefit of the Government the liability of the subcontractor for such loss, destruction, or damage.

(h) Equitable adjustment. When this clause specifies an equitable adjustment, it shall be made to any affected contract provision in accordance with the procedures of the Changes clause. When appropriate, the Contracting Officer may initiate an equitable adjustment in favor of the Government. The right to an equitable adjustment shall be the contractor's exclusive remedy. The Government shall not be liable to suit for breach of contract for

(1) Any delay in delivery of Government-furnished property;

(2) Delivery of Government-furnished property in a condition not suitable for its intended use;

(3) A decrease in or substitution of Government-furnished property; or

(4) Failure to repair or replace Government property for which the Government is responsible.

(i) Final accounting and disposition of Government property. Upon completing this contract, or at such earlier dates as may be fixed by the Contracting Officer, the contractor shall submit, in a form acceptable to the Contracting Officer, inventory schedules covering all items of Government property not consumed in performing this contract or delivered to the Government. The contractor shall prepare for shipment, deliver f.o.b. origin, or dispose of the Government property as may be directed or authorized by the Contracting Officer. The net proceeds of any such disposal shall be

credited to the cost of the work covered by this contract or paid to the Government as directed by the Contracting Officer. The foregoing provisions shall apply to scrap from Government property; provided, however, that the Contracting Officer may authorize or direct the contractor to omit from such inventory schedules any scrap consisting of faulty castings or forgings or of cutting and processing waste, such as chips, cuttings, borings, turnings, short ends, circles, trimmings, clippings, and remnants, and to dispose of such scrap in accordance with the contractor's normal practice and account for it as a part of general overhead or other reimbursable costs in accordance with the contractor's established accounting procedures.

(j) Abandonment and restoration of contractor premises. Unless otherwise provided herein, the Government

(1) May abandon any Government property in place, at which time all obligations of the Government regarding such abandoned property shall cease; and

(2) Has no obligation to restore or rehabilitate the contractor's premises under any circumstances (e.g., abandonment, disposition upon completion of need, or contract completion). However, if the Government-furnished property (listed in the Schedule or specifications) is withdrawn or is unsuitable for the intended use, or if other Government property is substituted, then the equitable adjustment under paragraph (h) of this clause may properly include restoration or rehabilitation costs.

(k) Communications. All communications under this clause shall be in writing.

(l) Overseas contracts. If this contract is to be performed outside the United States of America, its territories, or possessions, the words "Government" and "Government-furnished" (wherever they appear in this clause) shall be construed as "United States Government" and "United States Government-furnished," respectively.

(End of clause)

### **I.13 ORDERING FAR 52.216-18 (OCT 1995)**

(a) Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued from contract award through contract completion.

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

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

### **I.14 ORDER LIMITATIONS FAR 52.216-19 (OCT 1995)**

(a) Minimum order. When the Government requires supplies or services covered by this contract in an amount of less than \$1 million, the Government is not obligated to purchase, nor is the contractor obligated to furnish, those supplies or services under the contract.

(b) Maximum order. The contractor is not obligated to honor:

- (1) Any order for a single item in excess of \$27 million;
- (2) Any order for a combination of items in excess of \$27 million; or
- (3) A series of orders from the same ordering office within 60 days that together call for quantities exceeding the limitation in subparagraph (b)(1) or (2) of this section.

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

(d) Notwithstanding paragraphs (b) and (c) of this section, the contractor shall honor any order exceeding the maximum order limitations in paragraph (b), unless that order (or orders) is returned to the ordering office within 5 days after issuance, with written notice stating the contractor's intent not to provide the supplies or services called for and the reasons. Upon receiving this notice, the Government may acquire the supplies or services from another source.

(End of clause)

**I.15 INDEFINITE QUANTITY FAR 52.216-22 (OCT 1995)**

Note: This clause refers to work described in Table J-1 in Attachment J-1, SOW identified as IDIQ.

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

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

(c) Except for any limitations on quantities in the Order Limitations clause or in the Schedule, there is no limit on the number of orders that may be issued. The Government

may issue orders requiring delivery to multiple destinations or performance at multiple locations.

(d) Any order issued during the effective period of this contract and not completed within that period shall be completed by the contractor within the time specified in the order. The contract shall govern the contractor's and Government's rights and obligations with respect to that order to the same extent as if the order were completed during the contract's effective period; provided, that the contractor shall not be required to make any deliveries under this contract after contract expiration, including any extensions provided under FAR Clauses 52.217-8 and 52.217-9.

(End of clause)

**I.16. STATEMENT OF EQUIVALENT RATES FOR FEDERAL HIRES (FAR 52.222-42) (MAY 1989)**

In compliance with the Service Contract Act of 1965, as amended, and the regulations of the Secretary of Labor (29 CFR part 4), this clause identifies the classes of service employees expected to be employed under the contract and states the wages and fringe benefits payable to each if they were employed by the contracting agency subject to the provisions of 5 U.S.C. 5341 or 5332.

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

<b>Employee Class</b>	<b>Monetary Wage-Fringe Benefits</b>
Computer Programmer, II	GS-7 \$16.50
Drafter, I	GS-3 \$10.61
Drafter, II	GS-4 \$11.91
Secretary, I	GS-4 \$11.91
Secretary, II	GS-5 \$13.32
Secretary, III	GS-6 \$14.85
Taxi Driver	GS-5 \$13.98
Engineering Technician, I	GS-3 \$10.61
Engineering Technician, II	GS-4 \$11.91
Engineering Technician, III	GS-5 \$13.32
Engineering Technician, IV	GS-7 \$16.50

[END OF SECTION]

		SOW		
		CF	LOE	IDIQ
<b>Table J-1</b>				
<b>Mission Integration Contract Methods</b>				
SOW	TITLE	CF	LOE	IDIQ
1.0	MANAGEMENT & INTEGRATION	X		
1.1	PROGRAM MANAGEMENT (Except 1.1.2)	X		
1.1.2	INTERNAL/EXTERNAL PROGRAM REVIEW SUPPORT		X	
1.2	BUSINESS MANAGEMENT	X		
1.3	CONFIGURATION MANAGEMENT/DATA INTEGRATION	X		
1.4	PROGRAM INFORMATION TECHNOLOGY	X		
1.5	INTERNATIONAL INTEGRATION			
1.5.1	RUSSIAN LANGUAGE & LOGISTICS SERVICES			
1.5.1.1	TRANSLATION			X
1.5.1.2	INTERPRETATION			X
1.5.1.3	RUSSIAN AND ENGLISH LANGUAGE TRAINING			
1.5.1.3.1	JSC LANGUAGE EDUCATION CENTER	X		
1.5.1.3.2	CREW LANGUAGE TRAINING			X
1.5.1.4	LOGISTICS (except 1.5.1.4.1)		X	
1.5.1.4.1	TRANSPORTATION SERVICES			X
1.5.2	INTERNATIONAL MISSION INTEGRATION			
1.5.2.1	INTERNATIONAL SHIPPING COORDINATION	X		
1.5.2.3	ISS HAM RADIO PROJECT	X		
1.5.2.4	JOINT CARGO CERTIFICATION TEAM		X	
1.5.2.5	EXPORT MANAGEMENT	X		
1.6	HUMAN SPACE FLIGHT COLLABORATION		X	
4.0	OPERATIONS			
4.1	MISSION INTEGRATION			
4.1.1	MISSION REQUIREMENTS & PLANNING			
4.1.1.1	INCREMENT/STAGE INTEGRATION (Except 4.1.1.1.5 & 4.1.1.1.9)	X		
4.1.1.1.5	INCREMENT ENGINEER TASKS		X	
4.1.1.1.9	STATION TACTICAL INCREMENT CONSUMABLES AND RESOURCE MANAGEMENT		X	
4.1.1.2	LAUNCH PACKAGE INTEGRATION (Except 4.1.1.2.8)		X	
4.1.1.2.8	LAUNCH PACKAGE SUPPORT FUNCTIONS	X		
4.1.1.3	MANIFEST (Except 4.1.1.3.3 and 4.1.1.3.4)	X		
4.1.1.3.3	TACTICAL/INCREMENT MANIFEST		X	
4.1.1.3.4	DATABASE CAPABILITY			X
4.1.1.4	IMS		X	
4.1.1.5	CREW PROVISIONING/MISSION HABITABILITY	X		
4.1.1.5.1	CREW PROVISIONING	X		
4.1.1.6	IMAGERY (Except 4.1.1.6.4)	X		
4.1.1.6.4	SPECIAL REQUIREMENTS AND TECHNOLOGY ADVANCEMENT		X	
4.1.1.7	PROGRAM OPERATIONS INTEGRATION (Except 4.1.1.7.5)	X		
4.1.1.7.5	SPECIAL PROJECTS & STUDIES		X	
4.1.1.9	ON-ORBIT STOWAGE CAPABILITIES & CONFIGURATION (Except 4.1.1.9.2)	X		
4.1.1.9.2	TACTICAL INTERNAL AND EXTERNAL VOLUME CONFIGURATION	X		
6.0	SAFETY AND MISSION ASSURANCE	X		
6.1	S&MA MANAGEMENT	X		
6.2	Reserved	X		
6.3	PROGRAM RISK	X		
6.4	Reserved	X		

*Section J-1*  
**STATEMENT OF WORK**

**1.0 MANAGEMENT AND INTEGRATION**

The Mission Integration contractor shall provide all resources and skills required to perform the services and deliver the products described in this Statement of Work (SOW), contract terms and conditions, applicable documents, Data Requirements Description (DRD's), and other sections of this contract. All DRD's are firm contractual obligation of the contract.

**1.1 PROGRAM MANAGEMENT (CF)**

**1.1.1 Program Management and Administration**

The contractor shall conduct program management and administration, including risk management, necessary to develop and deliver the required International Space Station Program (ISSP) products and services as defined within this contract. The contractor shall provide for the planning, organization, control, and reporting of all activities required by this contract. The contractor shall assure accomplishment of all outcomes and deliverable products required by this contract.

1.1.1.1 The contractor shall develop, update, and implement a Mission Integration Program Management Plan in accordance with Mission Integration Program Management Plan (DRD B-PM-01). The contractor shall describe in the plan the contractor's management structure that fully and optimally integrates all related plans and systems including those of teamed businesses, major subcontractors and vendors. The contractor shall address in the plan the contractor's management of all systems, functions, and data requirements described in this SOW. In addition, the contractor shall develop, update and implement a Mission Integration Transition Plan in accordance with Mission Integration Transition Plan (DRD B-PM-03). The contractor shall describe in the plan the contractor's management approach that fully and optimally transitions the systems functions and data requirements described in this statement of work from the incumbent contractor. The contractor shall develop and deliver an Organization Chart (DRD B-PM-05) that identifies management reporting structure and all personnel by location. The contractor shall develop and deliver a Certificate of Flight Readiness Implementation Plan (DRD B-PM-06) to define an approach and implementation plan for CoFR endorsement.

The contractor shall provide a MIC Internet portal as a foundation for communication and collaboration of MIC management functions. The implementation shall capture contract management and technical content, such as plans, procedures, ACAs, metrics, calendars, technical forums, contract news, and contract deliverables. Each user shall be provided an ID and password and shall be provided to MIC employees, NASA civil servants, and associate contractors to access MIC products, schedules, and data. Appropriate electronic links from the MIC Internet portal to the ISS program MIS shall be established to provide timely and accurate source data to key NASA managers.

1.1.1.2 The contractor shall conduct monthly and quarterly Performance Management Reviews (PMR's) with the International Space Station Program Office (ISSPO), in accordance with Integrated Management Review Products (DRD B-PM-02) for the work performed on this contract. The reviews shall provide the ISSP with insight into the contractor's, subcontractors', and vendors' overall technical, schedule, and cost performance and status. Metrics that effectively indicate the level of success and quality in the execution of contract requirements and the status of the contractor's performance against the performance standards contained within this SOW and elsewhere in this contract shall be defined through the Performance Assessment Plan and Performance Assessment Reports (DRD B-PM-04) and presented at the PMR's. PMR presentations shall depict performance measurement, quality, accomplishments, issues and corrective actions, and related company financial status, including rates and

any other data necessary to status the ISSP. The metrics shall be developed by the contractor, with linkage to program-level metrics in the ISSP Management Information System (MIS) (reference 1.1.1.3 MIS Data Requirements).

The contractor shall provide a Contract Close-Out Plan in accordance with Contract Close-Out Plan (DRD B-PR-01).

Contractor shall adapt best practices for measuring and increasing customer satisfaction by including a customer feedback form with the product and service they produce or provide allowing continuing improvement efforts to focus on the specific areas of customer concern. Corrective Action Reports (CAR) shall be initiated for each questionnaire that does not meet a mutually agreed to quality standard. Metrics shall be recorded into the Barrios Performance Measurement System for NASA review.

#### **1.1.1.3 MIS Data Requirements**

ISS MIS is a web-based repository designed to keep ISSP management and personnel aware of the most current ISSP technical, financial, workforce, schedules, and operational information, including issues and risks. MIS links ISSP core business issues and goals with the technical aspects of the Program. To accomplish this, ISSP managers will identify contractor provided financial planning, costs, workforce data, schedules, metrics, technical performance and other contractor provided information to be linked to the MIS. The contractor provided information will be a subset of data that is required by the MIC contractor in the existing DRD's. NASA will identify and the contractor shall link to the MIS, shall identify and implement the mechanisms for linking this data to the MIS; shall identify and implement changes to the DRDs with contractor defined formats; shall provide compatibility to the MIS; and shall maintain the DRDs electronically in such a manner as to support electronic linkages to the MIS.

#### **1.1.1.4 Integrated Reporting**

In addition to the collection and reporting of contractor data, the contractor shall assist in development of integrated contractor and NASA report to be posted on the MIO web page and delivered to the ISS Program Manager and MIS on a monthly basis. Typical data includes reporting of objectives for current ISS crew, ISS flight readiness for upcoming missions, and on-orbit resource current and projected statuses.

#### **1.1.2 Internal/External Program Review Support (LOE)**

The contractor shall develop briefing materials and analyses for ISS meetings with various internal and external review groups. These groups include the Aerospace Safety Advisory Panel (ASAP), Space Station Utilization Advisory Subcommittee (SSUAS), Stafford/Anfimov committee, Inspector General/General Accounting Office (IG/GAO), Space Flight Advisory Committee (SFAC), ISS Management and Cost Evaluation/NASA Advisory Council (IMCE/NAC), Independent Implementation Review (IIR), and cost assessments teams. The contractor shall prepare and present various topics, such as ISSP technical, cost, and schedule status, specific safety or risk issues, Research and Development (R&D) issues, and responses to external inquiries.

### **1.2 BUSINESS MANAGEMENT (CF)**

#### **1.2.1 Reserved**

#### **1.2.2 Reserved**

### **1.2.3 Resources Management**

As part of the program management for this contract, including risk management, the contractor shall perform the following tasks in support of resources management:

1.2.3.1 The contractor shall develop, implement, maintain, and update a Contract Financial System which discretely tracks resources by Unique Project Number (UPN) source and contract Work Breakdown Structure (WBS) and elements of cost including labor, overhead, other direct costs, (i.e. travel and subcontracts) and indirect costs. The contractor's financial planning system shall support the Government budget process (i.e. Program Operating Plan (POP) and budget calls), and to support special requests for budget impacts. The ISSPO will, in accordance with the budget or special request guidelines and reporting format, specify the format and content of the contractor's inputs and supporting rationale. The contractor shall provide cost reporting in accordance with NF533 M/Q Cost Reporting (DRD B-PC-01).

1.2.3.2 The contractor shall develop, implement, and maintain a Performance Measurement System (PMS) and provide a modified Cost Performance Reports (CPR) in accordance with Cost Performance Report and CPR Earned Value Methodology Report (DRD's B-PC-02 and B-PC-05). The PMS shall provide appropriate management visibility into all aspects of contractor, interdivisional, subcontractor, and vender activities, including support to ISS operations, maintenance/sustaining engineering, and R&D activities. It shall be integrated and reconcilable with other required management systems and reporting requirements. Final negotiated CPR variance explanations and corrective action reporting levels and thresholds shall be consistent with ISS Performance Measurement System reporting requirements which are described in DRD B-PC-02.

A summary of the PMS report shall be provided in the monthly PMR. Technical issues, accomplishments, analysis of cost and schedule performance, and corrective actions in problem areas shall be provided within this report.

1.2.3.3 The contractor shall develop and provide Workforce Reports in accordance with (DRD B-PC-03) to show organization, geographical breakdown, and on-site versus off-site workforce allocations.

1.2.3.4 The contractor shall develop and provide a contract WBS and Dictionary, in accordance with the Work Breakdown Structure and Dictionary (DRD B-PC-04). The WBS and Dictionary shall indicate the mapping of the contractor WBS to the contract SOW WBS and the ISSP WBS (SSP 50659) at the lowest levels of the ISSP WBS. The contract SOW WBS shall serve as the framework for contract planning, budgeting, financial reporting, schedule resource loading, and schedule status reporting to the ISSPO. Major elements of work provided by subcontractors shall also be identified in the contract WBS.

### **1.2.4 Reserved**

### **1.2.5 Scheduling**

1.2.5.1 The contractor shall assess top-level and develop and maintain logically linked lower level schedules with selected resource loaded activities, in accordance with Integrated MIO Schedules and Integrated Mission Integrated Resource Loaded Schedules (DRD's B-PC-06 and B-PC-07) as defined in the Integrated Schedules Planning Process Document. Resource loaded schedules shall provide earned value tracking at the MIC Master WBS Reporting Level at a minimum. MIC team and office schedules shall as a minimum be developed and maintained to provide critical path linkage to the Level I and Level II program milestones and will identify activities which are dependent upon other ISSP participants outside of this contract.

1.2.5.2 The contractor shall update top-level schedule inputs and lower level schedules on a daily/weekly basis. The contractor shall provide monthly updates, analysis and reports for all tasks, except as otherwise stated. The contractor shall develop and maintain special purpose schedule data packages, which include both detailed and summary level schedules and integrated cost/schedule analysis products; analysis includes identification of potential schedule impacts with interfacing organizations/contracts. (Example: daily and monthly ISSP special purpose schedules)

1.2.5.3 The contractor shall provide twice a month schedule status inputs external to this contract. The contractor shall provide schedule analysis to support schedule issues resolution, schedule status, and special schedule agenda topics to the Integrated Program Schedule Panel. As required, the contractor shall provide monthly status inputs to NASA institutional organizations and to the Space Shuttle Program.

1.2.5.4 The contractor's schedule tool shall interface with the existing ISSP database. The contractor shall utilize an equivalent contractor data base to maintain status of schedules. The contractor shall evaluate MIC milestones in the ISSP schedule database as appropriate to determine data delinquencies and work with co-owners of the milestone to address/resolve problems and data conflicts.

1.2.5.5 Integrated Risk and Schedule Analysis: The contractor shall perform schedule risk assessments that can be integrated into the overall Program schedule risk assessment, in order to address overall schedule risk status.

1.2.5.6 The contractor shall provide summary schedules to support NASA office managers for example Mission Integration and Operations Office, Cargo Integration Office, etc. as defined in Integrated Mission Integrated Office Schedules DRD B-PC-06.

### **1.3 CONFIGURATION MANAGEMENT/DATA INTEGRATION (CF)**

#### **1.3.1 Configuration Management (CM)**

The contractor shall implement, and administer configuration management operations as specified in this contract and in accordance with the ISSP Configuration Management Requirements (SSP 41170), Documentation Standards & Guidelines (SSP 50010), the Configuration Management Handbook (SSP 50123), and the Data Management Handbook (SSP 50172). Additionally, the contractor shall be responsible for contract specific CM functions as described in each of the functional CM areas described below.

##### **1.3.1.1 Management and Administration**

The contractor shall develop and manage the ISSP CM/Data Management (DM) requirements on the contract in accordance with the contractor's CM Plan (DRD B-CM-01). The contractor shall develop, status, and maintain CM metrics that effectively indicate the level of success.

##### **1.3.1.2 Configuration Status Accounting and Verification**

**Reserved**

##### **1.3.1.3 Configuration Control / Change Management**

The contractor shall process changes specific to the Mission Integration (MI) contract in accordance with SSP 50123. The contractor shall review and provide evaluation of cost, schedule, and technical impacts to Program changes originating from outside the MI contract to determine if those changes have potential impacts to the MI contract in accordance with SSP 50123.

The contractor shall input and validate data relative to MI Changes and Directives entered in the Configuration Status Management Operations System (COSMOS) database to assign Change Request (CR) numbers, track and status changes, and provide accurate information, reports, and monthly metrics.

### **1.3.1.4 Data Management**

The Mission Integration contractor shall perform the following Data Management activities specific to the MI contract:

1.3.1.4.1 The contractor shall provide an Engineering Release Unit (ERU) for the release of baseline documentation authorized by the Mission Integration and Operations Control Board (MIOCB), the MIOCB sub-boards and panels, the Space Station Control Board (SSCB) and/or the Space Station Program Control Board (SSPCB) as defined in CM Requirements, SSP 41170 and SSP 50172. This shall include interface with the PI&C Contract Engineering Release Unit.

1.3.1.4.2 The contractor shall operate a Configuration Management Receipt Desk (CMRD) as defined in CM Requirements, SSP 41170 and SSP 50172. The contractor CMRD shall interface with the ISS Program CMRD and the ISS Vehicle Segment Sustaining Contract CMRDs.

1.3.1.4.3 The contractor shall provide Document Quality Assurance (DQA) for all NASA controlled Program documentation identified under this contract in accordance with SSP 50010 and SSP 50172.

### **1.3.2 Program Data Integration**

The contractor shall support the Program Data Integration Team in identifying and documenting data workflow processes associated with this contract that are impacts to work performance and cross other contractual interfaces. This includes support to data related meetings to share information on MIC data interfaces, responding to questions either written or verbal and providing evaluations and recommendations for potential process improvements.

## **1.4 PROGRAM INFORMATION TECHNOLOGY (CF)**

The ISS contract strategy decentralizes the implementation of Information Technology (IT) except where program integration and control is necessary for appropriate program management and communication. The PI&C contractor will provide IT infrastructure for use by ISS participants to support the mission of the ISSP. The other contracts within the ISS contract strategy will provide the IT necessary to perform the requirements to meet the requirement of their respective contracts; since their contract intent is to not specifically contract for generalized IT products and services. The contractor may choose to utilize the ISSP IT infrastructure provided by PI&C when common products and services provide for increase supportability, promotes commonality, or cost efficiencies. Existing IT infrastructure is documented in the Information Systems Plan (SSP 50013).

### **1.4.1 IT Management**

1.4.1.1 The contractor shall provide the IT necessary to meet the ISSP IT requirements, as defined in this contract, in accordance with Information Systems Plan (SSP 50013). NASA will provide standard software loads for all government provided desks (Reference JSC Standard Load Configuration for current software provided). The contractor is responsible for training of personnel in use of standard and unique IT skills.

1.4.1.2 The contractor shall develop and implement the IT Management Plan (DRD B-IT-01) for reportable IT.

1.4.1.3 The contractor shall report all IT delivered or direct costed to this contract by developing an implementing an IT Capital Investment Plan and associated reports in accordance with the ISS Capital Investment Planning document, (SSP-50222).

1.4.1.4 The contractor shall develop and implement an IT Security Plan in accordance with DRD B-IT-02.

1.4.1.5 The contractor shall implement an architecture that enables bi-directional digital data sharing with government representatives including transmission of information across firewalls and the required security access to support defined requirements. If the contractor implements Public Key Infrastructure, the contractor system shall be interoperable with the NASA Public Key Infrastructure system.

1.4.1.6 The contractor shall adhere to JSC IT website policies including NASA JSC Web Policy, JSC Policy on the Registration of Websites, and Section 508 of the Rehabilitation Act of 1974.

#### 1.4.2 Software Tool Development and Operations

1.4.2 GFD tools available for use on this contract are identified in Appendix D. Any modifications to these GFD tools shall be sustained employing a methodology which demonstrates consistency with the Software Engineering Institute (SEI) Level 3 Capability Maturity Model (CMM), or other comparable industry standard. CMMI certification is not required.

1.4.2.1 The International Travel Database (ITD) and the Mission Integration Database Application System (MIDAS) are provided as Government Furnished Data (GFD) to be utilized and sustained by the contractor in fulfilling the contract requirements and for use by the ISSP. Additional requirements for MIDAS are defined in section 4.1.1.3.4.

1.4.2.2 The contractor shall support the development and maintenance of other PC-based tools to accomplish the assessments and analyses defined in the SOW. Existing tools may be used or new tools may be developed at the contractor's discretion. Examples include the Station Tactical Resource Operations Management tool, stowage integration tools and Waste Management Assessment tools.

1.4.2.3 Other applications required for use in performing the requirements of this SOW but sustained outside of this contract are defined in Appendix I.

#### 1.5 INTERNATIONAL INTEGRATION

The contractor shall adhere to the program policy, requirements, and processes defined in the following documents:

- a) Station Program Implementation Plan (SPIP) Volume 1: Station Program Management Plan (SSP 50200-01)
- b) International Space Station Program Certificate of Flight Readiness Process Document (SSP 50108)

##### 1.5.1 Russian Language and Logistics Services

a) These services provide translation, interpretation, language training, and logistics services required by the ISSP. This work is directly related to mission integration and operations functions being carried out by NASA and Russia's Federal Space Agency (Roscosmos), including their respective contractors. It is critical that all translation and interpretation associated with flight operations be properly performed in order to ensure the safety of the flight crew and the success of the mission. This contract provides for the communication and logistics services through which NASA and the Roscosmos integrate their portions of

the ISSP, including support to R&D activities. Languages other than English and Russian are not covered under this contract.

- b) The services defined in this SOW are performed in various locations in the U.S., Russia, and other countries as specified per the Meeting Support Request Form (MSRF) (Appendix H, Form 1) and approved by the COTR or designee. The primary location for most contractor activity in the U.S. is the JSC. Other major locations include the KSC and the MSFC. The primary locations for most contractor activity in Russia include the U.S. Embassy in Moscow, Mission Control Center in Korolev, Gagarin Cosmonaut Training Center (GCTC), (also referred to as Star City, Volga Complex), launch complex in Baikonur, Roscosmos office buildings in Moscow, the Institute of Bio-Medical Problems (IBMP), and Roscosmos contractor facilities (Rocket Space Corporation–Energia (RSC-E), Khrunichev, etc).
- c) The contractor interpretation and translation services shall accurately and consistently use ordinary, scientific, technical, and agency terminology (requires ISS Lexicon adherence). The contractor shall implement ISS familiarization for all interpreters and translators, including freelance support. The contractor shall ensure minimal context changes or content omissions from interpretations and translations and shall have a target objective of zero errors. An error is defined to be non-standard English usage, incorrectly interpreted or translated information, and omitted text that results in a loss of information. For safety and mission critical work, zero errors are required.
- d) The contractor shall attach a NASA Service Evaluation Form (SEF) (Appendix H, Form 2) to each translation, training and interpretation event in order for NASA to evaluate the service provided.
- e) The contractor shall provide 24/7 Bilingual Customer Support in the US and Russia to ensure immediate response to emergency and after hours work requests.

#### 1.5.1.1 Translation (IDIQ)

The contractor shall translate all Russian to English documentation and NASA approved limited English to Russian translation required to conduct vehicle integration and development, ISS operations, maintenance/sustaining engineering, and R&D activities. This includes support to biomedical research, physics experiments, fluid dynamics research, earth sciences research, and astronomical research. The contractor also translates Mission Control Center (MCC) documents. This has proven to be critical to the successful implementation of U.S. and IP R&D onboard the ISS. A translation page consists of 250 words of the target document.

- a) The contractor shall perform Russian to English and NASA approved limited English to Russian document translations using the NASA Translation Request Form (TRF), (Appendix H, Form 3) or electronic equivalent. Document translation shall include technical documents, engineering drawings, written agreements and protocols, formal and informal correspondence, and other written information. The contractor shall update and maintain the ISS Lexicon as required.

Special circumstances will dictate that some translations be provided in real-time or short turn around time (hours). The Government will stipulate the required completion time of the translation work and negotiate impacts.

- b) The contractor shall provide continuous support translations to support key operational tasks. Translation services shall be required on a 24-hour per day basis. The continuous support translations shall be performed by the continuous support interpreters (reference 1.5.1.2 f) and will not require a TRF. Continuous support translations include the tasks defined in section 1.5.1.1 f) items 1) and 2). A continuous support unit is defined as one hour of support to the applicable continuous support tasks.
- c) The contractor shall establish and maintain an electronic configuration control system for all original source material and the translated products with NASA access for viewing, searching and retrieval using key words, subject, title, and date of all non-sensitive/confidential documents translated. Limited access for sensitive/confidential translation shall be provided in accordance with the NASA TRF identification.

This system shall ensure traceability and easy access for all documents and changes of completed work. When a translation task has been completed and delivered to NASA, the resulting document(s) shall be under configuration control by the contractor. Any

subsequent changes shall be delivered to NASA.

d) The contractor shall produce documents in both English and Russian using software and fonts commonly used by NASA and Russia's Federal Space Agency. These documents can include text and graphic representations. The contractor shall also produce meeting presentation materials or hard copies of electronic documents, as requested via the NASA TRF.

e) The contractor shall have the capability to transmit and receive documentation electronically, to and from various locations in the U.S. and in Russia. The electronic mail system used by the contractor must be compatible with the system used by NASA. Industry standard transmission times for fax and e-mail shall be utilized. NASA will provide E1/T1 standard interface to/from the Moscow region. A subject line, which is representative of the document translated, shall be included with the response.

f) Safety and mission critical translation tasks are a subset of the translation work to be performed by the contractor. Tasks that are non-continuous safety and mission critical tasks will be identified by NASA on the TRF. Continuity of contractor personnel performing these services is recommended. Safety and Mission critical tasks include but are not limited to the following:

1) Mission Control Translations

Contractor personnel performing this service shall provide daily translation in support of Mission Control Centers. Contractors supporting real-time mission operations shall be certified and be proficient in both interpretation and translation. NASA and the contractor will jointly administer certification training in accordance with the Interpreter Training and Certification Guide (JSC-36455). NASA will retain final approval of certification upon satisfactory completion of the training.

2) Data File Translations

Contractor personnel performing this service shall provide daily translation in support of mission planning and procedures development. This service is critical due to the unique terminology, formats, and computer systems used in Operation Data File (ODF), Flight Data File (FDF) and Flight Rule development. NASA and the contractor will jointly administer certification training in accordance with the Interpreter Training and Certification Guide (JSC-36455). Contractors supporting ODF translations shall be certified. NASA will retain final approval of certification upon satisfactory completion of the training.

3) Spacecraft Software Related Translations

Services in this area involve using terminologies in the areas of ADA software, data buses and instrumentation, software development, test environments, and general command and data handling.

g) The contractor shall:

- 1) Provide an ISO-9001: 2000 certified workflow process to provide translations, editing, quality assurance, and configuration control.
- 2) Provide an additional level of QA for safety and mission critical translations through the use of Subject Matter Experts.

- 3) Utilize a Glossary Browser to augment the ISS Lexicon for ensuring the most accurate terminology is used in translated products.
- 4) Minimize dependence on overtime pay and freelancers to respond to short notice requests and surges by sharing the mission operations translation workload between Houston and the MCC-Moscow and utilizing interpreter resources when available/appropriate.
- 5) Screen all translations for duplicate translation requests and notify NASA in order to eliminate redundant work.
- 6) Coordinate deadlines with NASA COTR or designee for lower priority/non time critical translations when completion of time critical translations would result in overtime.

#### 1.5.1.2 Interpretation (IDIQ)

The contractor shall interpret Russian to English and English to Russian conversations, required to conduct vehicle integration and development, operations, maintenance/sustaining engineering, and R&D on the ISS. This includes support to biomedical research, physics experiments, fluid dynamics research, earth sciences research, and astronomical research. The contractor also interprets Mission Control Center commands. This has proven to be critical to the successful implementation of U.S. and IP R&D onboard the ISS. One meeting unit equals one hour of interpretation service.

- a) Interpretation shall flow smoothly in a professional manner without compromising accuracy and safety and without interruptions to the event for which interpretation service is being provided. The contractor shall be knowledgeable in technical areas to be interpreted prior to the meeting event to minimize disruptive questioning. All interpreters under this contract shall have, as a minimum, Foreign Service National (FSN) 210-8 Translator Series Embassy standard skill level. The contractor shall provide inputs and recommendations to the ISSP Lexicon as required.
- b) Interpretation shall be provided in scheduled and impromptu meeting events (telecons, meetings, and other types of business gatherings). Meeting events can vary from a short discussion between individuals up to a multiple-week event with numerous participants and many simultaneous agenda activities.
- c) The contractor shall provide Russian to English and English to Russian interpretation, including simultaneous interpretation when required via a Meeting Support Request Form (MSRF) (Appendix H, Form 1) or electronic equivalent. The contractor shall deliver services measured by meeting units. A meeting unit is defined as a meeting hour for which the interpretation services of one individual are provided.
- d) The contractor shall provide continuous support interpretation for key operational positions. Interpretation services shall be required on a 24-hour per day basis for specified positions. The continuous support interpreters will not require a MSRF. Continuous support interpretation include but are not limited to the tasks defined in section 1.5.1.1.f) items 1) and 2) and 1.5.1.2.f) items 1), 2) and 5g).
- e) The contractor shall use MCC-M interpreters to support TIMs in Moscow as directed by NASA.
- f) Safety and mission critical interpretation tasks are a subset of the interpretation work to be performed by the contractor. Tasks that are non-continuous safety and mission critical tasks will be identified by NASA on the MSRF. Continuity of contractor

personnel performing these services is recommended. Safety and Mission critical tasks include but are not limited to the following:

1) Mission Control Interpretation

Interpretations associated with flight operations are critical to the safety of the flight crew and to the success of the mission. Each employee supporting real-time mission operations shall be certified and be proficient in both interpretation and translation. NASA will define specific interpretation tasks which will include but not be limited to Space to Ground voice loops, Flight Director, CAPCOM support and ISSP Mission Management Team (IMMT). NASA and the contractor will jointly administer certification training in accordance with the Interpreter Training and Certification Guide (JSC 36455). NASA will retain final approval of certification upon satisfactory completion of the training.

2) Consultant Team Interpreters

The contractor shall provide certified interpretation for consultant teams the entire time they are present in the respective MCC's. NASA and the contractor will jointly administer certification training in accordance with the Interpreter Training and Certification Guide (JSC 36455). NASA will retain final approval of certification upon satisfactory completion of the training.

3) Spacecraft Software Related Interpretation

Interpretation support that is directly related to development of spacecraft software is considered a safety-critical task. This task requires extensive use of ADA software terminology. In addition, extensive use of data bus, instrumentation, software development, test environments, and general command and data handling terminology is required.

4) Science Related Interpretations

Interpretation support related to in-flight and ground-based R&D is considered a safety-critical task. This support includes interpretation during the planning, training, and operation of experiments involving human subjects or human operators.

5) Crew Training

Interpreters supporting certain crew training tasks also require training and certification in accordance with the Interpreter Training and Certification Guide (JSC-36455).

g) Additional duties shall be performed by the continuous support contractor in MCC-M when HSG personnel are not present including facilitation of discussions, answering the phone, voice-loop calls between control centers, document retrieval, translation and distribution of documentation, and peer QA of MCC-M translations.

**1.5.1.3 Russian and English Language Training**

- a) The contractor shall follow the NASA approved language-training curriculum. The contractor shall deliver Russian and English language training at beginner, intermediate, and advanced levels. NASA shall provide the training requirements defined in terms of classroom hours and objectives. The contractor shall develop and deliver Russian and English language supporting lesson plans and training curricula, to effectively train and prepare employees for ISS and Space Shuttle flight, operations, maintenance/sustaining engineering, and R&D as described in Language Training Curricula for NASA/JSC Contractor Programs (DRD B-II-01). The training shall consist primarily of group and individual tutorial classes. The contractor shall provide copies of training materials such as books and handouts as requested by NASA and as needed by the language-training instructors. The contractor shall utilize available ISS and STS mission audio and video to create learning materials for language training.
- b) The contractor shall provide Russian and English as a Second Language (ESL) training primarily at JSC. Russian language training shall also be provided at the Volga apartments and NASA offices in Moscow, at the TsUP in Korolev, and at Star City as described in Language Training Curricula for NASA/JSC Contractor Programs (DRD B-II-01).
- c) The contractor shall make available a language training materials library for Russian and English students and instructors. Existing materials will be provided per SOW Section J-1, Appendix D. Supplemental materials shall be developed and provided by the contractor on an as needed basis. Language training program reports and student records including attendance rosters and course evaluations shall be provided to NASA as described in Language Training Shared Materials "File Cabinet" (DRD B-II-02). The contractor shall provide a JLEC website containing program information and instructional materials allowing 24/7 access and also reducing the need for the production of hardcopy training materials..
- d) One teaching unit equals one hour of language training.

#### 1.5.1.3.1 JSC Language Education Center (CF)

The contractor shall provide clerical and administrative services to the JSC Language Education Center (JLEC) for center wide and crew member language training. These services shall include: the tracking of library materials and new resources; the coordination, production and distribution with NASA of the JLEC Newsletter; updating and providing assistance on the JLEC web page; maintaining the classroom reservation book; coordinating scheduling of course sessions; maintaining student/ instructor records as described in Training Report Deliverables and Student Records (DRD B-II-03 and DRD B-II-04); maintaining the Russian Information Bulletin Boards. Crew member records shall be entered and updated using the JSC Intranet based database called Crew Language Training Metrics.

#### 1.5.1.3.2 Crew Language Training (IDIQ)

- a) The Contractor shall integrate English and Russian language training with instructors at the Gagarin Cosmonaut Training Center (GCTC) in Star City, Russia; RSC-Energia in Korolev, Russia; and JSC in Houston, Texas, thereby enabling a seamless process independent of location through Language Program Plan (Curricula) for integration with colleagues in Russia (DRD B-II-05).
- b) The Contractor shall provide language training for astronauts and limited numbers of other personnel in Houston and Russia. The Contractor shall also administer and implement English language training for cosmonauts, and other individuals (e.g. Flight Controllers) approved by COTR or designee, under curricula developed by the Contractor per NASA guidelines. The Contractor shall also coordinate training plans, materials, curricula, schedules, and other details with Russian and English instructors, and provide consistent training for astronauts, cosmonauts, and other named personnel.
- c) The language proficiency skills of astronaut and cosmonaut students shall be assessed through OPIs (at NASA's request) or through in-house evaluation.
- d) The contractor shall develop new language training materials as the ISS build out continues (e.g., robotics relevant terminology and language usage materials are developed and used in the Russian and English language training programs).
- e) The contractor shall use Near Immersion language training techniques with select crewmembers and other personnel approved by the COTR or designee in accordance with the Russian Language immersion Program Guide.

#### 1.5.1.4 Logistics

Logistics services shall be responsive, uninterrupted, safe and timely.

#### **1.5.1.4.1 Transportation Services (IDIQ)**

The contractor shall provide ground transportation and chauffeur services for U.S. and Russian personnel as required. The contractor shall also pick up, receive, and deliver documents for conducting ISS business approved by the COTR or designee. Transportation services shall be provided on time and in a manner that ensures the safety of the passengers. One transportation unit equals one driving hour.

a) Nominal transportation shall include: airport pickup and drop-off transportation for U.S. travelers in Russia, long-term U.S. representatives in Russia, and Russian travelers in the U.S. The contractor shall also provide transportation between hotels and meeting locations for U.S. travelers in Russia and for Russian travelers in the U.S.

b) The contractor shall provide chauffeur services for Government furnished vehicles in the Moscow region. Chauffeurs for HSFP-R shall have U. S. Embassy access clearances and, when required, approval from the Star City Russian military for access to facilities to Star City and to the GCTC.

#### **1.5.1.4.2 Meeting Services (LOE)**

The contractor shall be required by MSRF (Appendix H, Form 1) to coordinate meeting schedules, prepare agendas, protocols and notes and distribute meeting information.

#### **1.5.1.4.3 Travel Services (LOE)**

The contractor shall coordinate and support select official travel as directed by COTR or designee. This includes, but is not limited to, disseminating important travel information (for example, the Arrival Notification Form (ANF) (J-1, Appendix H, Form 5) and traveler matrix), coordinating travel plans, preparing travel notifications, and coordinating policy or protocol matters.

The Contractor shall provide services in obtaining U.S. and Russian visas and others as required. The contractor shall coordinate directly with the NASA HQ's Office of External Relations regarding all Russian and American visitor requests. The contractor shall maintain visitor files of both Russian delegations to the United States and American delegations to Russia, contribute to the weekly visitors list for the NASA Moscow Liaison Office (NMLO), and communicate with Rosaviakosmos on questions concerning visas. Other contractor duties shall include preparation and assurance that visa applications and extensions are processed, assistance with lost visas and passports and preparation of invitation letters. Contractor clerical support at Star City shall assist with these duties as needed to help coordinate travel to and from the Star City location. In the United States, the contractor shall prepare and ensure visa applications are processed for NASA contractor personnel who will travel to Russia.

#### **1.5.1.4.4 Liaison and Administrative Services (LOE)**

The contractor shall serve as a liaison between U.S. personnel and Russian organizations, Russian personnel, and other U.S. personnel and organizations in the U.S. and Russia. This position will be located in Moscow, Russia, in support of NASA representatives both resident in Russia and visiting. Specific tasks include scheduling meetings with Russian management, interpretation and translation as necessary, and transferring information between NASA and Russian management as needed. This position will coordinate directly with the Director, HSFP-R, and will be located at the NASA office in the Roscosmos building in Moscow.

The contractor shall provide the administrative, property and clerical support necessary to perform the logistics services specified in this SOW. Additionally, the contractor shall provide administrative and clerical support to the HSFP-R including the NMLO.

In the Moscow region the contractor shall be responsible for office management, travel and visitor coordination, personnel management, financial tracking, procurement, and office communications. These activities involve international office management and operations. In addition, clerical and secretarial support, as an interface between NASA and Russian organizations, shall be responsible for scheduling, mail handling, and preparation of correspondence and reports, etc. HSFP-R contractor personnel must communicate in English and Russian, and must pass an Embassy background check. The Star City Russian military must approve all Star City contractor personnel.

#### 1.5.1.4.5 Other Related Support (LOE)

The contractor shall maintain the capability, primarily in Russia, to procure miscellaneous materials or services as required by NASA including but not limited to the types of business and office related materials that are required for conducting normal course of business in Russia. In Star City, the contractor shall coordinate and oversee the housing occupied by NASA travelers.

#### 1.5.1.4.6 Astronaut Office Support (LOE)

The JSC onsite contractor shall support travel to Russia for astronauts, for their dependents, for launch guests, and for ISS IP crew members (JAXA, CSA, ESA, other, as required) with the exception of ticket purchases; and act as point of contact for family support to, within, and from Russia. The support shall include but not be limited to the following:

Tracking of astronaut Russian travel by its personnel to include dates of travel, tickets, limousine service in Houston, and pickup in Russia, coordination with the International Travel Office, preparation of Letters of Invitation (LOI) for each trip utilizing the International Travel Database (ITD). Tracking of all visa currencies, Multiple Entry Visa (MEV) or Dual Entry Visa (DEV) types, and official passport currency for all personnel, to include family members utilizing the ITD and processing visa requests. Tracking dependent inoculation, passport and required information such as contact phone numbers or other data for the families of ISS assigned crew members for early processing utilizing the ITD. The contractor shall comply with the Crew Office travel procedures (reservations, regulations) in preparation of travel arrangements to include hotel (Volga, Star City, Moscow Renaissance Hotel (Penta), etc), rental car, airplane reservations, orders, ground transportation, etc. Upon return of travelers from Temporary Duty (TDY), complete voucher for traveler signature and approval and maintain travel files on all travelers, i.e., vouchers, orders, receipts.

a) The contractor shall coordinate with Star City on Russian Familiarization Training schedules and the Expedition Corps and the Flight Crew Office, in order to develop projections of Russian travel for planning purposes.

#### 1.5.1.4.7 International Operations Liaison Office Support (LOE)

The contractor shall provide on site support for the Houston Support Group (HSG) and for the Moscow Support Group including administrative support, badging, and scheduling by performing the following tasks:

a) At JSC, the onsite contractor support shall include but not be limited to:

Assistance in processing of security clearances, badge paperwork and computer account paperwork (including email accounts) for foreign nationals supporting the ISSP. Assist the Manager of the International Operations Liaison Office with activity report compilation, weekly activities schedule, export control compliance, and logistics assistance in support of HSG operations. Identification of upcoming travelers and assistance in the processing of the LOI's for HSG and Backup Control and Center (BCC) travelers utilizing the ITD. Maintenance of the HSG library including shipping of

documents and office supplies for HSG. Maintenance of the HSG and Russian Interface Officer (RIO) web pages. Coordination of HSG and Russian Simulation Execution Team (RSET) support for MCC-H simulations.

b) At MCC-M (TsUP) the onsite contractor support shall include be not be limited to:

Assistance with the same tasks as defined in 1.5.1.4.7 a), administrative and technical interpretations and translations as directed by NASA, maintenance of a log of all translations by MCC-M (HSG and MTLO) translators, administration of a quality control program for all translations and posting correspondence translations to the NASA/IP Correspondence website. Tracking MCC-M interpreter/translator training and provision of a monthly status report to the International Operations Liaison Office manager.

#### **1.5.1.4.8 International Partners Office Russian Translation Coordination Support (LOE)**

The contractor shall provide JSC on site support to:

- a) Receive, log, seek MIC COTR or designee approval, and process all incoming translations from NASA and/or NASA's contractor(s).
- b) Receive, log, distribute all completed translations received from the contractor off site facility and ensure translations are archived at the offsite facility.
- c) Maintain and distribute weekly incoming and outgoing informal Russian correspondence logs.
- d) Facilitate and resolve translation related issues as needed.
- e) On-site location for visa processing information and drop-off/pick-up services.

#### **1.5.1.4.9 Russian Elements Office Telecon/Videocon and Travel Coordination (LOE)**

The contractor shall provide JSC on-site support with telecons/videocons coordination for Russia. This shall include assigning Russian conference rooms at RSC-E that have NASA Integrated Services Network (NISN) teleconference lines, providing notification to the NASA long distance/telecon service provider of numbers to be connected, and arranging interpreting support. It should be noted that teleconferences conducted with the MCC-M usually only require the contractor to coordinate interpreter support. The contractor shall provide a daily notification of meetings to Russia, the communication provider, and the interpreting provider. A monthly report of all telecons/videocons is to be provided to NASA.

The contractor shall provide JSC on-site support to coordinate ISS Program Office travel to/from Russia in accordance with the Russian Travel Management Directive, MD-114. This shall include providing the Deputy Russian Elements Integration Manager with Russian travel requests for approval, generation of LOI's, and coordination of planned travelers with the NASA HSFP-R utilizing the ITD.

The contractor shall develop monthly, quarterly and yearly travel reports utilizing the ITD that include number of trips per organization, number of travel days per organization, travel costs per organization for all ISSP International travel. These reports shall be provided to the Russian Elements Integration office manager or designee. The contractor shall be able to administer input to the ITD and provide feedback to the ITD NASA manager concerning the utility of the database and suggestions and recommendations for improvement.

#### **1.5.1.4.10 ISS INTEGRATION TECHNICAL ADVISOR (LOE)**

The contractor shall serve as a liaison between the NASA ISS Program Manager, his Deputy and Staff Managers, other key ISS Program personnel and Russian organizations, Russian personnel, and other

organizations in **Russia**. This position will be located at the NASA ISS offices at the Johnson Space Center in Houston, Texas and will report directly to the ISS Manager for External Integration. Specific tasks include organizing and scheduling meetings with Russian Program management (and/or other Russian aerospace personnel) and transferring information between NASA and Russian management as needed to improve overall integration of Russian and US activities on and pertaining to the ISS. The contractor shall provide monthly verbal or written reporting consisting of information and analysis regarding the Russian aerospace climate in the Russian media and legislature, Russian space policy, and legislative and budgetary activities resulting from the Russian political climate. In addition, the liaison is required for agency and program level meetings, e.g. HOA, MPPT, MCB, and SSCB. The position will require bilingual communication skills in English and Russian, as necessary to perform the various tasks listed above.

### 1.5.2 International Mission Integration

The International Mission Integration Services include International Shipping Coordination, Ham Radio project support to ISS mission, Joint Cargo Certification engineering and administrative support, and Russian Segment support.

#### 1.5.2.1 International Shipping Coordination (CF)

The contractor shall provide support to coordinate International shipments associated with ISS operations, maintenance/sustaining engineering, and R&D activities. This shall include all ISS related non-Flight shipments and all non-flight and flight articles consigned to the U.S. Embassy in Russia .

##### 1.5.2.1.1 JSC Shipping Coordinator

The on-site contractor shall:

- a) Be responsible for working with existing or establishing new counterparts with the IP's in order to coordinate and arrange the schedules for shipments.
- b) Provide weekly schedules of shipment status. Status' are to be produced and delivered to NASA Russian Elements Integration Office Manager or designee.
- c) Perform Book Coordinator function for the following Bilateral Hardware/Software Exchange Agreement Lists (BHSEALS) which define the processes and requirements for shipping items to/from the IP's, including applicable Customs information: NASA/RSA Bilateral Hardware and Software Exchange Agreements, Lists, and Schedules (SSP 50136), NASA/ASI Bilateral Hardware and Software Exchange Agreements, Lists and Schedules (SSP 50219), NASA/CSA Bilateral Hardware and Software Exchange Agreements, Lists and Schedules (SSP 50220), NASA/NASDA Bilateral Hardware and Software Exchange Agreements, Lists and Schedules for the Japanese Experiment Module (JEM) (SSP 50264), NASA/ESA Bilateral Hardware and Software Exchange Agreements, Lists, and Schedules for Columbus (SSP 50289), NASA/ESA Bilateral Hardware and Software Exchange Agreements, Lists, and Schedules for Cupola (SSP 50408), NASA/RSA Bilateral Agreement: Shipping/Receiving Process for ISS Flight Hardware (SSP 50576).
- d) In addition to performing Book Coordinator function, the contractor will be required to develop the following bilateral documents: NASA/NASDA Bilateral Hardware and Software Exchange Agreements, List, and Schedules for the H-II Transfer Vehicle (SSP 50615), NASA/NASDA Bilateral Hardware and Software Exchange Agreements, Lists and Schedules for the Centrifuge Element (Main Body) (SSP 50616), NASA/Brazil BHSEALS (SSP TBD). The documents shall be formatted to be consistent with the other BHSEAL documents.
- e) Provide information to the ISS community on the process for shipping non-Flight (i.e., non-manifested) hardware and software to all ISS International Partners and their subcontractors, and all NASA hardware consigned to the U.S. Embassy in Russia. This includes JSC policies and paperwork, customs requirements for all involved countries, and recent changes to these processing requirements.

- f) Review shipping paperwork (i.e. Pro Forma Invoices (JSC Form 1735), JSC Form 290's, etc.) for all ISS-related shipments to the International Partners and their subcontractors to validate consistency with other program documentation and completion of all required data and signing as the ISS shipping coordinator when required. Deficiencies shall be identified to the initiator immediately for correction with notification to the NASA POC. The shipping coordinator will notify the NASA POC, immediately, if a scheduled shipment is not going to meet its required delivery date.
- g) Create and maintain an International Shipping and BHSEALS web site. Develop and manage a BHSEALS database for each BHSEALS book to establish the requirement and accountability for hardware/software to be shipped and track status.

#### **1.5.2.1.2 Moscow Shipping Coordinator**

The contractor shall provide liaison service in Russia for the shipment of NASA equipment and personal goods into and out of Russia and Kazakhstan. This service involves interfacing with Russia and U.S. customs procedures and regulations, and Russia and U.S. organizations involved in, and required for, efficient shipment and delivery of NASA items. This service does not include the actual shipping of goods or payments related to shipment. The contractor shall serve as an interface between NASA and Rosaviakosmos technical personnel, NASA transportation department personnel, Embassy personnel, and the shipping companies. In addition, the contractor shall log incoming and outgoing shipments, and track the progress of deliveries.

#### **1.5.2.2 Reserved**

#### **1.5.2.3 ISS Ham Radio Project (CF)**

The ISS Ham Radio project supports the ISS mission by providing the following functions; education outreach, crew psychological health, R&D communication experiments, and ISS emergency contact. The JSC on-site contractor shall assist the ISS Program Office Ham Radio Lead as described below:

- a) The contractor shall serve as the ISS Ham Radio technical team representative. In this capacity, the contractor shall attend Amateur Radio on International Space Station (ARISS) and ISS Ham Radio technical team meetings. The contractor shall coordinate resolution of actions for these meetings. The contractor shall develop and maintain schedules of planned Ham Radio activities, which include planned school contacts, Technical Interchange Meetings (TIM's), testing milestones, and other major event dates. The schedule shall be provided to NASA on a monthly basis. Reference Integrated Mission Integration Office Schedules (DRD B-PC-06).
- b) The contractor shall coordinate the addition of Ham Radio hardware for delivery to the ISS. This shall include the preparation of Manifest Requests (MR) for having hardware added to the Shuttle, Progress, Automated Transfer Vehicle (ATV), and H-II Transfer Vehicle (HTV) manifests. The contractor shall coordinate the shipment of Ham Radio hardware with the ISS International Shipping Coordinator.
- c) The contractor shall support Safety reviews for Ham Radio hardware and coordinate required information with the appropriate IP.
- d) The contractor shall perform ISS and Shuttle crew training for the Ham Radio. This shall include maintaining a list of licensed and to-be-trained astronauts. It shall also include developing training materials and reviewing training plans and documents created by external organizations (such as MOD) to ensure Ham Radio content is accurate.
- e) The contractor shall coordinate crew schedules with the Flight Control Team (FCT) to support ISS Ham Radio Operations. The contractor shall track ISS crew contacts with participating schools. The

contractor shall write daily summaries and create bulletin boards summarizing daily ISS Expedition activities.

#### **1.5.2.4 Joint Cargo Certification Team (JCCT) (LOE)**

The contractor shall provide engineering and administrative products and services for development and implementation of the ISSP bilateral and multilateral cargo certification process and operation of the JCCT. The development and implementation is conducted through TIM's, videoconferences, teleconferences, email and faxes with the IPs. The current bilateral cargo certification process is defined in International Space Station Cargo Certification Process (SSP 50578) which shall be book coordinated by the contractor. The contractor shall provide development of manifest analysis protocols, hardware certification protocols, joint test procedures, technical requirements, data exchange, hardware certificates, CoFR certificates, and readiness review presentations. The contractor shall provide development and maintenance of yellow tag agreements, yellow tag list, and future program yellow tag requirements and process documents.

#### **1.5.2.5 Export Management (CF)**

The contractor shall develop an Export Control Plan (DRD B-EC-02) to define the approach that shall be used for export control. Audits shall be conducted annually to review compliance with export control regulations and reported according to Export Control Audit Results (DRD B-EC-01).

The contractor shall designate an export control representative (ECR). The ECR shall determine classification of all export commodities and whether NASA existing license exceptions or exemptions can be used. The ECR shall administer and control logs of export activities consistent with the MIC Export Control Plan and associated export compliance requirements. Export control logs shall be maintained and include as a minimum, commodities classifications, license information, transaction status, compliance activities and records of process completion for license exceptions or exemptions.

#### **1.5.2.6 Russian Segment Support (CF)**

The contractor shall serve as a liaison between the US and Russian management and flight control teams and shall support and improve the efficiency and overall conduct of real-time and simulated US-Russian space station operations. The contractor shall also maintain the current hardware and software configuration to support processing of Russian commands and telemetry in the Moscow Support Room in MCC-Houston.

The team shall be referred to as the Russian Segment Support Team (RSST). The RSST shall consist of two groups: The Russian Regional Control Group (RRCG), which is primarily responsible to support real-time operations in MCC-Houston, and the Russian Simulation Execution Team (RSET), which is primarily responsible to support the development and execution of ISS simulations in MCC-H. The contractor shall comply with detailed implementation requirements contained in the Russian Segment Support Team Work Instructions, dated December 18, 2002.

### **1.6 HUMAN SPACE FLIGHT COLLABORATION (LOE)**

The contractor shall accomplish all work necessary to accommodate commercial customers to the ISS. The work will be the same or similar scope already required elsewhere in this contract SOW but will be performed in support of a NASA Reimbursable Space Act Agreement.

**2.0 RESERVED**

**3.0 RESERVED**

**4.0 OPERATIONS**

**4.1 Mission Integration**

Many of the Mission Integration functions are associated with ISS transportation vehicle traffic and on-orbit ISS operations, which have been ongoing for the ISSP and must continue seamlessly by the contractor upon contract award.

The contractor shall initiate and proceed with open work on all tasks and functions based upon their status at the time of contract transition. The contractor shall address in their management transition and technical plans how to accomplish this requirement.

- a) Correspondence and communications with the International Partners and Participants are integral components of the tasks and functions listed in this section. The contractor shall adhere to the program policies, requirements and processes identified in Section 1.5 and Export Control regulations for International Partner and Participant correspondences and communications. In accordance with OC office policy, the contractor shall log and archive all International Partner and Participant correspondences. The records for written communications shall, at a minimum, include date of receipt or transmittal, originator, subject, copy of the actual correspondence, and tracking number.
- b) Although the functions identified within this SOW have a historical foundation, the ISSP is still an evolving program that can benefit from efficiencies and improvements realized by an experienced and dedicated team. The contractor shall contribute to process improvement efforts for all of the tasks and functions identified in this contract, including recommendations and evaluations for improvements with other programs and contracts that affect the tasks in this contract.
- c) The contractor shall ensure consistency across all products for those tasks repeated for multiple flights and increments, between related or dependent tasks within this section of the SOW, and between related or dependent tasks from other programs or contracts.
- d) The contractor shall provide the "Book Coordinator" function for multiple program documents as defined throughout Section 4.1 of this SOW. This is a key program task that provides for developing new documents or updates to existing documents to and includes the following tasks:
  - 1) Establish document schedule with NASA agreement Integrated Mission Integration Office Schedules (DRD B-PC-06).
  - 2) Integrate inputs from technical experts, coordinate updates between submitters and reviewers, document issues and resolutions, and maintain the technical consistency of the document.
  - 3) Update the document through the ISS CM process (reference 1.3) including DQA process, per the agreed upon template in the ISS Mission Integration Template (MIT) (SSP 50489) (or NASA approved schedule). This includes:
    - Integrating inputs, identifying discrepancies, and tracking communications from the partners regarding the documents. For documents that affect Russia, development of Notification of Document Changes (NDC's) and coordinating translations when required.
    - Organizing and conducting formal meetings to evaluate the changes, distribution of minutes and actions, and tracking closures.
    - Developing and making presentations to the Mission Integration and Operations Control Board (MIOCB) as required for document Change Request (CR) approvals.
- e) The contractor shall provide meeting support for Mission Integration functions in coordination with the technical teams and offices. An example of teams and support required is provided in Appendix G. Tasks shall include:

- 1) Scheduling of telecons, TIMs and meetings including coordination of interpretation support as required.

- 2) Organization of meeting logistics, such as conference rooms and telecons, preparation of meeting materials, and ensuring necessary equipment is available and set up.
  - 3) Attendance at meetings as required to collect minutes and action item information including assignment, notification to assignees, and documentation of status and closures.
  - 4) Maintenance of team and meeting Points of Contact (POC) lists, distribution lists and team calendars of events.
  - 5) Development and distribution of the agendas, action item lists and minutes, as well as notices of events and other pertinent information
- f) The contractor shall develop and curate web page content for specified MIO teams and organizations. The contractor shall provide web site administration, web site design, and post new information to the websites. The contractor shall develop and provide web pages in accordance with the NASA Johnson Space Center policies. Website content shall contain schedules, points of contact, work instructions, products and other team unique content as specified.
- g) The contractor shall adhere to the program policy, requirements, and processes defined in the following documents:
- 1) SPIP Volume 1 (SSP 50200-01)
  - 2) Station Program Implementation Plan (SPIP) Volume 2 (SSP 50200-02)
  - 3) International Space Station Program Certificate of Flight Readiness (CoFR) Process Document (SSP 50108)
  - 4) Generic Groundrules, Requirements and Constraints Part I: Strategic and Tactical Planning (GGR&C, SSP 50261-01)
  - 5) Space Station Reference Coordinate Systems (SSP 30219)
  - 6) Post Mission Guidelines (SSP 50168)
- 4.1.1 Mission Requirements and Planning
- 4.1.1.1 Increment/Stage Integration (CF)

A maximum of one Increment Definition and Requirements Plan (IDRP) and three Increment Definition and Requirements Document for Increment x (IDRD for Increment x) will be in process at any given time. A description of increments, planning periods, the overlapping schedules of planning periods, and the interrelationships of the Increment Definition and Requirements Documents (IDRD) documentation is provided in Appendix F. A typical increment team consists of a dedicated NASA Increment Manager (IM) and NASA Increment Deputy Manager (IDM), a dedicated contractor Increment Engineer (IE), a shared IDRP/IFDRP/IDRD for Increment XX Book Coordinator, and a shared Technical Integrator (TI). The Increment Definition and Requirements Document Flight Program (IDRD FP) is maintained and updated on a continuous basis to coordinate and manage integrated ISS planning across increments as launch dates and the assembly sequences change.

4.1.1.1.1 IDRP and IDRD Documentation (CF)

The purpose of the IDRP and IDRD documentation function is to record and control the integrated multilateral visiting vehicle schedules and requirements, resource allocations, top level flight manifests, and program level requirements and priorities for an increment. The baselined content of the IDRP and IDRD's provides programmatic direction to the implementing execution level organizations.

- a) The contractor shall perform the IDRP and IDRD documentation tasks in accordance with the tactical processes defined in SPIP Volume 1 (SSP 50200-01) Section 3.7 and SPIP Volume 2 (SSP 50200-02) Sections 3.0, 5.0, and 5.1.
- b) The contractor shall organize and conduct, upon request by the NASA Increment Manager, International Partner (IP) telecons and TIMs to integrate data inputs, identify discrepancies, and obtain agreement for content of documents listed in this section. This includes the development and distribution of agendas, minutes, discussion and presentation material, action status tracking, CM paper flows and protocols. The telecons nominally occur once per week while TIMs are nominally scheduled once every 4 months.
- c) For the Increment Definition and Requirements Document Blank Book (IDRD BB, SSP 54004), the contractor shall:
- 1) Book Coordinate the IDRD BB (SSP 54004) in accordance with the definition in Section 4.1(d).
  - 2) Process updates and changes nominally two times per year. The contractor shall develop changes to the implementation plans and schedules upon request by NASA.
  - 3) Evaluate and recommend formats compatible with data that are obtained from input sources and topics common across Increments including the Operations Summary (SSP 50112) or ISS performance, resources, and consumables formats generated by the PI&C contract if the Operations Summary has not been updated, Multi-Increment Manifest (MIM, SSP 50110), IDRD FP (SSP 54100), Program Board action items and directives, IP correspondence and execution level organization requests.
- d) For the IDRD FP, SSP 54100, the contractor shall:
- 1) Book Coordinate the IDRD FP (SSP 54100) in accordance with the definition in Section 4.1(d).
  - 2) Process updates and changes nominally 24 times per year to maintain integrated ISS planning across planning periods and increments as launch dates and the assembly sequence change. The contractor shall develop changes to the implementation plans and schedules upon request by NASA (reference DRD B-PC-06). As a flight is completed the associated information is retained in the historical section of the document.
  - 3) Collect and collate proposed changes from sources including the MIM (SSP 50110) Change Notices, the sanctioned Integrated Flight Schedule (IFS), GGR&C (SSP 50261-01), International Partner correspondences, Program Board action items and directives and on-console records of as-performed visiting vehicle data.
- e) For the Increment Flight Definition and Requirements Plan (IFDRP), the contractor shall:
- 1) Develop the increment specific IFDRP as defined in the SPIP Volume 2. Upon approval by the Requirements and Increment Integration Office (RIIO) Manager, the contractor shall prepare the IFDRP for distribution.
  - 2) Deliver the IFDRP in accordance with the schedule requirements documented in ISS Mission Integration Template (MIT), SSP 50489 or a specific schedule approved by the RIIO Manager. The contractor shall develop changes to the implementation plans and schedules upon request by NASA (reference DRD B-PC-06).
  - 3) Collect and collate proposed IFDRP data from authorized sources including the Launch Package Team for the appropriate flight and stage requirements.
- f) For the IDRP, the contractor shall:
- 1) Develop the increment specific IDRP in accordance with the format requirements in IDRP BB (SSP 54002). Upon approval by the Requirements Integration Panel (RIP), the contractor shall prepare the IDRP for distribution under NASA letterhead.
  - 2) Deliver the IDRP in accordance with the schedule requirements documented in ISS Mission Integration Template (MIT), SSP 50489 or an increment specific schedule approved by the RIP. The

contractor shall develop changes to the implementation plans and schedules upon request by NASA (reference DRD B-PC-06).

- 3) Collect and collate proposed IDRP data from authorized sources including the Operations Summary (SSP 50112) or ISS performance, resources, and consumables reports generated by PI&C contract if the Operations Summary has not been updated, GGR&C (SSP 50261-01), MOD Operations Baseline Documents for the appropriate flights, and Requirements Request Forms as defined in MIDS BB SSP 50622-02, Section 4.
- g) For the IDRD for Increment xx (SSP 540xx), the contractor shall:
- 1) Book Coordinate the IDRD for Increment xx (SSP 540xx), where xx is nominally the number of the specific increment starting with the number 00, in accordance with the definition in Section 4.1(d), the format in the IDRD BB (SSP 54004) and the increment specific IDRP (note that the numbering scheme may be deviated from in off-nominal situations).
  - 2) Deliver the document in accordance with the schedule in the MIT (SSP 50489) or an increment specific schedule approved by the Increment Manager, plus updates once per month from Increment start minus 3 months through increment completion. The contractor shall develop changes to the implementation plans and schedules upon request by NASA (reference DRD B-PC-06).
  - 3) Validate approved document contents and develop CoFR review presentations upon request by the Increment Manager in accordance with the requirements in ISSP CoFR Process Document (SSP 50108) and MIO work instructions.
  - 4) Collect and collate proposed changes from authorized sources including the flight and stage specific MOD Operations Baseline documents, GGR&C document (SSP 50261-01), Operations Summary document (SSP 50112) or ISS performance, resources, and consumables reports generated by PI&C contract if the Operations Summary has not been updated, IDRD FP (SSP 54100), IDRP (SSP 540xx), IDRD Annexes 1, 2, 3, 4, and 5 (SSP 540xx-ANXyyy, SSP 540xx-ANX2, SSP 540xx-ANX3, SSP 540xx-ANX4, and SSP 540xx-ANX5, respectively), ISS Program Off-Nominal Situation Plan (IPOP, SSP 50562), Station Development Test Objective Catalog (SDTOC), SSP 50448, Requirements Requests Forms, Program Board action items and directives, Launch Package Manager inputs, IMT inputs and IP correspondence.
- h) The contractor shall develop, manage, and update the website content of the IDRP, IFDRP, IDRD FP, IDRD BB, and IDRD for Increment XX documentation and their related information as defined in 4.1(f).

#### **4.1.1.1.2 Generic Groundrules, Requirements and Constraints (GGR&C, SSP 50261-01) (CF)**

The GGR&C documents and baselines the program approved groundrules, requirements, and constraints that apply to ISS traffic planning, crew training, medical, crew rotation, resources and accommodations, and crew time requirements for strategic, actual, and execution planning (SSP 50200-02 SPIP Volume 2, Section 4.0).

- a) The contractor shall book coordinate the GGR&C Part 1 (SSP 50261-01) in accordance with the definition in Section 4.1 (d).
- b) The contractor shall process changes once every 2 months. The contractor shall develop changes to the implementation plans and schedules upon request by NASA.
- c) The contractor shall organize and conduct, upon request by the RIP Chairperson, International Partner telecons and TIMs to integrate data inputs, identify discrepancies, and obtain agreement for content of the GGR&C. This includes the development and distribution of agendas, minutes, discussion and presentation material, action status tracking, CM paper flows and protocols. The telecons and meetings are nominally integrated with the telecons and meetings of Section 4.1.1.1.1 IDRP and IDR D Documentation.

- d) Upon request by the NASA RIP Chairperson, the contractor shall organize the development, integration and documentation of studies leading to the resolution of issues associated with the proposed GGR&C changes. This includes the development and coordination of meetings, agendas, presentation material, and action tracking status.
- e) The contractor shall develop, manage, and update the website content of the GGR&C documentation and its related information as defined in 4.1(f).
- f) The contractor shall review submitted Requirements Request Forms for completeness and feasibility and provide recommendations to the RIP chairperson(s). Upon concurrence from the RIP chairperson, post to the RIP website for RIP member review.

#### 4.1.1.1.3 Station Development Test Objectives (SDTO's) (CF)

The contractor shall perform the following tasks in support of managing the approval, documentation, execution planning, implementation, results reporting, and archival of SDTOs and joint Shuttle and ISS SDTOs or DTOs. The SDTOC (SSP 50448) contains process and schedule information as well as approved SDTO/DTOs.

The contractor shall:

- a) Book Coordinate the SDTOC (SSP 50448) in accordance with the definition in Section 4.1(d) and the processes in SPIP Volume 2 (SSP 50200-02) Section 5.3 and the SDTOC (SSP 50448).
- b) Implement the joint change processes for Space Shuttle Program Development Test Objectives (DTOs) and SDTOs that affect both the Space Station and the Shuttle in accordance with the processes identified in SDTOC (SSP 50448).
- c) Process changes to the SDTOC (SSP 50448) sections addressing processes and schedules once per year. Changes shall include SDTO/DTO proposals from SDTO/DTO initiators as well as inputs collected from the Space Shuttle Program DTO lead; chits, program board actions and directives, and International Partner correspondence (nominally 10 to 20 proposals per year). Completed SDTO/DTOs shall be archived using one change per year. The schedule shall be approved by the NASA SDTO POC.
- d) Develop and coordinate SDTO Working Group (WG) agendas and minutes and upon approval by the NASA SDTO WG lead, distribute the agendas and minutes. This function includes soliciting and coordinating agenda topics with team members and participants, delivering or coordinating the delivery of meeting documentation and materials, and confirming meeting location, participants, and time. Agenda item sources include open actions, status reports, issues coordination and resolution, and WG member and participants requests.
- e) Upon request by the NASA SDTO WG lead, conduct the SDTO WG meetings.
- f) Organize and conduct upon request by the NASA SDTO WG lead, International Partner telecons and TIMs to integrate comments, identify discrepancies and obtain agreement for content of the documents listed in this section. This includes the development and distribution of agendas, minutes, discussion and presentation material, action status tracking, CM paper flows and protocols.
- g) Coordinate, track, and document the execution planning and implementation of approved SDTO/DTOs through the RIP, Increment Management Teams (IMT), Launch Package Teams (LPT), and ISSP Management Center (IMC).
- h) Guide the SDTO/DTO initiator through the processes and products associated with flight or stage assignment and approval, execution planning preparations and approval, real time operations, and post execution closeout, in accordance with the SDTOC (SSP 50448). The contractor shall facilitate the development of interfaces between the SDTO/DTO initiator and implementing organizations.

- i) Develop, manage, and update the website contents of the SDTO documentation and related information as defined in 4.1(f).
- j) Coordinate, facilitate, and validate the reporting of SDTO/DTO results by the SDTO/DTO owner to the MIOCB (unilateral, bilateral or multilateral as required); collect the results reports and archive them for ISSP access as defined in the SDTOC (SSP 50448).
- k) Prepare and update SDTO schedules (reference DRD B-PC-06) as described in 1.2.5.2.

4.1.1.1.4 Increment Resources Tracking and Reporting (LOE)

The availability of specific on-orbit ISS resources are shared by the ISSP community with quantitative rights for International Partner usage allocated in the IDRDS at the ISSP level, and by the MIOCB, delegated to the RIP, at the internal NASA level. The IDRD BB (SSP 54002) Section 4 identifies the ISSP managed resources. The purpose of this function is to track and validate the actual use of these resources against the planned allocations during each increment and develop records of the results.

- a) The contractor shall collect, collate, document and validate with the appropriate ISS teams and the on console increment team in the IMC, the as planned and actual on-orbit ISS resource usages of all of the tasks performed during each increment.
  - 1) The contractor shall develop processes and products that will be used consistently across all of the increments.
  - 2) The contractor shall perform increment to increment data comparisons to identify across increment trends and correlations.
  - 3) The contractor shall apply primary emphasis on crewtime. Authorized crewtime data sources include operations On-Orbit Operations Summary (OOS), Long Range Plan (LRP), Short Term Plan (STP), Execution Plan, and ActStat products; console records (logs, reports); increment specific IDRD Annex 2, 3, 4, and 5 book managers or coordinators, Payloads Operations and Integration Center (POIC) reports, International Partner correspondence, and realtime console operator correspondence.
  - 4) The contractor shall implement the tracking of additional resources as the need is determined by the MIOCB.
- b) The contractor shall develop weekly reports for presentation of the resource usage results to the MIOCB, IMMT or ISS Manager Program Review and management status reporting through the MIS, Section 1.1.1.4 of the SOW.
- c) The contractor shall deliver the increment complete resource usage data for post-increment product development and data archival (see Section 4.1.1.1.5 below).
- d) The contractor shall validate and document the actual on-orbit subsystem resource demands (primarily stowage) to the allocations established by the RIP.

4.1.1.1.5 Increment Engineer (IE) Tasks (LOE)

The contractor shall support the Increment Manager as required to provide programmatic oversight, insight, and management of all ISS increment related activities, including Research and Development activities pre, during, and post increment. Contractor IE services shall start approximately 26 months prior to an increment start. After the increment the contractor IE may be assigned other duties part time until the Post Increment Evaluation Report (PIER, SSP 543xx) is approved.

- a) The contractor shall perform the Increment Engineer functions in accordance with the processes and responsibilities defined in SPIP Volume 1 (SSP 50200-01) Section 3.12, 3.13, 4.2, 4.3 and SPIP Volume 2 (SSP 50200-02) Sections 3.0, 5.0, 5.1 and 5.3. This includes the preflight preparations, realtime operations, and postflight closeout of the increment.
- b) As a member of the NASA-contractor Increment Management Team (IMT), the contractor shall assist the IM to manage, conduct, perform, and evaluate all of the preflight, realtime operations, and postflight tasks required to successfully define, plan, implement, and complete the increment in accordance with the increment specific schedules.

- c) The contractor shall develop and maintain IMT schedules in accordance with Integrated Mission Integration Office Schedules (DRD B-PC-06).
- d) The contractor shall perform on-console operations in the IMC in accordance with the ISS Management Center Operations Handbook (IMCOH) and Program Management Operations and Integration Procedures (PMOIP) and MCC standard operating procedures. Console operations shall be performed during crew awake time periods 5 days per week for stage operations and during all shifts throughout the docked time period for joint Shuttle-ISS operations.
- e) The contractor shall record, validate, and report the status of all tasks performed during the increment for weekly report development during realtime operations and for post increment reports, presentations, and Lessons Learned evaluations. Sources for approved tasks include IDRD for Increment XX, the IDRD PP (SSP541xx) and IDRD Annexes 1, 2, 3, 4, and 5 (SSP 541-ANyyy, SSP 541-AN2, SSP 541 ANX3, SSP 541xx-ANX4, and SSP 541xx-ANX5, respectively), chits, Planning Product Change Requests and on-console IMC products.
- f) The contractor shall develop recommended lessons learned for each increment, update database, and track associated action closures. The contractor shall also collate proposed lessons learned collected from the IMT members and, upon approval by the IMT, forward them to the appropriate program boards and panels for their action item review and approval in accordance with the processes defined in the Post Mission Guidelines (SSP 50168).
- g) The contractor shall develop and Book Coordinate the increment specific PIER, in accordance with CM processes in Section 1.3 of this SOW.
- h) The contractor shall recommend, coordinate, and submit upon approval by the NASA Requirements and Increment Integration Manager, SPIP Volume 2 (SSP 50200-02) and MIT (SSP 50489) process improvements to the respective Book Coordinators for CM processing according to their schedules (nominally once per year).
- i) The contractor shall respond to changes in increment planning and tasking as increment planning, increment requirements, off-nominal events, and corrective plans impact the work plan. The contractor shall develop changes to the implementation plans and schedules upon request by NASA.
- j) Upon request by the IM or the RIP Chairperson, the contractor shall perform special studies and recommend methodologies for new tasks as issues are identified.
- k) The contractor shall develop weekly reports for presentation of the Increment status and Increment metrics to program boards and panels and management status reporting through the MIS, Section 1.1.1.4 of the SOW.

The contractor shall support the Flight Program Working Group Chair as required to manage the flight program during the tactical timeframe.

- l) The contractor shall respond to changes in the Flight Program planning and tasking as the Flight Program, launch dates, docking/undocking, altitudes, etc impact the nominal work plan. The contractor shall develop changes to the implementation plans and schedules upon request by FPWG Chair.
- m) Upon request by the FPWG Chair, the contractor shall perform special assessments and recommend methodologies for new tasks as issues are identified

#### 4.1.1.1.6 Console Operations Support Documentation (CF)

The contractor shall perform the following tasks in support of the coordination, integration, and maintenance of console operations program documentation.

- a) For PMOIP the contractor shall:
  - 1) Book Coordinate the PMOIP in accordance with the definition in Section 4.1(d).
  - 2) Update the PMOIP once per year per NASA approved schedule.
  - 3) Organize and conduct, upon request by the RIO Manager, IP telecons and TIMs to integrate data inputs, identify discrepancies and obtain agreement for content of this document. This includes the development and distribution of agendas, minutes, discussion and presentation material, action status tracking. This is a RIP controlled document.

- 4) Upon request by the NASA RIIO Manager, organize the development and documentation of studies leading to the resolution of issues associated with the PMOIP. This includes the development and coordination of meetings, agendas, presentation material and action item tracking.
  - 5) Develop and curate the website content of the PMOIP documentation and its related information as defined in 4.1(f).
- b) For IMCOH the contractor shall:
- 1) Book Coordinate the IMCOH in accordance with the definition in 4.1 (a).
  - 2) Process updates to the document once following each flight and stage according to NASA approved schedule.
  - 3) Organize and conduct, upon request by the RIIO Manager, IP telecons and TIMs to integrate data inputs, identify discrepancies and obtain agreement for content of this document. This includes the development and distribution of agendas, minutes, discussion and presentation material, action status tracking, CM paper flows and protocols.
  - 4) Organize and conduct, upon request by the NASA RIIO Manager, the development and documentation of studies leading to the resolution of issues associated with the IMCOH. This includes the development and coordination of meetings, agendas, presentation material and action item tracking.
  - 5) Develop, manage and update the website content of the IMCOH documentation and its related information as defined in 4.1(f).
- c) For the International Space Station De-Crewing and Re-Crewing Plan (SSP 50715)  
The contractor shall:
- 1) Book Coordinate the ISS De- Crewing and Re-Crewing Plan in accordance with the definition in Section 4.1(d).
  - 2) Update the ISS De- Crewing and Re-Crewing Plan once per year per NASA approved schedule.
  - 3) Organize and conduct, upon request by the IM or the RIP Chairperson, IP telecons and TIMs to integrate data inputs, identify discrepancies and obtain agreement for content of this document. This includes the development and distribution of agendas, minutes, discussion and presentation material, action status tracking. This is an SSCB controlled document.
  - 4) Upon request by the NASA RIP Chairperson, organize the development and documentation of studies leading to the resolution of issues associated with the ISS De- Crewing and Re-Crewing Plan. This includes the development and coordination of meetings, agendas, presentation material and action item tracking.

#### **4.1.1.1.7IMC Administration (CF)**

The contractor shall provide administrative support to the IMC for on-orbit console operations in accordance with in the IMCOH. Tasks shall be performed during all shifts of the Shuttle-Station docked operations and once per week during stage operations or as requested by the NASA IM.

The contractor shall:

- a) Develop, manage, and update the website content of the IMC and its related information.
- b) Develop and confirm the official list of personnel to work in the IMC during real-time operations for flights and stages. This task shall be performed prior to each flight and stage and approved by the NASA IM.
- c) Coordinate, facilitate, and confirm building badging and facility access to the computer systems for personnel who will work in or visit the IMC. This task shall be performed prior to the start date of the access requirement and approved by the NASA IM.

- d) Maintain IMC real-time/near-real time library of material distributed during flight and stage operations, as defined in the IMCOH.
- e) Update or confirm the status of all of the increment and launch package operations documentation, including FDF, Station Operations Data Files (SODF), and ground based operations documents prior to each flight and stage and as new documents or as changes are released.
- f) Develop and deliver to the NASA IM archival files and an archival library of Increment and Launch Package electronic files and hardcopy records from completed flights and stages. The material to be archived for each flight and increment will be identified and approved by the NASA IM.
- g) Sustain supplies, equipment and documentation in the IMC to support Increment teams, Launch Package teams, and ISS visitors during on-console operations, including the distribution and tracking of the voice system headsets as requested and approved by the NASA IM.

#### **4.1.1.1.8 Administration and Schedules Support (CF)**

The contractor shall provide administrative and schedule support for the RIP, IMT, and Requirements and Increment Integration Office. The contractor shall:

- a) Update IMT schedules (reference DRD B-PC-06) and report to NASA weekly.
- b) Provide administrative support to the Requirements and Increment Integration Office meetings, the RIP, and the IMT as defined in 4.1(e).
- c) Develop and update the Requirements and Increment Integration Office, RIP, Consumables and IMT websites as defined in 4.1 (f).

#### **4.1.1.1.9 Station Tactical Increment Consumables and Resource Management (LOE)**

In order to insure critical consumable resources are available to the ISS when they are needed, an integration of the work across technical teams for planning, tracking and evaluation of usage is required across key consumable categories. The RIP is accountable for negotiating the usage rates of these consumables with the partners and presenting any changes to the MIOCB.

- a) The contractor shall collect, document, and validate with the appropriate ISS teams, including the on-console flight control team and Mission Evaluation Room (MER) personnel, the actual resource usages for each of the categories of consumables.
  - 1) The contractor shall develop processes and products that will be used consistently across all of the increments.
  - 2) The contractor shall perform consumable distribution planning across increments and flights and provide recommendations for IDRPs and IDRDs resupply and return system allocations.
  - 3) The contractor shall integrate and coordinate the tracking of additional consumables as the need is determined by the RIP.

- b) The contractor shall integrate and coordinate weekly reports for presentation of the consumable status to the IMMT and other boards, as applicable.
- c) The contractor shall curate the Consumables Tracking website, as directed by the RIP or the Consumables Team lead, including weekly updates of the consumables tracking graphs.

#### 4.1.1.1.10 Mission Integration Operations (MIO) CoFR Process

The contractor shall facilitate the Mission Integration and Operations (MIO) CoFR process for each flight to provide for consistent data collection, presentation, and archival of the internal NASA/Contractor CoFR data, in accordance with MIO work instructions. This includes maintenance of the Mission Integration and Operations Certification of Flight Readiness Implementation Plan, SSP 50230 and collection of specified data from the Cargo Mission Contractor.

#### 4.1.1.2 Launch Package Integration

The Launch Package (LP) function ensures that ISS operations, maintenance/sustaining engineering, and R&D requirements are implemented pre-mission and during joint operations. The function provides program leadership in defining, developing and implementing mission requirements. The overall day-to-day management and oversight for the ISSP launch package activities shall be the sole responsibility of the NASA assigned Launch Package Manager (LPM). This function integrates requirements into a set of launch package requirements and provides management oversight for the organizations responsible for implementing those requirements, to ensure that mission planning is in accordance with the requirements. This function also provides mission support to track the execution of the requirements and provides programmatic coordination and direction in the event of any off-nominal situations during real-time joint operations.

##### 4.1.1.2.1 Launch Package Engineer (LPE) Tasks (LOE)

The contractor shall support NASA LPM with LPE's to assist in the execution of these activities. The contractor and NASA shall concur on the level of support based on the flight manifest and flight complexity. In addition, LPE's, GFE specialist, Administrative Support, and Node Design Center Representative will be resident at Launch Site Integration Office at KSC (LSIO/KSC). LPE's begin supporting a flight at approximately L-24 months, the contractor LPE shall:

- a) Provide recommendations for updates to processes, policies, procedures, and operational schedules in SPIP Volume I (SSP 50200-02) and LP work instructions. The contractor shall also maintain the LP work instructions.
- b) Assist the LPM in establishing the Launch Package Team (LPT) to include identifying team members, LPE skill level and roles and responsibilities.
- c) Develop, coordinate, and distribute agendas and schedules for weekly LPM team meetings, Payload Planning Working Group Meetings (PPWGs), IP face-to-face LPM TIMS and other forums required to integrate and coordinate LPM requirements.
- d) Conduct weekly LPM team meetings as required by the LPM.
- e) Coordinate with LPT member representatives to support the development of launch package flight specific integration schedules (level I/II/III) to include an integrated top level schedule with specific level I,

II, III milestones (DRD B-PC-06 and B-PC-07). Schedules shall be base lined at L-16 months and updated weekly to support Program Level meetings/Boards. (At approximately L-6 months, daily updates will be required)

- f) Monitor the delivery dates for mission integration products and data in accordance with MIT (SSP 50489) and launch vehicle program schedules (for example Flight Production Working Schedules for Shuttle.) Identify impacts to schedule changes and assist in the resolution of conflicts.
- g) Assist cargo item providers in implementing certification requirements defined in ISSP CoFR Process Document (SSP 50108).
- h) Coordinate the development of agenda items, special topics, and presentation briefings for formal ISS Program Reviews. Examples include the Stage Integration Review (SIR), Launch Package Assessment Review, the Stage Operations Readiness Review (SORR) and the Flight Readiness Review (FRR).
- i) Track and / or resolve launch package actions resulting from LPT meetings, ISSP boards, and other ISSP forums. The contractor shall document resolutions and decisions from assigned action.
- j) Participate in ISSP/Space Shuttle Program, operations, and engineering reviews and meetings as required by the LPM or NASA office lead in order to coordinate and integrate launch package operations, sustaining engineering/maintenance, R&D related requirements, and technical issues. The contractor shall identify issues and provide recommendations for closure and present at the appropriate board panel.
- k) Assist MOD in flight rule development, procedure development, and transfer cue card requirements coordination, and evaluation, including impacts to R&D activities.
- l) Ensure that on-orbit checkout requirements are completed and documented in the IDR.
- m) Ensure that mission cargo close out configuration checklist are completed and documented in the Operations and Maintenance Requirements and Specifications Document (OMRSD) (NSTS 08171).
- n) Assist the LPM in the review/development of Assembly and Operations Support Plan (OP-01) and the Assembly Operations Plan.
- o) Develop implementation plans, at NASA's request, to respond to off-nominal events, changes in assembly sequence, hardware slips, etc.

#### **4.1.1.2.2 LPE Joint Operation Requirements Development Tasks (LOE)**

The contractor shall support the definition, development, and prioritization of integrated launch package intra-vehicular (IVA) and extravehicular (EVA) tasks and requirements for the joint mission. These requirements shall be documented and baselined in the appropriate ISSP documentation. The contractor shall:

- a) Collect IVA and EVA mission tasks and requirements for inclusion in IDR PP Section 6 "Flight Specific Requirements". Recommend prioritization of requirements and tasks.

- b) Support the evaluation of Manifest Requests (MR's) (reference Section 4.1.1.3).
- c) Evaluate manifest to validate it supports ISS and R&D requirements defined in IDR PP.
- d) Support the prioritization of flight manifest, including R&D hardware.
- e) Develop and/or coordinate the development of launch package operational, analytical, and physical integration requirements to support JOP, joint WGs, and other ISSP forums.
- f) Develop, coordinate, and integrate the mission cargo hardware Off Nominal Scenarios (ONS) for the joint mission.
- g) Develop and/or coordinate ISS operations, maintenance/sustaining engineering, and R&D imagery requirements for the flight (reference Section 4.1.1.6).
- h) Monitor closure of cargo items flight safety review nonconformance requirements (NCR's) prior to flight.

#### **4.1.1.2.3 LPE Launch Vehicle Integration Requirements Development Tasks (LOE)**

The contractor shall support the definition, development, and prioritization of integrated launch package requirements for the assigned vehicle. The vehicles shall include Shuttle and IP transport vehicles. The launch package tasks will vary depending on the vehicle.

##### **a) Shuttle Launch Vehicle Integration**

The contractor shall:

- 1) Collect and integrate Cargo Element data (i.e. MPLM, unpressurized carriers, Spacehab, or IP element) from sanctioned sources to incorporate into the required Shuttle documentation such as the MIP and Annexes, Interface Control Documentation (ICD), and launch schedules/milestones. Data that requires coordinate system definition (i.e. mass properties, 3 Dimensional Computer Aided Design (CAD) models, etc.) shall be transmitted in accordance with Space Station Reference Coordinate System (SSP 30219). Applicable Shuttle data is defined in Shuttle/Launch Package Standard Integration Plan for International Space Station Missions, (NSTS 21000-SIP-MIP (ISS)).
- 2) Develop the following integrated launch package deliverables:
  - MIP Annex 1
  - MIP Annex 2 Part 1 & 2
  - MIP Annex 4
  - Interface Control Agreement (ICA)
  - MIP Annex 8
- 3) Support the joint WGs between the ISSP and the launch vehicle to ensure that the integrated launch package operational, thermal, structural, and safety requirements are met.
- 4) Monitor the delivery of ISSP operations, sustaining engineering/maintenance, and R&D hardware and software items to identify risks and impacts to meeting launch vehicle integration schedules and milestones.

- 5) Resolve assigned action items resulting from ISSP and launch vehicle major reviews and forums.
- b) IP Transport Vehicle Integration (Progress, Soyuz, ATV, HTV)

The contractor shall support the LPM in the overall definition, development, and implementation of mission requirements. This includes the following tasks:

- 1) Collect, perform feasibility assessment and integrate cargo data (i.e. technical data sheets, manifest requests, shipping requirements, etc) from the appropriate ISS and IP organizations. This data will be coordinated with the appropriate transport vehicle IP Manager by the NASA LPM.
- 2) Develop and maintain schedules for the visiting vehicles (DRD B-PC-06). Milestones should include delivery of ISSP and IP operations products, vehicle production schedules, testing milestones, sustaining engineering (utilizing Element Manager support), and software items to identify risks and impacts to vehicle readiness to support planned launch date.
- 3) Ensure that all flight requirements/milestones are being met and that all required engineering data (i.e. mass properties, models, etc.) is transmitted to the appropriate ISS organization per the MIT (SSP 50489) and flight unique schedules.
- 4) Support joint WGs and forums between the ISSP and IP to ensure that all launch package operational, technical, and safety requirements are met. The contractor shall chair these meetings at the request of the LPM.
- 5) Resolve assigned action items resulting from ISSP and vehicle major reviews and forums.
- 6) Provide real time support in the IMC of major events such as docking/undockings.
- 7) JAXA Integration Support (LOE) – Support JAXA integration into ISS to include, but not limited to: participation in vehicle design reviews, participation in Ops concept development, support of joint working groups between the ISSP and Vehicle, and assisting the International Integration Office in integrating the HTV into the ISS Program.

#### **4.1.1.2.4 Launch Site Integration / De-integration Activities (LOE)**

To support on-site launch package ground processing requirements at the launch and landing site, for the LPM and resident in LSIO/KSC the contractor shall:

- a) Coordinate and/or develop ground processing documentation (chits) to facilitate anomalies resolutions or workarounds for flight hardware (middeck and Multi Purpose Logistics Module (MPLM) hardware) integration and certification resulting from pre-flight assembly, test, checkout, and integration/ de-integration activities at the launch and landing site.
- b) Support LPT during mission operations and perform real-time return manifest chits to support Return Manifest Disposition Plan (RMDP) and LPM tasks.
- c) Monitor the delivery of ground safety data products for LP cargo items. Coordinate the resolution and closure of NCRs prior to flight.
- d) Support IP hardware processing for flight (middeck and MPLM) and post-flight de-integration tasks.

- e) Provide on a contingency basis, MPLM pre-bench review hardware verification and label application to flight hardware in support of the Cargo Mission Contract as directed by the LPM.
  - f) For Shuttle flights, co-lead the RMDP as defined in SSP 50465 with CMC and provide real-time support for early destow operations.
  - g) Represent LSIO at the daily Materials Engineering Review Board (MERB), submit the LPM mission inputs to the integrated Operations and Maintenance Requirements and Specification Document (OMRSD), NSTS 08171, act as LPE representative during launch and landing countdown at KSC, and support landing/post-landing operations.
  - h) Participate in KSC IP hardware cargo planning, processing, integration, and deintegration reviews (i.e. Payload Readiness Review (PRR), Launch Readiness Review (LRR) and Ground Operations Review (GOR) etc.).
  - i) Serve as the launch site representative for the Nodes Project Design Center and other new ISS elements.
  - j) The contractor shall perform the following tasks for GFE ISS hardware delivered to KSC:
    - 1) Review shipping and receiving documentation (DD250/1149/JSC Form 290) and Acceptance Data Packages for compliance with KSC receiving requirements in ISS and Payload Receiving and Shipping Guidelines (K-SS-12-17). Report discrepancies to hardware providers and track closure status.
    - 2) Report discrepancies (Problem Reports and crew concerns) noted during crew hardware reviews and fit checks to hardware providers and track closure status.
    - 3) Prepare KSC Work Authorizing Documents for hardware repairs resulting from discrepancy reports that can be performed at KSC.
    - 4) Perform electronic photo documentation for discrepancies noted during hardware receiving, hardware reviews and fit checks and repairs. Maintain readiness state (batteries and memory cards) of NASA digital camera inventory at KSC LSIO.
  - 5) Represent Hardware Providers (including GFE), as requested, at Hardware Verification Reviews and MPLM bench reviews.
- k) Provide general administrative support to the LSIO including maintenance of LSIO records, managing supplies and equipment, schedule coordination and support for ISS visiting personnel, and management of ISS personnel badging/training.
- 1) Coordinate the joint SSP/ISSP Payload ICD Walkdown inspections of ISS cargo elements to verify compliance with payload ICD's with the JSC Cargo Mission Manager, Launch Package Team, and Mission Processing Team

#### 4.1.1.2.5 LPE Real-time and Post-Mission Support Tasks (LOE)

The contractor shall perform the following activities in the IMC. The real-time team shall consist of the NASA LPM or LP Integration Manager and contractor LPE's. The contractor shall provide the personnel to support one-shift operations beginning at L-2 days before launch. At launch, the contractor shall provide personnel to support continuous operations until the first shift after shuttle undocking. The contractor shall:

- a) Develop the launch package team training and certification requirements for the flight for LPM team members who will be supporting real-time operations. (Reference IMCOH.) These requirements shall be documented in training plans and certification plans.
- b) Conduct training sessions and participate in simulations.
- c) Provide program requirements tracking, oversight, and resolution of real-time operational, maintenance/sustaining engineering and R&D issues that fall outside pre-mission requirements, ground rules, and constraints for the joint mission (reference IMCOH).
  - Develop the prelaunch transfer chit as input to final transfer plan development
  - Evaluate and concur on chit 0
  - Develop daily transfer chits for middeck, MPLM, pressurized modules, or IP hardware as required
  - Develop daily Logs
  - Develop LPM Shift Reports
  - Develop inputs to the Post Flight Report

- d) Monitor real-time timelines to ensure that IDRDR PP requirements are accomplished during joint operations. Document any deviations for post mission briefings.
- e) Conduct post-mission debriefs.
- f) Develop, coordinate and provide recommended lessons learned for each flight, update database, and track associated action closures in accordance with the Post Mission Guidelines (SSP 50168).

#### **4.1.1.2.6 Flight Station Tactical Resource Management (LOE)**

The contractor shall provide technical analysis, integration and planning support to the RIP and other multiple flight/increment forums to perform the following functions:

- a) Transition resupply and return allocations from the strategic to the tactical timeframe for use by tactical planners, increment and launch package teams.
- b) Conduct quantitative analyses (using the Station Tactical Operations Resource Management tool or equivalent contractor provided tool) of projected requirements to make recommendations regarding maximization of resources focusing on mass and volume for ascent/descent cargo.
  - 1) Collect projected cargo requirements for all flights to the ISS from cargo category owners and review data for consistency across flights and with previous projections.
  - 2) Define capabilities for each flight working with the LPT to insure consistency in reported capabilities.
  - 3) Update data on a continuous basis to include pressurized (and unpressurized) cargo and capabilities across the tactical timeframe for all flights to the ISS.
  - 4) Provide reports to NASA on a monthly basis or as required to support what-if scenarios and replans.
  - 5) Sustain the STORM tool or equivalent tool.

#### **4.1.1.2.7 Certificate of Flight Readiness (CoFR) Process Support (LOE)**

Support the LPM in coordination of LPM CoFR functions for all participating organizations to ensure a thorough review at the SORR to certify readiness for launch and on-orbit operations. This includes identification and tracking of technical issues in support of the LPM coordination meeting to ensure that the appropriate technical issues and special topics are scheduled for presentation. The contractor may be asked to coordinate special topics for presentation at the SORR.

#### **4.1.1.2.8 Launch Package Support Functions (CF)**

- a) Develop, update, and report launch package schedules as described in 1.2.5.2.
- b) Provide administrative support to the LPT's as defined in 4.1 (e).
- c) Update program launch package websites as defined in 4.1 (f).
- d) Provide and update all flight specific documentation for the LPT. Examples include inputs to the Mission Integration Plan (MIP), IDRDR, Flight Rules, Joint Operations Panel (JOP) presentations/minutes, etc.
- e) Prepare and update STORM and CoFR schedules as described in section 1.2.5.2.

#### **4.1.1.2.9 Russian Elements Integration (LOE)**

Provide Russian Systems expertise in order to evaluate, assess and perform design and operational trade studies. Obtain and coordinate technical information with Russian system experts on Russian systems. Utilize subsystem expertise to assist NASA management in understanding and responding to operational design issues. The position will require communication in English and Russian as necessary to perform various RSSE tasks. The RSSE task requires Russian Systems expertise to support various IP integration and Program meetings, such as weekly Team 0 Management Videocons, ISS Mission Management Team telecons, MIOCB (splinters and MMIOCB as required) and as-needed for the SSPCB. In addition, the RSSE will be required to attend the Russian Cargo Integration Working Group on as as-needed basis. In the performance of these duties, the RSSE will provide technical assessments, conduct trade studies, and provide recommendations on both operational and design issues to the U.S. Russian Elements team and other ISS Program Management. These recommendations will be used in deliberations with Russian design, operations and management personnel. In addition, the RSSE will develop various bilateral protocols addressing/resolving joint issues which document joint agreements.

#### **4.1.1.3 Manifest**

The program flight manifest function provides for detailed flight manifests for each flight to the ISS, analyses across manifests, and the database tools and administration to support this function. The following tasks shall be performed in accordance with the processes defined in SPIP Volume 2 (SSP 50200-02) Section 5.2, Appendix N (NASA/RSA Bilateral Process) and Appendix H (Program Planning and Manifesting Tools, Databases, and Interfaces).

##### **4.1.1.3.1 Manifest Process Support (CF)**

The contractor shall interface with program representatives, partners, and NASA institutional organizations to maintain ISS manifest processes to:

- a) Develop process improvements recommendations with the ISS and R&D community and provide coordinated updates to the SPIP Volume 2 (SSP 50200-02), MIT (SSP 50489), and the MIDS BB, (SSP 50622-02) to the Manifest WG (MWG) Chairperson. Upon approval of the MWG Chairperson, deliver to Book Coordinators according to their schedules (nominally once per year).
- b) Review GGR&C manifest content annually and provide recommendations for manifest related updates to the GGR&C to the GGR&C Book Coordinator after concurrence by the MWG Chairperson. Upon approval of the changes, incorporate approved changes into manifest processes, MIDAS standard listings, and manifest products.
- c) Update and report manifest schedules weekly to the MWG Chairperson (see Integrated Mission Integration Office Schedules DRD B-PC-06).
- d) Curate the manifest website to provide the ISS community access to manifest products, processes, data and reports as defined in 4.1 (f).
- e) Organize, facilitate, and conduct upon request manifest teleconferences and TIMs with partners as required to produce manifest products including agenda and protocol development. Telecons are nominally held weekly with Russia with face-to-face meetings three times per year.
- f) Prepare and update the IMS schedule as described in section 1.2.5.2.

##### **4.1.1.3.2 Flight Specific Manifests (CF)**

The contractor shall interface with program representatives such as hardware providers, manifest representatives, launch package and increment management teams to develop manifests (up and down) for all vehicles and flights (Shuttle, Soyuz, Progress, ATV and HTV). This function includes the following tasks:

- a) Develop initial manifest in MIDAS using MIDAS provided generic manifest listing for items that are carried on all flights. Manifest shall be tailored to IDRDP defined flight specific requirements.
- b) Process changes to the manifest
  - 1) Collect recommended MR dispositions from the affected LPM, IM and other mandatory reviewers and request closures at the MWG (approximately 100 per month).
  - 2) Report status of open MR's to the MWG upon request of the MWG Chairperson including signature status, open issues and expected closure dates.
  - 3) Incorporate approved MR changes into the MIDAS dataset including update of associated data including priorities, special handling, hazards, or any other identified special requirement (reference MIDS BB (SSP 50622-02)).
  - 4) Approved MR's shall be incorporated weekly to the working manifest in MIDAS for community review using MIDAS web access.
- c) Book Coordinate the program flight manifest (IDRD Annex 1) document per the schedule in the MIT (SSP 50489) and the task defined in 4.1 (d).
- d) Review changes to the IDRDP and identify discrepancies with the working manifest (and MRs) to the IMT and MWG Chairperson with recommended corrections.
- e) Validate consistency between IDRDP Annex 1 and other IDRDP products. Initiate discussions with product owners to resolve identified issues and discrepancies.
- f) Coordinate transfer of MIDAS dataset contents to IP's as required by the MIT (SSP 50489) and IP request.
- g) Provide inputs to the CoFR process for each flight per MIO work instructions.
- h) Provide flight support to the IMC as defined in the IMCOH. Response shall be within 30 minutes during normal duty hours and within 2 hours during off-duty times. Tasks shall include attendance at daily tag-ups to collect real-time changes, input of changes to MIDAS and production of the post-flight MR for approval.
- i) Develop, coordinate and provide recommended lessons learned for each flight according to the processes defined in the Post Mission Guidelines (SSP 50168). Upon approval of the MWG Chairperson, forward to the LPT.
- j) For shuttle flights, provide the middeck manifest report (ICA manifest report produced by MIDAS) to the LPM team for delivery to Shuttle (reference LPM Section 4.1.1.2.3) according to the MIT (SSP 50489) or upon request by the LPT.
- k) From six weeks prior to flight through launch, provide weekly reports to the MIOCB regarding changes, certification status, and manifest issues.

#### **4.1.1.3.3 Tactical/Increment Manifest (LOE)**

The contractor shall participate in the MWG, IMT, RIP and other forums to perform integration across flights for the two to three year horizon consistent with the IDRDP including the following tasks:

- a) Provide a tactical manifest plan to define manifest approach for critical consumables and other major cargo in support of ISS operations, sustaining engineering/maintenance, and R&D.

- b) Perform analyses to support potential changes and what-if scenarios to support ISS management cargo related decisions.
- c) Provide recommendations for updates to flight manifests due to unexpected changes for example on-orbit anomalies and visiting vehicles schedule changes.
- d) Develop/collect U.S. requirement projections for partner vehicles to support official NASA requests.
- e) Support CoFR as defined in MIO work instructions.
- f) Integrate flight data for input to the PIER (Reference IMT Section 4.1.1.1.5).
- g) Develop, coordinate and provide recommended lessons learned for each increment to the MWG according to the processes defined in the Post Mission Guidelines (SSP 50168). Upon approval of MWG Chairperson, deliver to IMT.
- h) Support IMC as required to provide manifest information for U.S. and IP operations and respond to manifest related crew questions.
- i) Integrate flight data for multi-increment reports.

#### **4.1.1.3.4 Database Capability (IDIQ)**

The contractor shall provide sustaining support for the MIDAS, which is used for integration of manifests and other mission integration data as defined in ISAC-324-REQ-84. Functions include support to the Cargo Mission Contract, NASA and the MIC contract. Tasks include:

- a) Upgrades to major capabilities to accommodate process change, upgrade application platform and provide more efficient operations including automation of planning functions a appropriate. Major releases are identified as a two-point software release (R8.9, R9.0, etc) with a software lifecycle of four to six months. Changes to the database requirements shall be coordinated with the user community.
- b) Upgrades to minor capabilities to accommodate process change, upgrade application platform and provide more efficient operations including automation of planning functions a appropriate. Minor releases are identified as a three-point software release (R8.7.1, R8.7.2, etc) with a software lifecycle of one or two months. Changes to the database requirements shall be coordinated with the user community.
- c) Upgrades as required to correct requirement non-compliance, to accommodate process change, upgrade application platform and provide more efficient operations including automation of planning functions a appropriate. Maintenance releases are identified as a four-point software release (R8.7.2.1.1, R8.7.2.2, etc) with a software lifecycle ranging from hours to a few days. Changes to the database requirements shall be coordinated with the user community.
- d) Tracking and reporting of discrepancies, issues, and new software requirements associated with the MIDAS database to NASA and system users per Discrepancy and New Requirements Tracking for MIDAS (DRD B-MI-04).
- e) Coordination of export control issues related to MIDAS.
- f) Develop or update the MIDAS System Requirements Document (ISAC-324-REQ-84 or equivalent) per the Systems Requirements Document for the MIDAS (DRD B-MI-02).

- g) Develop or update the MIDAS System Design Document (ISAC-328-DSN-84 or equivalent) per Design Document for the MIDAS (DRD B-MI-03).
- h) Provide coordinated updates to SPIP Volume 2 Appendix H, Program Planning and Manifesting Tools, Databases, and Interfaces to Book Coordinator (nominally once per year).

#### 4.1.1.3.5 MIDAS System Administration/User Support (CF)

The contractor shall perform system administration functions for the MIDAS.

- a) Update system tables and pick lists (nominally 2 changes per month).
- b) Upon NASA MIDAS OPR approval, add new accounts to the system and change access privileges to the system. Validate that new users have required training by maintaining MIDAS training records.
- c) Perform data file exchanges with other program databases upon request of manifest leads or NASA OPR including IP databases and IMS according to agreed procedures defined in ICD's.
- d) Transfer manifest updates to the VMDB at IDR Annex 1 CR initiation and approval.
- e) Maintain a history log of data exchanges with all other data systems including date of transfer, content including CR number, and external system name. This log shall be accessible to NASA electronically.
- f) Archive all active flight manifests weekly including working manifest files and approved manifest files.
- g) Maintenance of external interfaces documentation including Book Coordination of ICD's with partners and other databases as defined in 4.1.(d).

Interfaces are defined in:

- Mission Integration Database Application System (MIDAS) to Cargo Integration Data Management Tool (CIDMT) Interface Control Document, (SSP 50647)
  - MIDAS to Vehicle Master Data Base (VMDB) ICD SSP (50174)
  - MIDAS to Stowage Integration System (ISAC-324-REQ-84)
  - MIDAS to Cargo Flow, Maintenance, and Inventory Database (SSP 50173 (Russian manifest interface)).
- h) Maintenance of existing users guides or provide equivalents (reference MIDAS User Training Guides (ISAC-324-UG-83)) for major functional areas of the tool and develop users guides for new functionality per the Users Guides for MIDAS (DRD B-MI-01). Develop, maintain, and conduct training courses for new MIDAS users for each primary functional area.
  - i) Serve as points of contact for the MIDAS user community when problems or issues with the application are identified.
  - j) Perform independent integration testing of MIDAS software releases.
  - k) Perform low-level data and "bug" analysis and support "bug" resolution.

#### 4.1.1.3.6 Parts Data Maintenance (CF)

The contractor shall maintain the electronic catalog of generic part information within the MIDAS tool. This includes:

- a) Review of submitted MR information to identify changes to the parts catalog and validation of changes with the appropriate authoritative source (hardware owner organization) to ensure the mass property information is correct. Part information shall be updated based on validated date provided by authoritative sources within 2 working days of receipt of correct information.
- b) Addition of new parts to the catalog when new parts are identified on a MR and place holders in the catalog when requested to initiate assignment of operations nomenclature.
- c) Update existing part information based on validated date provided by authoritative sources within 2 working days of receipt of correct information.
- d) Provide notification of updates to part information to manifest developers and to appropriate personnel as defined by NASA as they occur. Records of transmitted notifications shall be retained for historical purposes using the existing MS-ACCESS database or equivalent. Data should include: Name of person making change, description of the change, justification for making the change, and the flight manifest that are potentially affected by the change. Retained historical information shall be retrievable electronically by part number or by name of affected flight.

#### 4.1.1.3.7 Hazard/Toxicology (Haz/Tox) Data Collection (LOE)

- a) Coordinate collection and review of Haz/Tox codes with the JSC Toxicologist, safety, and other affected organizations. Review Hazard material Data Tables for consistency with MIDAS data.
- b) Develop Appendix D, Haz/Tox Data for U.S. Hardware, to the IDR Annex 1 at specified manifest milestone releases.

#### 4.1.1.3.8 MIDAS DEVELOPMENT

#### PERIOD OF PERFORMANCE: January 1, 2004 through September 30, 2005

The contractor shall provide the following modifications/enhancements to the current MIDAS tool, including update of the affected software documentation and training material.

#### MIDAS R8.6, March 26, 2004

- a) Operational Nomenclature Enhancement: Provide a mechanism for loading of the MIDAS parts catalog with information provided in a fixed format EXCEL file containing Operation Nomenclature information.
- b) Imagery Tool Enhancements: Enhance the existing imagery tool to allow loading of imagery requirement information from a fixed format file. Provide a mechanism to allow designated IP Points of Contact to review Imagery Requirements from their team prior to submittal to the Imagery Group. Provide a mechanism to relate imagery requests to requirement requests.
- c) Cargo Physical Processing (CPP) Tool functions: Provide modifications to the existing Hardware Accountability Matrix Reports.
- d) IP Interfaces: Modify the Russian interface to implement required changes as specified in SSP 50173, the MIDAS to Cargo Flow, Maintenance, and Inventory Database Interface Control Document (ICD).
- e) BITS changes: Modify the BITS system to allow users to submit bar code requests for parts that do not exist in the MIDAS parts catalog. Modify the IMS data to provide required hazardous material information to MOD.
- f) Manifest information update: Modify the software to provide a more consistent "last modification date" for manifest information.

- g) Interface with contract C support database: Develop an ICD to define the required interface to the Contract C database. Data will include current Stowage Integration System data as well as Inventory Management System data. As built data will be returned to MIDAS from this database. The implementation of this interface will be in R8.7.
- h) Manifest/containment changes: Modify the MIDAS ICON management software in the functional manifest tool to better reflect activities that take place in the containment manifest tool.

**MIDAS R8.7, September 30, 2004**

- a) Operational Nomenclature Enhancement: Provide additional fields and user screens to support tracking of OP NOM "expiration."
- b) Imagery Tool Enhancements: Implement minor updates based on user feedback from using the system during the Spring.
- c) Cargo Physical Processing (CPP) Tool functions: Provide a new set of reports to support collection of CPP metric information and a new IP report to support CPP. Modify user screens as necessary to support these new functions.
- d) IP Interfaces: Provide suggested methods of interfacing with JAXA for future Japanese data flow. Provide modifications to existing ANNEX 1 report and potentially a new report to better support the IP manifesting process.
- e) Interface with contract C support database: Implement the interface as per the ICD that defines the required interface to the Contract C database. Data will include current Stowage Integration System data as well as Inventory Management System data. As built data will be returned to MIDAS from this database.
- f) IP Shipping: Provide additional fields in parts catalogue and reports to support generation of documentation needed in support of international shipping.
- g) Requirement Request System: Provide new metric reporting capability.
- h) Waste Management: Provide enhancements to the MIDAS tool to support the waste management area including file transfer of parts catalog data and updates to MRTS to enhance usability.
- i) Barcode/Inventory Tracking System (BITS): Modify BITS system to accommodate change required to support new "COMBO" label option..
- j) Electronic signatures: Evaluate usage of electronic signatures to streamline Manifest Request approval and provide recommended implementation plan.
- k) Return Manifest Disposition Plan System: Modify RMDP system to utilize those changes incorporated into the system for containment.

**MIDAS R8.8, March 2005**

- a) On-Orbit Planning System (OOPS): Integration of the OOPS functionality into the MIDAS application in support of Volumetric Assessments, eliminating an MS Access database and producing input data for the Volumetric Assessment Tool.
- b) MR Workflow Enhancements: Introduction of electronic feedback, redline, and signature approval of MRs eliminating the purpose of a paper MR.
- c) Waste Management Enhancements: MIDAS R8.7 implements the first phase of a Waste Manifest Request (WMR) processing system. R8.8 will extend that functionality to include additional features and improvements resulting from initial use of the system.

**MIDAS R8.8.1, May 2005**

- a) Interface with contract C support database: Implement the interface as per the ICD that defines the required interface to the Contract C database for transfer of as-packed stowage data from the contract C database, into the MIDAS application.

**MIDAS R8.9, September 2005**

- a) Utilization Enhancements: Additional fields will be added to identify more specifically the nature of the hardware being manifested.
- b) MR Definition Enhancements: The MR definition software will be updated to allow MR transactions to reference a new transaction type "PARENT" that represents the existing part number on the target manifest that should serve as the parent of the part being added. The MR Loader will be enhanced to recognize the Parts Catalog as a valid set of default values for a part specified in the MR transaction which otherwise may be missing many of the normally required attributes
- c) MR Report: An MR report will be developed to report, in a format similar to the MR Loader, the as-approved transaction information for an MR.
- d) Waste Management Enhancements: R8.9 will extend the Waste MR functionality to include additional features along with the ability to automatically generate a Manifest Request from one or more approved WMRs, eliminating re-entry of data.
- e) Cargo Physical Processing (CPP) Tool Enhancements: With the deployment of the POWER to MIDAS interface in R8.8.1, the Return Manifest Disposition Plan (RMDP) data will be loaded into MIDAS from the POWER system. This data, when compared against the existing manifest data within MIDAS, will be used by MIDAS to automatically generate an "as-returned" MR to resolve the differences between the POWER manifest and the MIDAS baseline.

**4.1.1.4 Inventory Management System (LOE)**

**4.1.1.4.1 Inventory Management System Processes**

The contractor shall:

- a) Coordinate IMS requirements and resolution of issues across the program including IMS software, hardware (barcode reader) and data collection in accordance with SSP 50007, Inventory Management System Requirements. Primary contacts include MOD IMS personnel, cargo mission contract personnel, crew and IP's. Coordination will be in the form of crew debriefings, review of IMS related schedules, correspondence, and meetings. Report problem areas to NASA along with recommended approaches to resolution.
- b) Coordinate, facilitate, and conduct upon NASA request IMS meetings, teleconferences and TIMs (including Bilateral Inventory Management System WG (BIMSWG) meetings). IMS meetings are nominally held twice per month at JSC, teleconferences once per month, and TIMs three times per year (twice per year in Moscow). Products are provided to the NASA Co-Chairperson of the BIMSWG.
- c) Make recommendations for improvements and evaluate proposed changes to IMS processes, hardware and software across the ISS program, including IP's. Provide reports to NASA Co-Chairperson of the BIMSWG.

**4.1.1.5 CREW PROVISIONING/HOUSEKEEPING (CF)**

**4.1.1.5.1 Crew Provisioning Management (CF)**

The contractor shall interface with program representatives such as IP's, crew, hardware providers, manifest representatives, launch package and increment management teams to perform Crew Provisioning Management. All changes to crew provisioning policies, international agreements, and directing of NASA and non-MIC personnel shall be done through the NASA crew provisioning POC. Crew provisioning planning activities shall be performed as defined in the Crew Provisioning Management Plan (CPMP) (SSP 50409) and SPIP Volume 2 (SSP 50200-02, Section 5.5). The contractor shall limit dissemination of information regarding individual crew clothing, personal hygiene, and crew preference items to persons with a direct requirement for the data to perform their work and approval authorities as defined in the GGR&C (SSP 50261-01). The contractor shall:

- a) Manage crew provisions:
  - 1) Conducting Crew Provisioning WG (CPWG) meetings (nominally semi-monthly) to obtain ISS community agreement on increment specific crew supply requirements, delivery plan, and schedules, address changes to the plans, coordinate response to feedback from crews, and share other planning related information. These include telecons and TIM's to integrate partner crewmember supplies including agenda development and protocols. TIMs are nominally twice per year.
  - 2) Recommending and coordinating updates to the Charter for the Crew Provisions WG (CPWG) (ISSP-PPD-517).
  - 3) Book Coordinating the CPMP (SSP 50409) per the tasks defined in 4.1.(d).
  - 4) Coordinating process inputs and providing updates to SPIP Volume 2 (SSP 50200-02, Section 5.5) and the MIT (SSP 50489) to the NASA crew provisions point of contact. Upon NASA concurrence, provide to the Book Coordinators according to their schedules (nominally once per year).
  - 5) Update and report crew provisions team schedules to NASA monthly (see Integrated Mission Integration Office Schedules (DRD B-PC-06)).
- b) Develop and maintain the detailed manifest requirements for crew provisions:
  - 1) Coordinate crew provision requirements with Russian representative and the crew office for all crew provision items including personal hygiene items, clothing, towels, wipes and office supplies for each ISS crew.
  - 2) Generate and coordinate MR's for crew provision items launch and return.
  - 3) Provide detailed crew provision requirements through NASA Crew Provisioning OPR to supplying contracts. Coordinate fit checks, packing and delivery requirements (including customs paperwork).
  - 4) Provide re-plan projections to support what-if analyses for changes to the flight and/or increment operations, maintenance/sustaining engineering and R&D plans.
- c) Manage resupply of crew consumables:
  - 1) Track actual usage of consumables by the on-orbit crew through review of IMS and request of crew audits to validate proper resupply.
  - 2) Evaluate crew on-orbit usage of crew provisions to identify trends and identify deviations between projected usage and actual usage of crew supplies.
  - 3) After coordination with the CPWG, develop presentations and provide requests to change usage rates and allocations to the RIP. Provide usage rate updates to the GGR&C (SSP 50261).
  - 4) Provide each ISS crew with training information on planned usage rates including listings for crew notebooks and cue cards for on-orbit.
- d) Coordinate requirements for new crew provisioning items procurement and modifications to current crew provisions with the NASA Office of Primary Responsibility (OPR) or designee.
- e) Book Coordinate the Joint Crew Provisioning Catalog (SSP 50477) per the tasks defined in 4.1.(f).
- f) Curate the crew provisions website as defined in 4.1 (f).
- g) Perform the following mission and post-mission activities:
  - 1) Solicit on-orbit crew resupply requirements prior to each flight (reference ISS Resupply Request form, Appendix H, Form 4).
  - 2) Respond to crew requests for additional supplies by assessing availability/feasibility, and coordinating response with NASA IM, MWG and other affected organizations.

- 3) Conduct post increment crew debriefing for provisions according to the technical debrief process defined in Post Mission Guidelines (SSP 50168).
- 4) Inventory returned crew provisions and retain records of actual usage for use in task 4.1.1.5.1 (c).
- 5) Develop, coordinate and provide recommended lessons learned for each increment to NASA crew provisioning POC according to the processes defined in Post Mission Guidelines (SSP 50168). Upon NASA crew provisioning POC concurrence, provide to IMT.
- 6) Update launch and return requirements to correct for actual usage.

#### 4.1.1.5.2      **RESERVED**

#### 4.1.1.5.3      ***HOUSEKEEPING (HK) INTEGRATION (CF)***

The HK Integration function coordinates the requirements and materials for HK activities on the ISS. The task requires the contractor interact with and coordinate with IP and program representatives such as hardware providers crew, manifest representatives, launch package and increment management teams.

The contractor shall:

- a) Provide the following documentation and meeting support:
  1. Develop, integrate, document and manage HK activity requirements. Document in the appropriate ISS Program documentation.
  2. Document the HK definitions, roles and responsibilities, operational policies and detailed internal processes. Integrate inputs from technical experts, coordinate updates between submitters and reviewers document issues and resolutions and maintain technical consistency of the document. Organize and conduct meetings to evaluate changes, distribute actions and track action item closure.
  3. Review and coordinate with MOD flight operations for HK products (i.e. SODF, (JSC 29229) to ensure proper requirements are implemented and constraints are complied as defined in the ISS Program documentation.
  4. Develop, integrate, and provide coordinated HK inputs to SPIP Volume 2 (SSP 50200-02) Book Coordinators according to their schedule.
  5. Curate the HK website. Post updated HK integration products to website.
  6. Coordinate agenda inputs, track actions, manage action closure for HIWG meetings. Conduct HIWG meetings. Collect status from team members and provide minutes from HIWG meetings. Incorporate changes in policy or process on meeting discussions into subsequent revision of HK documentation.
  7. Coordinate and facilitate telecons and TIM's with Partners, including coordination of action item closure recommendations for agenda topics, provision of presentation materials and development of protocols. Approximately 1 telecon per month and one TIM per year at alternating locations between JSC and Partner facility.
- b) Analyze housekeeping consumable projections versus actual data obtained from IMS, crew audit and crew debrief. Provide recommendations to the NASA Consumable Lead for manifest of consumable resupply. Manage integrated consumable requirements, track adherence to stowage allocations, coordinate planned resupply including generation of HK MR's and review manifest requests that impact HK consumables for consistency with HK planning.
- c) Present various topics, such as projected/actual HK consumable usage rates, inventory on-orbit, and projected stowage volume, specific safety or risk issues, and R&D issues to internal and external review groups, per their request.

- d) Provide detailed HK consumable requirements to NASA and supplying contractor and coordinate fit checks, packing, bench review, and delivery requirements with NASA and the Government Furnished Equipment (GFE) sustaining contractors.
- e) Manage and integrate the following mission and post-mission activities:
1. Provide on-call HK support to the IMC. Including provision of recommended response to chits that impact HK consumables, tasks and/or stowage.
  2. According to the process defined in Post Mission Guidelines (SSP 50168), develop and coordinate HK crew debrief questions, providing recommendations for approval one week prior to due date, conduct and document results. Present debrief results to HIWG team members and incorporate changes in policy, process, usage rate or stowage allocations into the appropriate ISS Program and internal NASA documents.
  3. Generate and coordinate recommended HK lessons learned for each increment according to the processes defined in Post Mission Guidelines (SSP 50168). Submit recommendations to HIWG for discussion. Forward lessons learned to IM or LPM upon approval.
  4. Identify and track off-nominal HK consumables usage for additional stowage and disposal requirements. Coordinate identified issues, which may impact IP/P or GFE consumable resupply or stowage allocations with the appropriate organizations. Incorporate into analysis, as required.
  5. Track and document the consumed life of HK life-limited hardware/ supplies to support assessment of impacts on resupply planning and on-orbit operations.
- f) Document hardware/consumable data in the Joint Crew Provisioning Catalog (SSP 50477)
- g) Support HK hardware development and procurement in accordance with Flight Crew Integration Standard (NASA-STD-3000/T) (SSP 50005):
1. Review, evaluate, integrate, and coordinate HK materials requirements and constraints. Document in catalog.
  2. Develop and coordinate requirements for the R&D of new or improved HK equipment/supplies, when approved by HIWG.
  3. Develop and coordinate requirements for procurement of new or improved HK supplies, when approved by HIWG.

#### 4.1.1.6 Imagery

The imagery function manages imagery requirements to support the acquisition, processing, and distribution of imagery of ISS hardware as it is built, assembled, integrated, and operated. The contractor shall perform ISS Imagery program processes as defined in SPIP Volume 2 (SSP 50200-02) Section 5.4 and outlined in the following tasks.

##### 4.1.1.6.1 Imagery Processes (CF)

The contractor shall interface with program representatives, partners, and NASA institutional organizations to maintain ISS Imagery processes:

- a) Book Coordinate the generic program Imagery requirements documentation as defined in 4.1(d) (nominally once per year).

- ISS Hardware Preflight Imagery Requirements (SSP 50502),
- Preflight Imagery Requirements for NASA-Provided ISS GFE (SSP 50486)

- Return, Processing, Distribution and Archiving of Imagery Products from the ISS (SSP 50521)

- b) Provide Imagery updates to SPIP Volume 2 (SSP 50200-02), MIT (SSP 50489), GGR&C (SSP 50261) and MIDS Blank Book (SSP 50622-02) to NASA Imagery WG (IWG) Chairperson. Upon concurrence, provide to Book Coordinators according to their schedules (nominally once per year).
- c) Coordinate, facilitate and conduct upon request telecons and TIM's with Partners, including coordination of action item closure, recommendations for agenda topics, provision of presentation materials, and development of protocols. Approximately three telecons are held per month and face-to-face TIM's are held twice per year at alternating locations between JSC and IP facilities.
- d) Participate in IWG and other meetings to perform Imagery functions. The contractor shall provide status of their products, responses to assigned actions, and identify open issues affecting their Imagery tasks.
- e) Update imagery team schedules and report to NASA (see Integrated Mission Integration Office Schedules (DRD B-PC-6)).
- f) Provide administrative support to the IWG/MIWG as defined in 4.1 (e).
- g) Update program Imagery website as defined in 4.1 (f).

#### 4.1.1.6.2 Pre-Flight Imagery (CF)

The contractor shall provide flight specific pre-flight coordination functions:

- a) Review inputs from hardware organizations for completeness and control the program Preflight Imagery Plan (PFIP) for each flight through the IWG. The content of this document is defined in the MIDS Blank Book (SSP 50622-02) and the schedule template is defined in the MIT (SSP 50489). This document is delivered by hardware providers and typically includes approximately 2500 images for assembly flights and 250 for logistics flights.
- b) Coordinate resolution of Preflight Imagery Discrepancy Reports between customers and providers. Discrepancies are noted on approximately 10% of images.
- c) Track and report pre-flight imagery submittal status to support the CoFR Process as defined in MIO work instructions.
- d) Coordinate bench review and contingency imagery requirements with Cargo Mission Contractor.

#### 4.1.1.6.3 On-Orbit Imagery (CF)

The contractor shall work with launch package, increment, operations and crew representatives to perform the following tasks:

- a) Book Coordinate the program on-orbit imagery requirements (operations, sustaining engineering/maintenance, and R&D) in IDR Annex 3 as defined in 4.1(d). Content of the IDR Annex 3 is defined in the MIDS Blank Book (SSP 50622-02) and the schedule template is defined in MIT (SSP 50489).
- b) Review and validate requests and distribution for imagery products through program websites according to the processes defined in Return, Processing, Distribution and Archiving of Imagery Products (SSP 50521). Validation includes identification of organization supported, role in ISS Program, and NASA POC to insure distribution is for authorized purposes.

- c) Coordinate and maintain downlink procedures for distribution of Electronic Still Camera (ESC) Imagery with MOD and IMC personnel. Procedures are defined in the ESC Ground Processing Requirements document and the Flight Control Operations Handbook (FCOH) (JSC 29229 Section 12.7).
- d) Provide on call support to the IMC to provide recommended responses for imagery related chits.
- e) Report requirements status to support the CoFR Process as defined in MIO work instructions.
- f) Develop, coordinate and provide recommended lessons learned after each flight/increment to the IWG according to the processes defined in Post Mission Guidelines (SSP 50168). Upon IWG concurrence, provide to LPM and IM.

#### 4.1.1.6.4 Special Requirements and Technology Advancement (LOE)

The contractor shall perform the following tasks:

- a) Provide recommendations for upgrades to ISSP facilities to ensure the most efficient use is being made of imagery resources and R&D advancements.
- b) Provide imagery coordination and recommendations for unique requirements such as commercialization, SDTO's, and imagery support to ISS visitors including documentation such as MR's, CR's, SDTO's, project plans, and presentations.
- c) Maintain program knowledge of new imagery technology such as digital imaging, high definition television, transmission and storage techniques.

#### 4.1.1.7 Program Operations Integration (CF)

4.1.1.7.1 The contractor shall assist in the coordination and processing of operational, maintenance/sustaining engineering, and R&D flight rules, in support of ISSPO participation on the Flight Rules Control Board. Specific activities required are:

- a) Serve as ISSPO Point of Contact for all flight rule evaluations.
- b) Identify appropriate ISSP evaluators and distribute Evaluation Packages for internal evaluations.
- c) Contact evaluators for status and to inform them of overdue evaluations.
- d) Develop and maintain flight rules evaluation tracking system.
- e) Consolidate all completed evaluations, comments, and issues and submit them to ISSP Flight Rules Control Board representative for approval.
- f) Provide technical support during Flight Rules Control Board meetings.

4.1.1.7.2 The contractor shall be the Book Coordinator (as defined in 4.1(d)) for the following program documentation, which will nominally be updated once per year:

- a) SPIP Volume 1--Program Management Plan (SSP 50200-01)
- b) SPIP Volume 2--Program Planning and Manifesting (SSP 50200-02)
- c) Space Station Interior and Exterior Operational Location Coding System (SSP 30575)

- d) CoFR Process Document (SSP 50108)
- f) ISS MIT (SSP 50489) including MIT schedules as described in section 1.2.5.2
- g) Onboard Information Technology Operations Concept (SSP 50656)
- h) Post Mission Guidelines
- i) Program Management Operations Integration Process Annex A: Facility Requirements Process (SSP 50650-ANX A)
- j) MIDS BB (SSP 50622-02)
- k) Ground Operations Support Plan and Personnel List (GOSSPL) including the overview schedule and contact information for personnel supporting the launch and landing for each ISS crew rotation
- l) Provide schedules for special projects as needed as described in 1.2.5.2

**4.1.1.7.3** The contractor shall be responsible for the overall integration of the SPIP volume set. Specifically, the contractor shall:

- a) Ensure the SPIP maintains technical, management, and schedule consistency across all volumes
- b) Maintain and report top-level status of updates and changes to all SPIP volumes (SSP 50200-xx)
- c) Lead resolution of cross volume conflicts, if any.

**4.1.1.7.4** The contractor shall be responsible for coordinating changes to SPIP Volume 1, Annex C (SSP 50200-01 Annex C) in support of the Mission Integration and Operations Office.

**4.1.1.7.5 (LOE)** The contractor shall perform ISS and/or related R&D special projects/actions in support of program office objectives. Nominally there will be two to three such projects per year. Specifically, the contractor shall:

- a) Assist in developing the definition and scope of the assigned special project/action.
- b) Establish/develop agendas, schedules, analyses, reports, presentation charts and other reference materials.
- c) Track, coordinate, and report status of issue resolution plans.
- d) Consolidate all completed evaluations, comments, and issues into final form and then submit them to the NASA Manager for approval. Final document quality shall be suitable for presentation to Senior NASA Management.

**4.1.1.7.6** The contractor shall serve as POC for CM CR processes and evaluations and manage the office specific CR review process including tracking of evaluations, consolidation of comments and identification of issues.

**4.1.1.8** Reserved

**4.1.1.9** On-Orbit Stowage and Waste Management

*On-orbit stowage includes the integration of all on-orbit stowage requirements across the ISSP.*

**4.1.1.9.1 INTERNAL STOWAGE CAPABILITIES AND CONFIGURATION (CF)**

The contractor assumes responsibility for maintenance and future development of internal stowage products and services required to manage internal ISS stowage. The task requires the contractor interact and coordinate with program representatives such hardware providers, manifest representatives, crew, launch package and increment management teams.

To accomplish the internal stowage capabilities and configuration task, the contractor shall:

- a) Perform the following stowage management functions:
  1. Book Coordinate (as defined in 4.1(d)), Generic On-Orbit Stowage Capabilities and Requirements (OSCAR) (SSP 50621) and flight appendices (SSP 50621 –XX). Update Generic OSCAR annually.
  2. Provide inputs to CoFR as defined in MIO work instructions for on-orbit stowage plan verification and cargo translation through the ISS and to/from visiting vehicles. Coordinate with Cargo Mission contractor to verify as-stowed configuration is used for cargo to be translated to/from visiting vehicles in packing material.
  3. Generate presentations and provide technical explanation of stowage processes and lessons learned to IPs and other customers in the development of their on-orbit stowage requirements and capabilities for new pressurized modules.
  4. Coordinate, integrate and document on-orbit stowage capabilities for all ISS elements. Capability shall be documented in SSP 50621, Generic On-Orbit Stowage Capabilities and Requirements (OSCAR).
  5. Coordinate, facilitate and conduct upon request telecons and TIM's with Partners, including coordination of action item closure, recommendations for agenda topics, provision of presentation materials and development of protocols. Approximately 4 telecons per month and 4 TIM's per year at alternating locations between JSC and Partner facility.
  6. Develop, document, and maintain stowage integration tools and electronic interfaces with applicable NASA databases and software applications.
  7. Curate the stowage website.
  8. Maintain stowage team schedules Integrated Mission Integration Office Schedules (DRD B-PC-06).
- b) Manage the following stowage planning activities:
  1. Review and analyze manifest requests for compliance with documented on-orbit stowage allocations. Document and report results to IMT. (Approximately 100 MRs per month).
  2. Review requirements and provide technical assessments and analysis for translation of cargo between visiting vehicles and ISS and internal to ISS. Document results and provide data to LP and IM teams.
  3. Produce approximately four on-orbit stowage hardware mock-ups per year to support translation analysis and general stowage planning and verification.
  4. Provide technical stowage configuration and constraint data in support of crew training. This effort requires approximately 8 hours per shuttle mission.
- c) Manage and integrate the following mission and post-mission activities for internal stowage:
  1. Document and track cargo allocations in support of IMT.
  2. Perform assessments and analysis of stowage configuration and available stowage locations, as required. Report usage of increment specific operational and R&D storage allocations by category to IMT. Report comparison of stowage requirements vs. allocations to IMT and MIOCB and to RIP if allocations are exceeded.
  3. Provide real-time on-console IMC support for key stowage activities and on call support at other times for on-orbit stowage issues and problem resolution.

4. According to the processes defined in the Post Mission Guidelines (SSP 50168), develop and submit recommended debrief questions to Stowage Integration Manager one week prior to submittal, conduct document minutes from debrief. Incorporate changes to documentation and planning as approved by Stowage Integration Manager.
5. Develop and coordinate candidate lessons learned for each increment according to the processes defined in the Post Mission Guidelines (SSP 50168). Submit recommendations to Stowage Integration Manager. Forward lessons learned to Increment Manager or LPM upon approval by Stowage Integration Manager.

#### 4.1.1.9.2 Tactical Internal & External Volume Configuration (CF)

The contractor shall document the transition of ISS Internal Volume Configuration (IVC) plans from strategic to tactical in the baseline Increment Definition and Requirements Document (IDRD). The contractor shall document IVC updates in the IDRD and coordinate with the ISS Program Office IVC Working Group (IVCWG) and Increment Management Team (IMT). Requirements include the following IVC tasks:

1. Transition strategic plans to the tactical timeframe. Review integrated internal volume configuration assessments and topologies and report findings to the IVCWG.
2. Define criteria for evaluating and prioritizing internal volume demands in accordance with Flight Crew Integration Standard (NASA-STD-3000/T) (SSP 50005). Criteria shall be developed in cooperation with the IVCWG, and U.S. and IP hardware providers. The contractor shall document defined criteria in the Generic Ground Rules and Constraints (GGR&C), (SSP 50261-01), Section 3.12. The contractor shall submit recommended GGR&C changes to GGR&C book coordinator and coordinate resolution of all technical issues and concerns for programmatic change approval.
3. Maintain the IVC website.
4. Provide proposed configurations identified during the tactical phase to the IVCWG for analysis and review resulting analysis. Coordinate with increment teams. Develop and coordinate briefings and present to IMT, Requirements Integration Panel, Mission Integration and Operations Control Board or other program meetings.
5. Identify, work to resolution and document operational constraints, GGR&C violations and accepted protrusions during tactical planning and real-time operations. Identify new flight rules and provide inputs to ISSP point of contract for flight rule evaluations.
6. Provide IVC input to Certification of Flight Readiness (CoFR) process including GGR&C waivers.
7. Update tactical IVC team schedules in accordance with DRD B-PC-06.
8. Identify and submit IVC questions for crew debrief in accordance with the Post Mission Guidelines (SSP 50168).
9. Develop, coordinate and provide recommended lessons learned according in accordance with the Post Mission Guidelines (SSP 50168).
10. The contractor shall review external configuration products to identify areas of interest bridging strategic to tactical external configuration planning as follows: :

- a. Identify and document available and used external allocateable stowage locations and coordinate with the IMTs.
- b. Review products generated by the Assembly and Configuration Team to identify potential conflicts and issues to the real-time and tactical external standard and non-standard stowage plan.
- c. Identify and coordinate the resolution of actions and issues that cross increments or that impact the tactical and/or real-time operations planning with the Configuration WG. Provide recommendations to the NASA Stowage point of contact for resolution.

#### **4.1.1.9.3 Plug-In Plan (CF)**

The contractor shall perform the following ISS Plug-in Plan tasks:

- a) Provide analysis of the ISS and R&D mission-unique power, data and video plug-in plans for the on-orbit ISS internal environment and develop cable routing diagrams. Updates provided for each shuttle mission to ISS.
- b) Provide real-time on-console or on-call support to ISS operations with assessments and recommendations to the FCT for plug-in of equipment and cable routing and problem resolution.
- c) Integrate and document generic ISS power, data, and video connectivity capabilities and requirements for all modules. Book Coordinate Generic On-Orbit Plug-in Plan (PIP) Capabilities and Requirements (SSP 50627) document.
- d) Integrate and document ISS power, data and video connectivity requirements for systems and R&D hardware. Document stage-unique requirements and capabilities for all modules and post to IVC website.
- e) Curate the Plug-in Plan websites.
- f) Provide Plug-in Plan inputs to CoFR process. This includes GGR&C waivers, and ISS Plug-in Plan verification.
- g) Update Plug-in Plan schedules monthly (DRD B-PC-06).
- h) Identify and submit Plug-in Plan questions for crew debriefs and recommended lessons learned according to the processes defined in the Post Mission Guidelines (SSP 50168).

#### **4.1.1.9.4 Waste Management (CF)**

The Waste Management (WM) function coordinates waste removal supplies and disposal options within NASA and the IP's. This task requires that the contractor interact with and coordinate with program representatives and WGs such as hardware providers, crew, manifest representatives, launch package and increment management teams.

The contractor shall develop processes and products that will be used consistently across all of the increments.

In accordance with the processes defined in SPIP Volume 2, Section 5.4 (SSP50200-02) and the Management Plan for Waste Collection and Disposal (SSP50481), the contractor shall:

- a) Provide the following documentation and meeting support:
  1. Perform the Book Coordinator function for Management Plan for Waste Collection and Disposal (SSP50481) as defined in 4.1(d). (nominally once per year)
  2. Develop, integrate and provide coordinated WM inputs to Book Coordinators according to their schedules for SPIP Volume 2 (SSP 50200-02), GGR&C (SSP 50261) and MIDS Blank Book (SSP 50622-02).
  3. Coordinate, facilitate and conduct upon request telecons and TIM's with Partners, to insure partner compliance with SSP 50005 section 10.11.3 and coordinate operations including coordination of action item closure, recommendations for agenda topics, provision of presentation materials and development of protocols.
    - For Russia, approximately 2 telecons per month and TIM's twice per year at alternating locations between JSC and Russia.
    - For ATV and HTV approximately 2 telecons per month, within six months of flight and TIMs once per year for each vehicle.
  4. Coordinate agenda inputs, track actions and manage action closure for Trash/Waste Integration Group (TWIG) meetings. Attend TWIG meetings. Collect status from team members and provide minutes from TWIG meetings. Incorporate changes in policy or process that are approved by TWIG Chairperson based on meeting discussions into subsequent revision of Management Plan for Waste Collection and Disposal (SSP 50481).
  5. Curate the WM website. Post updated products to WM website.
  6. Provide WM input to CoFR process as defined in MIO work instructions.
  7. Maintain WM team schedules Integrated Mission Integration Office Schedules (DRD B-PC-06)
- b) Analyze waste generation and consumable projections versus actual data obtained from IMS, crew audit and crew debrief. Provide recommendations to TWIG Chairperson for manifest of waste container consumable resupply and manifest of waste on return vehicles. Manage waste management hardware container requirements. Track adherence to stowage allocations and coordinate planned resupply and disposal through the manifest process.
- c) Present integrated assessments, including waste volume and disposal status, specific safety or risk issues and R&D issues to internal and external review groups, per their request.
- d) For U.S. items that are candidates to be disposed of on Progress, Soyuz, ATV and HTV.
  1. Collect WM data in support of Requirements for IP Cargoes Transported on Progress, Soyuz, ATV, and HTV Vehicles.
  2. Obtain documented hardware owner validation of disposal request.
  3. Once approved by the TWIG Chairperson, LPM and IM, prepare package for submittal to IP including drawings, dimensions and masses as required.
  4. Coordinate with TWIG Chairperson and incorporate results into integrated assessments.
  5. Provide completed, approved package to IP for evaluation.
- e) Manage and integrate the following mission and post-mission activities:
  1. Provide real time and on-call WM support to the IMC as required. Including provision of recommendation responses to chits that impact waste consumables, stowage and/or disposal.
  2. Develop, coordinate and provide candidate WM lessons learned for each increment. Submit recommendations to TWIG for discussion. Forward lessons learned to IM or LPM upon approval by TWIG Chairperson according to the Post Mission Guidelines (SSP 50168).
  3. According to the process defined in the Post Mission Guidelines (SSP 50168), develop and submit recommendations for debrief questions to TWIG Chairperson one week prior to final submittal; conduct WM post increment crew debriefing and document results. Present debrief results to TWIG team members and incorporate changes in policy, process, usage rate or stowage allocations approved by TWIG Chairperson into Management Plan for Waste Collection and Disposal (SSP 50481).

4. Identify and track off-nominal waste consumables usage or additional stowage and disposal requirements. Coordinate identified issues, which may impact IP/P or GFE consumable resupply, stowage allocations or disposal capability with the appropriate organizations.
  5. Track and document the consumed life of WM life-limited hardware/supplies to support assessment of impacts on maintenance planning and on-orbit operations.
  6. Coordinate de-integration requirements for waste and/or waste consumables returned via shuttle with the Cargo Mission Integration Contractor.
- f) *Document hardware/consumable data in the Management Plan for Waste Collection and Disposal (SSP50481). Incorporate updates and remove items no longer applicable.*
- g) *Support WM hardware development and procurement:*
1. *Review, evaluate, integrate and coordinate waste container requirements and constraints.*
  2. *Develop and coordinate requirements for the R&D and procurement of new or improved WM equipment/supplies, when approved by TWIG Chairperson.*

4.2 *Reserved*

5.0 *RESERVED*

## 6.0 SAFETY AND MISSION ASSURANCE (CF)

The Agency Safety Initiative establishes the NASA safety hierarchy – the order NASA will use to prioritize its safety efforts. The safety hierarchy is as follows:

1. Safety for the Public – NASA absolutely must protect the public from harm.
2. Safety for Astronauts and Pilots – NASA has to protect them as they expose themselves to risk in high hazard flight regimes.
3. Safety for NASA Workforce – NASA is responsible for providing a safe and healthful workplace.
4. Safety for High-Value Equipment and Property – NASA is a steward of the public's trust.

By focusing on the safety of NASA's mission and operations, NASA will improve quality and decrease cost and schedule.

### 6.1 S&MA Management

#### 6.1.1 Mission Assurance and Risk Management Plan

The contractor shall develop, maintain, and implement a Mission Assurance and Risk Management (MA&RM) Plan in accordance with Mission Assurance and Risk Management Plan (DRD B-SA-01).

#### 6.1.2 AS9100

The contractor shall establish and maintain a Quality Management System that complies with Model for Quality Assurance in Design/Development, Production, Installation and Servicing (AS9100). Third party certification/registration is not required. If the contractor is AS9100 registered and subsequently changes

registrars, loses registration status, or is put on notice of losing registration status, the contractor shall notify the NASA CO within three (3) days of receiving such notice from the registrar.

#### **6.1.3 Audit/Surveillance**

The contractor shall provide access to data, personnel, and facilities for government audit/surveillance of contractor plans, procedures, and processes when deemed necessary by the government. The contractor shall provide written responses to audit/surveillance findings that are delivered to and accepted by the government.

#### **6.1.4 Mishap Investigating and Reporting**

The contractor shall investigate and report their mishaps in accordance with NASA Procedural Requirements for Mishap Reporting, Investigating, and Record keeping (NPR 8621.1) and NASA Safety Manual with Changes through Chapter 1, 6/19/02 (NPR 8715.3). The contractor shall perform mishap reporting and provide summary data on their mishaps in accordance with requirements at the NASA installation where the mishap occurs:

- JSC-JPG 1700.1, JSC Safety and Total Health Handbook
- KSC-KHB 1710.2, Kennedy Space Center Safety Practices Handbook

All investigation reports shall include a human factors assessment, root cause analysis, and any remedial/corrective actions performed. These reports shall encompass mishaps occurring during the contracted period as follows:

- All mission failures and type A and B mishaps resulting in injury to contractor personnel or equipment damage occurring onsite at NASA facilities and offsite at contractor facilities.
- Type C mishaps resulting in equipment damage onsite at NASA facilities and offsite at contractor facilities.
- Type C mishaps resulting in injury to contractor personnel located onsite at NASA facilities.
- Incidents and close call occurring onsite at NASA facilities.

The contractor shall develop and maintain a current call tree with government contacts for the reporting of a mishap, near-miss incident, equipment problem, or a system going out of specification. The contractor shall use the call tree to report incidents and problems within four hours of the occurrence. Type C injury mishaps occurring offsite at contractor facilities shall be reported in a monthly summary of such injuries.

#### **6.1.5 Safety and Health**

The contractor shall develop and implement a process to ensure that personnel and property will be protected from injury or harm throughout the performance of the contract. The process shall provide for hazardous operation surveillance, hazardous procedure review, and risk assessments associated with deviations from procedures or safety and health requirements. The contractor shall comply with NASA installation safety and health requirements and related processes when performing contract work onsite at NASA installations. The contractor shall develop, implement and maintain a Safety and Health (S&H) Plan in accordance with the Safety and Health Plan (DRD B-SA-02). Upon approval, the S&H Plan shall be incorporated into the contract as Attachment J-3. The contractor shall document the assessments in monthly safety and health

metrics in accordance with Monthly Safety and Health Metrics (DRD B-SA-03) and perform an annual self-evaluation in accordance with Safety and Health Program Self-Evaluation (DRD B-SA-04).

**6.1.6 Lessons Learned**

The contractor shall develop, update, and implement a process to capture, disseminate, and implement mishap related lessons learned, both positive and negative, in accordance with NASA Procedures and Guidelines for Mishap Reporting, Investigating, and Record keeping (NPG 8621.1). For non-mishap related lessons learned, the contractor shall meet NASA Program and Project Management Processes and Requirements (NPR 7120.5) and enter the lessons learned into the government provided database in accordance with JSC Lesson Learned Process (AG-CWI-001). The lessons learned shall be entered within 6 weeks after triggering event, or completion of mishap investigation or hazard analysis evaluation.

**6.2 Reserved**

**6.3 Program Risk**

**6.3.1 Risk Management**

The contractor shall identify risks and provide input to the ISS risk process utilizing Integrated Risk Management Application (IRMA) in accordance with the ISS Risk Management Plan (SSP 50175) and Establishment of the Program Risk Management System (JPD 306). The contractor shall provide training and tools for all MIC employees to effectively and efficiently identify threats and possible risks to successful completion of assigned tasks. The contractor shall coordinate identified risks with NASA counterparts.

**6.3.2 Reserved**

**6.4 Reserved**

**6.5 Reserved**

**6.6 Reserved**

**6.7 Reserved**

## SECTION J-1 APPENDIX A:

### KEY TERMS

#### AUTHORIZED SOURCES

Sources that contain data or information that has been approved by the appropriate NASA program boards, panels, or management level.

#### BOOK COORDINATOR

*A function that provides for developing new documents or updates to existing documents including integrating inputs from technical experts, coordinating updates between submitters and reviewers, documenting resolutions, and maintaining the technical consistency of the document. Tasks also include updating the document using CR's per the agreed upon schedule in the MIT (or NASA approved schedule for items not covered by the MIT), interfacing with CM and DQA, coordinating inputs and tracking communications from the partners regarding the documents and includes development of NDC's for documents that affect RSC-E, and coordinating translations. Also included are coordinating and conducting TCM's, production and distribution of minutes and actions, tracking closures, and developing and making presentations to the MIOCB as required for document CR approvals.*

#### CARGO ELEMENT

A flight element that has physical and/or functional interfaces to the LV.

#### CHIT

Ground Processing CHITs document changes at JSC and KSC for ground processing requirements and Mission Action Request CHITs document real-time operation action requests.

#### CONTROL BOARD

A management forum which establishes and controls changes to the programmatic baseline and associated documentation and provides a forum for resolving related technical and schedule issues. The specific board scope, responsibilities, authority and membership are defined in the charter.

#### CONTROL PANEL

A subordinate forum to a parent control board with delegated responsibility and control as defined in the charter.

#### CURATOR

The person responsible for publishing and maintaining the information on a web home page.

**FLIGHT DATA FILE (FDF)**

Procedures used by Shuttle crew members to perform on-orbit tasks. A complete set of books is produced for each mission that contains generic and flight-unique procedures for nominal and contingency operations.

**FUNCTION**

A separate and distinct action required to achieve a given objective, to be accomplished by the use of hardware, computer programs, personnel, facilities, procedures data, or a combination thereof; an operation that must be performed to fulfill its mission or reach its objectives.

**ELEMENT MANAGER**

Responsible for managing the overall design, development, fabrication, test, and integration of assigned elements. Manages the overall definition, development and implementation of element integration processes in order to deliver functional element end-items to the ISS on orbit and to assure the integrated element satisfies the required architecture and functionality.

**ENGINEERING RELEASE UNIT (ERU)**

A position within the Configuration Management organization that accepts electronic and hard copy data for release to a library system.

**INCREMENT**

The time frame of each crew expedition. The duration of an increment is the time period from the launch of a designated flight crew to the landing of the return vehicle for that crew.

**INTERNAL VOLUME CONFIGURATION (IVC)**

The integrated internal configuration of the ISS including installed, deployed and stowed hardware and materials.

**INCREMENT DEFINITION REQUIREMENTS DOCUMENT**

Documentation of ISS Program requirements for the flights and increments within a planning period. These include the launch dates, traffic plans, top-level manifest, resource allocations, and specific flight/increment requirements.

**ISSP MANAGEMENT CENTER**

A program facility in the MCC to support real-time ISS operations that is staffed and operated by program personnel.

---

## **INFORMATION TECHNOLOGY**

Any equipment or interconnected system or subsystem of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission or reception of data or information that is used by ISSP. IT includes computers, ancillary equipment, software, firmware, and similar procedures, services (including support services), and related resources.

## **INTERNATIONAL PARTNER/PARTICIPANT**

Those non-U.S. space agencies that formally participate in the ISS. International partners include to Canadian Space Agency (CSA), European Space Agency (ESA), National Space Development Agency of Japan (NASDA), and Russian Aviation and Space Agency (Rosaviakosmos). International Participants include the Italian Space Agency (ASI), and the Brazilian Space Agency (AEB).

## **LAUNCH PACKAGE**

Full complement of ISS hardware and software delivered on a flight to the ISS.

## **MANAGEMENT INFORMATION SYSTEM (MIS)**

A computerized information-processing system designed to keep ISSP and other personnel apprised of the most current ISS technical, financial, workforce, schedule and operational information, including issues and risks. MIS links ISS core business issues and goals with the technical aspect of the Program.

## **MISSION INTEGRATION AND OPERATIONS CONTROL BOARD (MIOCB)**

The MIOCB is the board responsible for Mission Integration and Operations products and processes for the ISS. The board may meet in a unilateral, bilateral or multi-lateral mode.

## **MISSION INTEGRATION PLAN (SHUTTLE)**

Document the requirements and constraints for Shuttle operations support to ISS increment operations including ascent and descent, flight requirements for ISS CEs, and joint operations while the Shuttle is attached to the ISS.

## **NOTIFICATION OF DOCUMENT CHANGE (NDC)**

Process developed specifically for Russia to enable documentation updates to proceed with interim approval from the contractor while formal Rosaviakosmos approval is pending.

## **PARTNER**

When used in this document, refers to NASA, CSA, ESA, NASDA, and Rosaviakosmos.

**PAYLOAD**

If not otherwise modified, "payload" in this document refers to an ISSP scientific or technology payload.

**PLANNING PERIOD**

Approximately one calendar year, adjusted by the timing of crew rotations.

**STAGE**

On-orbit configuration of the ISS after each shuttle flight which adds capability to the ISS.

**STATION OPERATIONAL DATA FILE (SODF)**

Procedures used by ISS crew members to perform on-orbit tasks in the USOS and across segments. A complete set of books is produced for each mission that contains generic and increment unique procedures for nominal and contingency operations. These books are contained in an electronic library on ISS. A subset of these procedures is also provided in hardcopy.

**STRATEGIC**

Long term planning that generally transitions to tactical at two years prior to real-time operations.

**TACTICAL**

Period of time from 2 years until implementation phase or "real-time".

**TECHNICAL INTERCHANGE MEETING**

Meetings between two or more ISS Program technical teams to exchange information, develop processes, and work issues.

**TECHNICAL INTEGRATOR**

Function used in the Increment Management Team to support book managers in processing documents providing coordination with CM DQA, and supporting IDR D Blank Book development. Senior administrative assistant.

**TRANSITION PERIOD**

60 day period prior to contract start date.

**VEHICLE**

The whole integrated on-orbit space station (including hardware and software) as it exists today and the future station as it evolves. The vehicle configuration is defined by the particular point in time under assessment or discussion.

SECTION J-1: APPENDIX B

ACRONYM LIST

ANF	Arrival Notification Form
ARISS	Amateur Radio on International Space Station
ASAP	Aerospace Safety Advisory Panel
ASI	Agenzia Spaziale Italiana
ATV	Automated Transfer Vehicle
BCC	Backup Control Center
BHSEALS	Bilateral Hardware/Software Exchange Agreement List
BIMSWG	Bilateral Inventory Management System Working Group
CAD	Computer Aided Design
CAM	Centrifuge Accommodation Module
CEA	Center Export Administrator
CM	Configuration Management
CMM	Capability Maturity Model
CMRD	CM Receipt Desk
CO	Contracting Officer
CoFR	Certification of Flight Readiness
COTR	Contracting Officers Technical Representative
CPMP	Crew Provisioning Management Plan
CPR	Cost Performance Report
CPWG	Crew Provisioning Working Group
CR	Change Request
CRV	Crew Return Vehicle
CSA	Canadian Space Agency
CSD	Common Schedules Database
DEV	Dual Entry Visa
DIDs	Data Item Description
DM	Data Management
DQA	Document Quality Assurance
DRD	Data Requirement Description
DSSR	Daily Space Station Review Board
EAR	Export Administration Regulations
ECP	Export Control Plan
ECLSS	Environment Control & Life Support System
ERU	Engineering Release Unit
ESA	European Space Agency
ESC	Electronic Still Camera
EST	Export Services Team
EVA	Extravehicular Activity
FP	Flight Program
FCOH	Flight Control Operations Handbook
FCT	Flight Control Team
FDF	Flight Data File
FOR	Fight Operations Review
FPWG	Flight Program Working Group

---

FRR	Flight Readiness Review
GAO	General Accounting Office
GCTC	Gagarin Cosmonaut Training Center
GFD	Government Furnished Data
GFE	Government Furnished Equipment
GGR&C	Generic Groundrules, Requirements and Constraints
GOR	Ground Operations Review
HIWG	Housekeeping Integration Working Group
HK	Housekeeping
HQ	NASA Headquarters
HSFP-R	Human Space Flight Program-Russia
HSG	Houston Support Group
HTV	H-II Transfer Vehicle
IBMP	Institute of Bio-Medical Problems
ICA	Interface Control Agreement
ICD	Interface Control Document
ID	Identification
IDRD	Increment Definition and Requirements Document
IDRP	Increment Definition and Requirements Plan
IE	Increment Engineers
IG	Inspector General
IIR	Independent Implementation Review
IM	Increment Manager
IMC	ISSP Management Center
IMCE	ISS Management and Cost Evaluation
IMCOH	IMC Operations Handbook
IMMT	ISSP Mission Management Team
IMS	Inventory Management System
IMT	Increment Management Team
IOR	Increment Operations Review
IP	International Partner
IPOP	ISS Program Off-Nominal Situation Plan
IP/P	International Partner/Participant
IRMA	Integrated Risk Management Application
IRR	Increment Readiness Review
ISS	International Space Station
ISSPO	International Space Station Program Office
ISPPD	International Space Station Planning Process Document
ITAR	International Traffic in Arms Regulations
ITD	International Travel Database
IVA	Intra-vehicular Activity
IVC	Internal Volume Configuration
IVCWG	Internal Volume Configuration Working Group
IWG	Imagery Working Group
JARSWG	Joint American Russian Safety Working Group

NNJ04AA02C

(SECTION J-1 Appendix B)

Mission Integration Contract

8 of 304

---

JEM	Japanese Experiment Module
JLEC	JSC Language Education Center
JOP	Joint Operations Panel
JPG	JSC Procedures and Guidelines
JSC	Johnson Space Center
KSC	Kennedy Space Center
LOI	Letter of Invitation
LP	Launch Package
LPE	Launch Package Engineer
LPM	Launch Package Manager
LPT	Launch Package Team
LRR	Launch Readiness Review
LSIO/KSC	Launch Site Integration Office at KSC
MCC	Mission Control Center
MER	Mission Evaluation Room
MEV	Multiple Entry Visa
MIC	Mission Integration Contract
MIDAS	Mission Integration Database Application System
MIDS BB	Mission Integration Data Set Blank Book
MIM	Multi-Increment Manifest
MIO	Mission Integration and Operations
MIOCB	Mission Integration Operations Control Board
MIP	Mission Integration Plan
MIS	Management Information System
MIT	Mission Integration Template
MIWG	Multi-lateral Imagery Working Group
MLO	Moscow Liaison Office
MMIOCB	Multilateral Mission Integration Operations Control Board
MOD	Mission Operations Directorate
MOU	Memorandum Of Understanding
MPLM	Multi Purpose Logistics Module
MR	Manifest Requests
MSFC	Marshall Space Flight Center
MSRF	Meeting Support Request From
MTLO	Moscow Technical Liaison Office
MWG	Manifest Working Group
NAC	NASA Advisory Council
NASA	National Aeronautics and Space Administration
NASDA	National Space Development Agency of Japan
NCR	Nonconformance Requirements
NDC	Notification of Document Change
NISN	NASA Integrated Services Network
NMLO	NASA Moscow Liaison Office
NPG	NASA Procedures and Guidelines
ODF	Operations Data Files

---

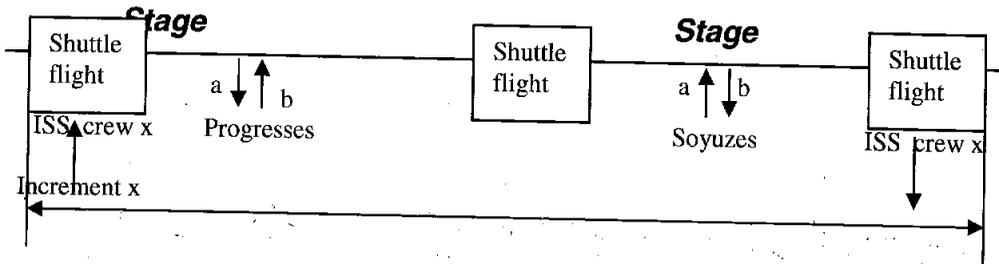
ONS	Off Nominal Scenarios
OSCAR	On-Orbit Stowage Capabilities and Requirements
PFIP	Preflight Imagery Plan
PI&C	Program Integration and Control
PIER	Post Increment Evaluation Report
PMOIP	Program Manager Operations Integration Procedures
PMR	Performance Management Reviews
PMS	Performance Measurement System
POP	Program Operating Plan
PP	Planning Period
PR	Program Risk
PRR	Payload Readiness Review
QA	Quality Assurance
R&D	Research and Development
RIO	Russian Interface Officer
RIP	Requirements Integration Panel
RM	Resource Management
RMDP	Return Manifest Disposition Plan
Rosaviakosmos	Russian Aviation and Space Agency
RS	Russian Segment
RSC-E	Rocket Space Corporation-Energia
RSET	Russian Simulation Execution Team
S&MA	Safety and Mission Assurance
SDTO	Station Development Test Objective
SDTOC	Station Development Test Objective Catalog
SEF	Service Evaluation Form
SEV	Single Entry Visa
SFAC	Space Flight Advisory Committee
SIR	Stage Integration Review
SODF	Station Operations Data File
SORR	Stage Operations Readiness Review
SOW	Statement of Work
SPIP	Station Program Implementation Plan
SSCB	Space Station Control Board
SSCN	Space Station Change Notice
SSP	Space Station Program
SSUAS	Space Station Utilization Advisory Subcommittee
TBD	To Be Determined
TCM	Technical Change Meetings
TDY	Temporary Duty
TIM	Technical Interchange Meeting
TRF	Translation Request Form
TsUP	Mission Control Center Moscow
TWIG	Trash/Waste Integration Group
USOS	U.S. Operating Segment

VMDB	Vehicle Master Database
WBS	Work Breakdown Structure
WG	Working Group
WM	Waste Management

**APPENDIX F: Description of Increments and Planning Periods**

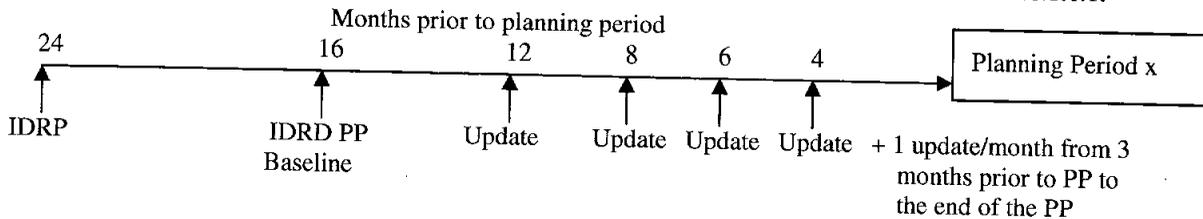
The following product templates and increment descriptions are provided for purposes of clarification. Actual contract obligations are defined in section 4.1.1.1 of the SOW.

An increment is the time period that an ISS crew is onboard ISS and is bounded by the flight that delivers the crew to ISS and the flight that returns them to Earth at the end of their ISS stay. These flights may be Shuttle or Soyuz transportation vehicles. An example of an increment is illustrated below.

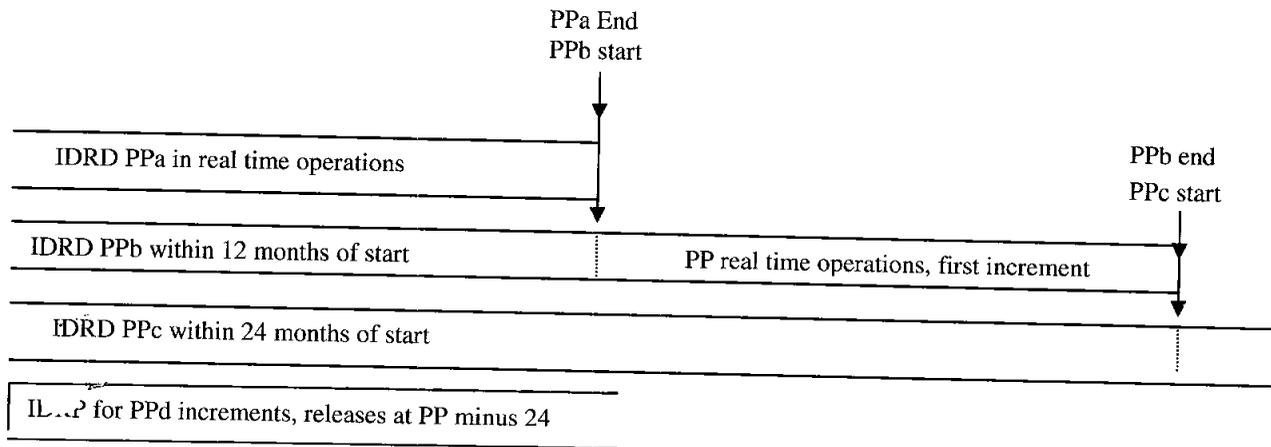


A Planning Period consists of one or more (usually 3) increments that occur in an approximate 1 year time period. The duration of the planning period and the flights that define the increments and planning periods are strategically defined in the MIM, tactically defined in the IDRDP FP, and continued in the IDRDP PP.

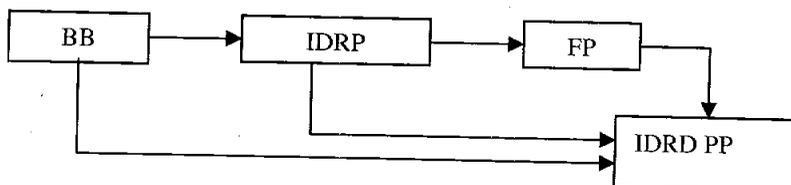
The generic, preplanning period, schedule template for an increment specific IDRDP and IDRDP PP (prior to the planning period) is presented below. Actual contract obligations are defined in SSP 50489 and section 4.1.1.1.1.



An overlay of multiple planning period schedules is provided below to demonstrate the usual number of IDRDP PPs (three) and IDRDP (one) in process at any given time



The relationship between the IDRDP BB, IDRDP FP, IDRDP, and IDRDP PP is presented below.



Contract No.

Page No.

**NNJ04AA02C**  
**(J-1 Appendix F)**

**Mission Integration Contract**

**7 of 304**

---

**SECTION J-1 APPENDIX G**  
**Administrative Meeting Support Requirements Example**

Meeting Name	Frequency	Schedule Telecon or Meeting (Conf. Room, Telecon, Materials)	Prepare & Send Agendas & Minutes	Maintain POC List, Distribution Lists, and Team calendars Distribute Team Information	Maintain Action Item Lists/ Database	Post Team Information to Team/Office Website
Requirements Integration Panel	Weekly	x	x	x	x	x
Increment Management Team Meetings	If within 1 year weekly otherwise twice/month	x	x	x	x	x
Flight Program WG	Weekly	x	x	x	x	x
Post Mission	Twice monthly (close to increment ending plus all post increment debriefs)	x	x	x		x
IDRD Videocon with Russians	Weekly	x	x			
Bilateral/Multilateral Planning TIM	Quarterly	x	x			
LPM Team Meetings Current + next 4 flights	Weekly	x	x	x	x	x
Flight Payload Planning WGs Current + next 4 flights	Quarterly	x	x			
Level II/III Schedule TIMs Current + next 4 flights	Quarterly	x	x		x	
Other LPM TIMs as scheduled	Quarterly	x	x		x	
Cargo Planning and Imagery Staff Meeting	Monthly	x		x		x
Manifest WG  Additional Tasks	Weekly	x	x Input MWG Status of MR's to MIDAS	x	x	x
Multi-Lateral MWG	Weekly Telecon	x	x	x	x	
Manifest TIM	Quarterly	x	x			
Crew Provisioning WG	Bi-Weekly	x	x	x	x	x
Imagery WG	Monthly	x	x	x	x	x
Multi-Lateral and Bilateral IWG	Monthly Telecon Quarterly Face-to - Face	x	x	x	x	x
Multi-Lateral Stowage Integration WG	Weekly	x	x	x	x	x
Multi-lateral Stowage Integration TIM	2 to 3 times annually	x	x		x	
Russian Elements Team O Videocon	Weekly	x	x	x	x	x
Russian Cargo Integration WG	Weekly	x	x	x	x	x

Meeting Name	Frequency	Schedule Telecon or Meeting (Conf. Room, Telecon, Materials)	Prepare & Send Agendas & Minutes	Maintain POC List, Distribution Lists, and Team calendars Distribute Team Information	Maintain Action Item Lists/ Database	Post Team Information to Team/Office Website
Russian Vehicles Telecon	Weekly	x	x	x	x	x
Waste/Housekeeping Management	Monthly	x	x	x	x	x
ATV Cargo Integration Team (ACIT)	Monthly	x	x	x	x	
Bilateral Inventory Management System WG (BIMSWG)	Quarterly	x	x	x	x	
IP MIO Tagups (CSA, NASDA, and ESA)	Monthly	x	x	x	x	x
Multilateral Housekeeping Integration WG	Twice-annually face-to-face	x	x	x	x	
Multilateral Trash/Waste Integration Group	Twice-annually face-to-face	x	x	x	x	
Requirements Integration Team (RITT)		x				
SDTO Telecon	Twice a month	x	x	x	x	
MITT	Monthly	x		x		x
Consumable Planning	Weekly	x	x	x		x

Every meeting is unique in the way that it is organized, setup, and handled. These and other various factors will determine what support would be best suited for your meeting. Information listed below will help you determine what type of support best fits your meeting support needs.

Definition of an Interpreter – Someone that interprets conversation – Oral, not written

Definition of Consecutive Interpretation – The speaker pauses and waits for the interpreter to interpret. This type of interpreting is what is normally used for face-to-face meetings such as a mini-TIM.

Definition of Simultaneous Interpretation – The interpreter sits in a separate room and interprets without the speaker pausing. Special simultaneous equipment is required for this type of interpreting as well as special configuration of the meeting room. Simultaneous is mainly used during multilateral meetings or very high-level management meetings. This mode requires multiple interpreters.

Definition of a Translator – Someone that translate documents – Written, not Oral. If you feel that a translator is necessary to be present at the meeting location please give reasons – as much detail as possible – and indicate whether you will require translation into English only, into Russian only, or both. **To have a translator at a meeting requires NASA Management / MIC COTR or designee approval.**

MIC Logistics Coordination Support at a Meeting – This support is mainly used when there are a large number of participants and/or a large number of splinter groups and/or a large number of documents to be translated during a meeting. **To have a logistics coordinator at a meeting requires NASA Management / MIC COTR or designee approval.**

Conference Rooms – After work hour conference rooms are used when there are several groups meeting in Moscow so that they can have a place at the end of the work day at the hotel to tag up. This is normally only done for high-level management meetings such as GDR, JPR, etc. **To have a remote conference room reserved requires NASA Management / MIC COTR or designee approval.**

Please include a copy of the agenda for your meeting (**mandatory**) along with any presentations that will be given, documents to be discussed, or other reference material that would be helpful for the interpreters to study prior to your meetings. Providing such materials in advance will allow the interpreter(s) to be better acquainted with the subject matter and terminology, and as a result will improve the quality of support you can expect at your meeting. In addition, please make a copy for the interpreter(s) when distributing any materials during the meeting itself.

Name of Meeting – Description of work / task ( <b>provide as much detail as possible</b> )	
Will there be any Export Control topics discussed at the meeting?	No
Meeting Dates	
Meeting Location (Country, city, work site, building #, room #, etc.)	

# Mission Integration Contract Russian Services Meeting Support Request Form (MSRF)

Please complete the form below giving as much detail as possible

Phone number at the meeting location	
Meeting start time	
Lunch break (give start time & end time)	
Meeting end time	
Trip / Meeting Lead	
Trip / Meeting Lead's work phone #	
Trip / Meeting Lead's work fax #	
Trip / Meeting Lead's pager #	
Trip / Meeting Lead's cell phone #	
Trip / Meeting Lead's home #	
NASA Letter of Invitation / Trip #	
Suggested number of Interpreters	
What type of interpretation will be needed? (Simultaneous or Consecutive)	N/A
Suggested number of Translators	
Justification if Translators are requested (Mandatory for approval)	
Will you require a logistics person at your meeting? (Requires NASA mgmt/MIC COTR or designee approval)	No
Will you require MIC to reserve a conference room?	No
If so, how many people should the room be able to accommodate?	
What days will you need the conference room?	
What time will you need the conference room? (Please give start and end times)	
Do you have a weekly standing telecon that needs to be canceled during the dates of your meeting?	No
Will you require MIC to provide transportation?	Yes
If so, how many people will transportation be needed for?	
What time will you require pick up in the morning to go to the meeting?	
Will you require MIC transportation during lunch?	No

# Mission Integration Contract Russian Services Meeting Support Request Form (MSRF)

Please complete the form below giving as much detail as possible

If so, what time will we need to pick up the group for lunch? (Requires NASA mgmt/MIC COTR or designee approval)	
What time will we need to have the group back to work after lunch?	
What time will we need to pick up the group at the end of the day to take them back to the hotel?	
<b>For meetings at NASA/JSC only</b> The MIC will automatically request Buildings 1, 4N, 4S, & 9. Please indicate any other buildings that you will require the Russian Delegation to be badged for.	

If you have any additional comments and or instructions please list them here:

--

# Mission Integration Contract

## Russian Services

### Service Evaluation Form (SEF)

**Date:** \_\_\_\_\_  
**Event:** \_\_\_\_\_  
**WBS Number:** \_\_\_\_\_  
**Type of Work:** \_\_\_\_\_  
**Document:** \_\_\_\_\_  
**MIC Representative:** \_\_\_\_\_  
**Evaluator:** \_\_\_\_\_  
**Deliver to NASA  
COTR or Designee:** \_\_\_\_\_

Excellent     Very Good     Good     Satisfactory     Unsatisfactory

<b>Excellent - very</b>	Of exceptional merit; exemplary performance in a timely, efficient, and economical manner; minor (if any) deficiencies with no adverse effect on overall performance.
<b>Very Good -</b>	Very effective performance, fully responsive to contract requirements accomplished in a timely, efficient, and economical manner for the most part. Only minor deficiencies.
<b>Good -</b>	Effective performance; fully responsive to contract requirements; reportable deficiencies, but with little identifiable effect on overall performance.
<b>Satisfactory -</b>	Meets or slightly exceeds minimum acceptable standards; adequate results. Reportable deficiencies with identifiable, but not substantial, effects on overall performance.
<b>Unsatisfactory -</b>	Does not meet minimum acceptable contract standards in one or more areas; remedial action required in one or more areas; deficiencies in one or more areas that adversely affect overall

Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# Mission Integration Contract Russian Services Meeting Support Request Form (MSRF)

Please complete the form below giving as much detail as possible

## Mission Integration Contract Russian Services Translation Request Form (TRF)

Request for Written Translation:

Requestor's name, phone, & mail code \_\_\_\_\_

Author's name, phone, & mail code \_\_\_\_\_  
(if different from above)

Title of Document: \_\_\_\_\_

Number of Pages in Document: \_\_\_\_\_

Translation Required by (date & time): \_\_\_\_\_

Is Due Date Flexible?  Yes  No If No, Provide Justification. \_\_\_\_\_

Additional Details: \_\_\_\_\_

Additional Distribution Instructions: \_\_\_\_\_

\* Documents are returned electronically in the current Office suite supported by NASA to the requestor, author, Lisa Gurgos, Supricia Franklin-Williams, and Tamor Smith. You may list additional recipients in the "additional distribution instructions" section above.

**Check One:**  Russian to English  \*English to Russian (\*Requires NASA mgmt approval)

**Check One:**  New  Rework SS# \_\_\_\_\_

**Check, if applicable:**

CONFIDENTIAL

Export Controlled

Safety/Mission Critical

**Special Processing Required** (for English to Russian translation only)

**Rationale/Justification**

**Management Approval**

**NASA Office Use Only**

Date/Time NASA Received: \_\_\_\_\_

Date/Time Sent to MIC Contractor: \_\_\_\_\_

Expected Completion Date: \_\_\_\_\_

Priority Established: \_\_\_\_\_

Date/Time Received from MIC Contractor: \_\_\_\_\_

**Mission Integration Contract Russian Services  
Meeting Support Request Form (MSRF)**

Please complete the form below giving as much detail as possible

Contract No.

NNJ04AA02C

(SECTION J-1 Appendix H Form 4a)

Mission Integration Contract

**ISS Resupply Request – Crew Rotation**

Office Supplies			
Item	Size / Color	Qty	Priority H, M, L
Adjustable Bungee			
Alligator Clip			
Binder Clip			
Book Clamp			
Book Clip (gold clip)			
Book Tether (12", 24", 36")			
Bite-A-Lite			
Jakstrap			
Mini-Mag light			
Spare Bulb Kit			
Spotlight (Mag light)			
Velcro Cable Strap			
Headphone Cable			
Printer Color Cartridge			
Helmet Bag			
Calculator			
Color Dot Kit			
Aluminum Tape			
Double-Sided Tape			
Gray Tape (1" & 2")			
Masking Tape			
Mounting Squares			
Tape (Color & Scotch)			
Timer			

Item	Office : S
Leatherman Tool	
Scissors	
Swiss Army Knife	
Utility Knife	
Micro Recorder	
Paper Pad (Green, White, Legal, Metric)	
Black Notebook	
Green Record Book	
Mechanical Pencil	
Colored Pencils	
Highlighter	
Pen, Marker	
Pen, Ballpoint	
Pen, Lumocolor (Blk, Blue, Green, Red)	
Pen, Sharpie	
Post-It Flags	
Post-It Notes (1.5"x2", 3"x3", 3"x5")	
Rubber Bands	
Rubber Eraser	
Sewing Kit	
Velcoin Kit	
Velcro Kit (1" & 2")	
Ziplock Bags (miscellaneous sizes)	
Binder	

Contract No.

NNJ04AA02C  
 (SECTION J-1 Appendix H Form 4b)

Mission Integration Contract

**ISS Resupply Request – Non-Crew Rotation**

Office Supplies			
Item	Size / Color	Qty	Priority H, M, L
Adjustable Bungee			
Alligator Clip			
Binder Clip			
Book Clamp			
Book Clip (gold clip)			
Book Tether (12", 24", 36")			
Bite-A-Lite			
Jakstrap			
Mini-Mag light			
Spare Bulb Kit			
Spotlight (Mag light)			
Velcro Cable Strap			
Headphone Cable			
Printer Color Cartridge			
Helmet Bag			
Calculator			
Color Dot Kit			
Aluminum Tape			
Double-Sided Tape			
Gray Tape (1" & 2")			
Masking Tape			
Mounting Squares			
Tape (Color & Scotch)			
Timer			
Printer Supplies			
Item		Qty	Priority H, M, L
A4 Paper			
Black Cartridge			

Office Supplies	
Item	Priority H, M, L
Leatherman Tool	
Scissors	
Swiss Army Knife	
Utility Knife	
Micro Recorder	
Paper Pad (Green, White, Legal, Metric)	
Black Notebook	
Green Record Book	
Mechanical Pencil	
Colored Pencils	
Highlighter	
Pen, Marker	
Pen, Ballpoint	
Pen, Lumocolor (Blk, Blue, Green, Red)	
Pen, Sharpie	
Post-It Flags	
Post-It Notes (1.5"x2", 3"x3", 3"x5")	
Rubber Bands	
Rubber Eraser	
Sewing Kit	
Velcoin Kit	
Velcro Kit (1" & 2")	
Ziplock Bags (miscellaneous sizes)	
Binder	
Batteries	
Item	Priority H, M, L
AAA	
AA	
C	
D	
9 Volt	
Button (for egg timers)	



Contract No.

NNJ04AA02C

(SECTION J-1 Appendix H Form 4b)

Mission Integration Contract

**ARRIVAL NOTIFICATION FORM (ANF)**

ANF (Rev. F - 8/1/00)

Travelers must complete and fax a copy of the "Arrival Notification Form (ANF)" and include a copy of his or her trip itinerary to the Mission Integration Contract Russian Services Contractor at \_\_\_\_\_. This information is essential in order to ensure safety of travelers and ground transportation requirements while in Russia. In the event travel plans are changed or delayed, it is imperative travelers contact the Mission Integration Contract Russian Services Contractor immediately at \_\_\_\_\_ or after hours at \_\_\_\_\_.

Last Name, First Name	Company	U.S. Citizen?	Hotel

**Visa Information:**

**It is absolutely mandatory that this section be completed with accurate visa and travel date information.**

Trip # from Letter of Invite (LOI)	Visa Beginning and Ending Dates	Actual Travel Dates (arrival & departure dates in Moscow)	Type of Visa (Single, Dual, MEV)

This office is required to have both evening and daytime contact information. Please be as complete as possible:

- Hotel/Evening Phone #:

\_\_\_\_\_

- Daytime Work Locations and Phone Numbers (where you can be located during the day while you are in Russia):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- U.S. Point-of-contact & Office Phone Number (should be someone that can be contacted in the U.S. while you are in Russia, such as a secretary or travel coordinator):

\_\_\_\_\_

- Emergency Point of Contact (should be someone that can be contacted after hours in the U.S. while you are in Russia, such as a family member or friend).

\_\_\_\_\_

Contract No.

**NNJ04AA02C**

**(SECTION J-1 Appendix H Form 4b)**

**Mission Integration Contract**

---

Other Information/Special Considerations:

## APPENDIX I

## GOVERNMENT APPLICATIONS

NASA will provide access to these applications:

Application Name	Description
Action Tracking Application (ATA)	The Action Tracking Application (ATA) is used to track program actions
Crew Language Training Metrics	Intranet based database used for collecting crew training data
COSMOS	COSMOS is used to track status of change requests/directives for ISS
Common Schedules Database	Use for collection of schedule data for ISSP
Integrated Risk Management Application (IRMA)	Application used to identify, status and track programmatic risks, watch items, and cost threats
Electronic Document Management System (EDMS)	Application which will house the program authorized library

**DATA REQUIREMENT LIST (DRL)  
AND DATA REQUIREMENTS DOCUMENTS (DRD)**

The following pages set out the documentation requirements of this contract, starting with a DRL, which is an index to the DRDs. Each DRD prescribes the required data product content, schedule, type, and other particulars for specific data submission requirements.

<b>DRL Line #</b>	<b>DRD #</b>	<b>DATA TYPE</b>	<b>DRD TITLE</b>	<b>REVISED BY</b>
	<b>B-CM</b>		<b>CM – Configuration Management</b>	
	<u>01</u>	<b>1</b>	Configuration Management Plan	
	<b>B-EC</b>		<b>EC – Export Control</b>	
	<u>01</u>	<b>2</b>	Export Control Audit Results	
	<u>02</u>	<b>2</b>	Export Control Plan	
	<b>B-II</b>		<b>II - Russian Language and Logistics Services (RL&amp;LS)</b>	
	<u>01</u>	<b>1</b>	Language Training Curricula for NASA/JSC Contractor Programs	
	<u>02</u>	<b>3</b>	Language Training Shared Materials "File Cabinet"	
	<u>03</u>	<b>3</b>	Training Report Deliverable	
	<u>04</u>	<b>3</b>	Student Records	
	<u>05</u>	<b>2</b>	Language Program Plan for Integration with Colleagues in Russia	
	<b>B-IT</b>		<b>IT - Information Technology</b>	
	<u>01</u>	<b>1</b>	IT Management Plan	
	<u>02</u>	<b>1</b>	IT Security Plan and Reports	
	<b>B-MI</b>		<b>MI - Mission Integration</b>	
	<u>01</u>	<b>3</b>	User Guides for Mission Integration Database Applications System (MIDAS)	
	<u>02</u>	<b>1</b>	Systems Requirements Document for the Mission Integration Database Application System	
	<u>03</u>	<b>2</b>	Design Document for the Mission Integration Applications System (MIDAS)	
	<u>04</u>	<b>2</b>	Discrepancy and New Requirement Tracking for Mission Integration Database Application System	
	<u>05</u>	<b>3</b>	DELETED	<b>Mod 27</b>
	<b>B-PC</b>		<b>PC - Program Control and Business Management</b>	
	<u>01</u>	<b>3</b>	NF533 M/Q Cost Reporting	<b>Mod 50</b>
	<u>02</u>	<b>3</b>	Cost Performance Report (CPR)	<b>Mod 13</b>
	<u>03</u>	<b>3</b>	Workforce Reports	<b>Mod 28</b>
	<u>04</u>	<b>1</b>	Work Breakdown Structure (WBS) and Dictionary	<b>Mod 16</b>
	<u>05</u>	<b>2</b>	CPR Earned Value Methodology Report	<b>Mod 16</b>
	<u>06</u>	<b>2/3</b>	Integrated Mission Integration Office Schedules	<b>Mod 16</b>
	<u>07</u>	<b>2/3</b>	ISS Program Schedule Updates	<b>Mod 16</b>
	<b>B-PM</b>		<b>PM - Program Management</b>	
	<u>01</u>	<b>1</b>	<b>Mission Integration Program Management Plan</b>	<b>Mod 16</b>
	<u>02</u>	<b>3</b>	<b>Integrated Management Review Products</b>	<b>Mod 13</b>
	<u>03</u>	<b>1</b>	Mission Integration Transition Plan	
	<u>04</u>	<b>1/3</b>	Performance Assessment Plan and Performance Assessment Reports	
	<u>05</u>	<b>3</b>	Organization Chart	
	<u>06</u>	<b>1</b>	Certification of Flight Readiness (CoFR) Implementation Plan	
	<b>B-PR</b>		<b>PR - Procurement</b>	

	<u>01</u>	<b>1</b>	Contract Close-out Plan	
	<u>02</u>	<b>3</b>	Wage/Salary & Fringe Benefit Data	Mod 41
	<u>03</u>	<b>2</b>	Reprocurement Data Package	
	<u>04</u>	<b>2</b>	DELETED	Mod 10
	<b>B-SA</b>		<b>SA-Safety Assurance</b>	
	<u>01</u>	<b>1</b>	Mission Assurance and Risk Management (MA&RM) Plan	<b>Mod 35</b>
	<u>02</u>	<b>1</b>	Safety & Health (S&H) Plan	
	<u>03</u>	<b>2</b>	Monthly Safety and Health Metrics	
	<u>04</u>	<b>3</b>	Safety and Health Program Self Evaluation	
	<u>05</u>		DELETED	<b>Mod 25</b>

Subject to the Rights in Data clause, this Data Procurement Document (DPD) sets forth the data requirements in each Data Requirements Description (DRD) and shall govern that data required by the DPD for this contract. The contractor shall furnish data defined by the DRD's listed on the Data Requirements List (DRL) by category of data. Such data shall be prepared, maintained, and delivered to NASA in accordance with the requirements set forth within this DPD. In cases where data requirements are covered by a Federal Acquisition Regulation (FAR) or NASA FAR Supplement (NFS) regulation or clause, the regulation will take precedence over the DPD, per FAR 52.215.33. NASA-Owned/Contractor-Held records shall be managed by the Contractor in accordance with Title 36 of the code of Federal Regulations, Chapter XII B, Records Management, and NMI 1440.6, NASA Records Management Program. The records shall be organized in accordance with the instructions in NHB 1442.1, NASA Uniform Files index, as applicable. The contractor shall disposition records and non-records in accordance with NHB 1441.1, NASA Retention Schedules, which has been approved by NASA and the National Archives and Records Administration (NARA). All questions on records management issues shall be directed through the Contracting Officer to the JSC Records Management Officer.

*Documents included as applicable documents in this DPD are the issue specified in the Statement of Work, and form a part of the DPD to the extent specified herein. References to documents other than applicable documents in the data requirements of this DPD may sometimes be utilized. These do not constitute a contractual obligation on the contractor. They are to be used only as a possible example or to provide related information to assist the contractor in developing a response to that particular data requirement.*

### **DESCRIPTION**

This document identifies and defines the requirements and data types for information and data required under this contract.

The Data Requirement Descriptions (DRD)s define, by an individual DR, the information and data required for each deliverable document.

The data types are used to identify the approval and control required for each DR. The Data Requirements List (DRL) is an index of all the DRs by category.

Documentation submitted pursuant to this clause may incorporate references to other current approved documentation, provided the references are adequate and include such identification elements as title, document number, and approval date (where applicable). However, if the pertinent information is of relatively minor size, the contractor shall incorporate the information itself, in lieu of using a reference. The contractor shall assure that any referenced information is readily available to appropriate users of the submitted document.

### **DATA TYPES**

For the purpose of this clause, the following information/documentation types are applicable:

Type 1 That information and documentation which requires NASA approval prior to release. Approved type 1 information and documentation shall be controlled, and deviations from or changes to the concepts, techniques, and/or requirements stated therein shall require NASA approval prior to implementation. All

work under this contract covered by approved type 1 documents shall be performed in accordance with those approved documents. The Contracting Officers Technical Representative will have approval authority and will sign the data prior to its release. Contractually binding documents will not be implemented nor revised without contractual authorization.

Type 2 That information and documentation for which NASA reserves a time-limited right to disapprove, in whole or in part. Type 2 data shall be submitted to JSC for review not less than 30 calendar days prior to its release for use or implementation. The contractor shall clearly identify the release target date in the "submitted for review" transmittal. If the contractor has not received any comment prior to the released target date, the document may be released for appropriate use. Any NASA comment received shall be appropriately dispositioned before the document is to be used. Type 2 data may be approved by NASA prior to its submittal.

Type 3 That information and documentation which is provided to NASA for surveillance, information, review, and/or management control. This information does not require formal NASA review and approval. Information in this category would include design solutions, status, and cost/schedule reporting; analyses and test results, handbooks; and other designated lists, reports, etc.

Type 1 submissions shall be marked "TYPE 1 PRELIMINARY pending NASA approval or Type I APPROVED BY NASA, as appropriate." Additional special designations and deviations may be required on specific submissions in accordance with configuration management requirements.

Type 2 submissions shall be marked "TYPE 2 PRELIMINARY - RELEASE TARGET DATE, xx/xx/xx" or "TYPE 2 FINAL - NASA COMMENTS INCLUDED" or "TYPE 2 FINAL DOCUMENT," where NASA comments were not received.

NOTE: Documents submitted under this clause, even though directly (Type 1) or implicitly (Type 2) approved by NASA, shall not take precedence over the specifications as set out in Section C, Statement of Work.

The contractor shall normally deliver a complete revised Type 1 or Type 2 data requirement with NASA comments incorporated within 45 days of receipt of comments.

Type 3 submissions shall be marked "TYPE 3 DOCUMENT - FOR INFORMATION, SURVEILLANCE, REVIEW OR MANAGEMENT CONTROL".

#### NUMBER OF COPIES AND DISTRIBUTION REQUIREMENTS

The contractor shall provide one copy of each DR to the standard distribution list shown in Block 8 of the DRDs. Additional distribution shall be made as directed, in writing, by the Contracting Officer. The number of copies required will not exceed the limits set forth in Clause H-2, Printing and Duplicating, without prior Contracting Officer approval. Data Transmittal Forms will be used to confirm delivery of electronically resident DR deliverables.

#### ELECTRONIC FORMAT

DRDs shall be maintained electronically in the Contractor's own format, **unless a specified format is defined in the DRD. The government may define specific DRD data format to support the utilization of this data in the Management Information System.**

#### SUBMISSION INFORMATION

Wherever in the following DRDs under Block 6 "First Submission Date," or block 7 "Frequency of Submission," delivery is specified as at "SRR" or at any other program event, then delivery shall be required at the start or initialization of the event. Similarly when delivery is specified as a discrete amount of time before a program or project event (i.e., SRR minus 60 days) then delivery will be required that discrete amount of time before the start of the program or project event. In addition, whenever delivery is specified as after an event, (i.e., SRR plus 30 days) delivery should be required after the end of the event.

**SECTION J-3**

**SAFETY AND HEALTH PLAN**

The contractor shall comply with and submit DRD B-SM-02, Safety and Health (S&H) Plan. Upon contract award, this plan will be incorporated as Attachment J-3 of the final contract.