AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
	1 2

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
000002	See Block 16C		

6. ISSUED BY CODE KSC

NASA/John F. Kennedy Space Center
Office of Procurement
Mail Code OP-MS
Kennedy Space Center FL 32899

7. ADMINISTERED BY *(If other than item 6)* CODE KSC

NASA/Kennedy Space Center
Office of Procurement
Mail Code OP-MS
Kennedy Space Center FL 32899

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

BOEING
3700 BAY AREA BLVD
HOUSTON TX 77058-3661

CODE 03953 FACILITY CODE

(x) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED *(SEE ITEM 11)*

X 10A. MODIFICATION OF CONTRACT/ORDER NO. NNK14MA75C

10B. DATED *(SEE ITEM 13)* 09/16/2014

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 returning _____ 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 ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)*. THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE 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).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: FAR 52.233-3, Protest After Award
	D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor ☐ is not ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

IGF::OT::IGF

The purpose of this bilateral modification is to revise the following within Attachment J-03, Appendix A:

- Certification Base Line Review (CBR) Interim Milestone "Planned Start Date and Completion Date" changed from Sep-Oct/2014 to Sep-Nov/2014.

- Certification Base Line Review (CBR) Interim Milestone individual element "Delivery of Data/DRDs" dates changed from Aug/2014 to Sep/2014.

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*	16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*
Debora D. Davis	Brian S. Hinerth
15B. CONTRACTOR/OFFEROR (b) (4) *(Signature of person authorized to sign)*	15C. DATE SIGNED 11-21-14
16B. UNITED STATES OF AMERICA (b) (4) *(Signature of Contracting Officer)*	16C. DATE SIGNED 11-21-14

NSN 7540-01-152-8070
Previous edition unusable

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

NAME OF OFFEROR OR CONTRACTOR
BOEING

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	- Ground Segment Critical Design Review (CDR) Interim Milestone "Planned Start Date and Completion Date" changed for: "Grnd Sys CDR" from Oct/2014 to Nov/2014 and "Combined Final RID Board" from Nov/2014 to Dec/2014. - Ground Segment Critical Design Review (CDR) Interim Milestone individual element "Delivery of Data/DRDs" dates changed from Sep/2014 to Oct/2014. As a result of the above, the following pages are deleted and replacements attached to this modification: Attachment J-03, Appendix A, pages 4 - 14. In consideration of the modification(s) agreed to herein, and described as complete equitable adjustments in delivery schedule for the Contractor's Certification Baseline Review (CBR) and Ground Segment Critical Design Review (CDR) Interim Milestones, the Contractor hereby releases the Government from any and all liability under this contract for further equitable adjustments attributable to such facts or circumstances giving rise to the Proposed delivery schedule adjustment. The extent of Contractor's release under this modification is expressly limited to delivery schedules for CBR and CDR interim milestones. Payment Terms: Net 15 days				

Certification Baseline Review (CBR) Interim Milestone **(As proposed, interim NASA milestone in support of DCR)** **DCR Interim Milestone 01A.1**	**Planned Start Date and Completion Date (mo/yr):** **Sep - Nov/2014** **No Final RID Board**	**Amount:** (b) (4)

Objective:

At a NASA and Contractor co-chaired Certification Baseline Review (CBR) completed within ninety (90) days of contract start, the Contractor shall:

a) Identify the Baseline requirements, including the allocation to the Elements and Subsystems of the CTS, incorporating the results of NASA's guidance provided under Certification Products Contract (CPC) (if applicable), which meet NASA's requirements defined in CCT-REQ-1130, ISS Crew Transportation and Services Requirements Document and SSP 50808, International Space Station (ISS) to Commercial Orbital Transportation Services (COTS) Interface Requirements Document.

b) Identify the current Crew Transportation System (CTS) design baseline.

c) Document management plans and products incorporating the results of NASA's disposition provided under Certification Products Contract (CPC) (if applicable), to meet requirements in the CCT-PLN-1120, Crew Transportation Technical Management Processes.

d) Define the plan and schedule to complete Design, Development, Test, and Evaluation (DDTE) and certification for the CTS design, production, and operations.

e) Define top safety, technical, cost and schedule risks based on most current CTS design. (Att J-03 PWS Apx A)

Indicators of Milestone Readiness: (Att J-03 PWS Apx A)	**Data / DRDs to be provided:**	**Delivery of Data/DRDs (mo/yr)**
The Contractor has completed the following and provided to NASA:		
a) The requirements, including the allocation to the Elements and Subsystems of the CTS, incorporating the results of NASA's disposition under CPC (if applicable) which meet NASA's requirements defined in CCT-REQ-1130 and SSP 50808 including but not limited to:	Data to be transmitted via DRD 102	Sep/2014

Certification Baseline Review (CBR) Interim Milestone **(As proposed, interim NASA milestone in support of DCR)** **DCR Interim Milestone 01A.1**	**Planned Start Date and Completion Date (mo/yr):** **Sep - Nov/2014** **No Final RID Board**	**Amount:** (b) (4)
1) Documentation of previously approved variances and alternate standards incorporated or tailored in requirements.	Data to be transmitted via DRD 102	Sep/2014
2) Provide joint ISS integration products (Interface Control Documents (ICDs), Joint Integrated Verification Test Plan (JiVTP), Bi-lateral Data Exchange Agreement List and Schedule (BDEALS), Bi-lateral Hardware Software Exchange Agreement List and Schedule (BHSEALS)) identified in SSP 50964, Visiting Vehicle ISS Integration Plan..	Data to be transmitted via DRD 102	Sep/2014
b) Documentation of the current CTS design baseline as defined in DRD 102 Certification Baseline Review (CBR) Data Package.	Data to be transmitted via DRD 102	Sep/2014
c) The management plans and products as defined in DRD 102 Certification Baseline Review (CBR) Data Package.	Data to be transmitted via DRD 102	Sep/2014
d) The DRD 108 Verification and Validation (V&V) Plan.	Data to be transmitted via DRD 108	Sep/2014
e) The DRD 107 Certification Plan.	Data to be transmitted via DRD 107	Sep/2014
f) The DRD 002 Integrated Master Plan and Integrated Master Schedule for CTS Certification activities.	Data to be transmitted via DRD 002	Sep/2014

Certification Baseline Review (CBR) Interim Milestone **(As proposed, interim NASA milestone in support of DCR)** **DCR Interim Milestone 01A.1**	**Planned Start Date and Completion Date (mo/yr):** **Sep - Nov/2014** **No Final RID Board**	**Amount:** (b) (4)
g) An assessment of the top safety, technical, cost, and schedule risks to CTS Certification, and documentation of the approach to manage and accept risk with CTS Certification	Data to be transmitted via DRD 102	Sep/2014
h) DRD 001 Insight Implementation Plan and documentation of the organizational interaction and personnel interfaces to achieve the objectives of the Insight Implementation Plan and Insight Clause.	Data to be transmitted via DRD 001	Sep/2014
i) DRD 101 Milestone Review Plan.	Data to be transmitted via DRD 101	Sep/2014
j) DRD 109 Flight Test Plan.	Data to be transmitted via DRD 109	Sep/2014
Acceptance Criteria: (Att J-03 PWS Apx A)		
a) Requirements are baselined and controlled. The allocation of requirements to the CTS design baseline is complete.	Data dispositioned to the level required per DRD 102	
1) Requirements are traceable to CCT-REQ-1130 and SSP 50808.	Data dispositioned to the level required per DRD 102	
2) Variances and alternate standards have been incorporated and appropriately tailored into the Contractor's requirements.	Data dispositioned to the level required per DRD 102	
3) Technical coordination is complete for joint ISS integration products (ICDs, JiVTP, BDEALS, BHSEALS) identified in SSP 50964, and products are ready for ISS to baseline post CBR review.	Data dispositioned to the level required per DRD 102	

Certification Baseline Review (CBR) Interim Milestone **(As proposed, interim NASA milestone in support of DCR)** **DCR Interim Milestone 01A.1**	**Planned Start Date and Completion Date (mo/yr):** **Sep - Nov/2014** **No Final RID Board**	**Amount:** (b) (4)
4) The Concept of Operations has been baselined.	Data dispositioned to the level required per DRD 102	
5) The CTS design definition products identified in the DRD 102 Certification Baseline Review (CBR) Data Package identify the current design baseline.	Data dispositioned to the level required per DRD 102	
6) Integrated vehicle performance and design margin is appropriate and supports completion of development.	Data dispositioned to the level required per DRD 102	
7) Management plans and products identified in the DRD 102 Certification Baseline Review (CBR) Data Package are in place, controlled and are being implemented. The plans and products identified in the CBR Data Package as type 2 have been approved.	Data dispositioned to the level required per DRD 102	
8) The DRD 108 V&V Plan has been Baselined.	Data dispositioned per DRD 108	
9) The DRD 107 Certification Plan has been Baselined.	Data dispositioned per DRD 107	
10) An DRD 002 Integrated Master Plan and Integrated Master Schedule (IMP/IMS) is baselined.	Data dispositioned per DRD 002	
11) The top safety, technical, cost and schedule risks are identified, assessed, mitigation plans identified and clearly documented in BORIS. Risk & Opportunity Management plan is released to effectively manage the risks.	Data dispositioned to the level required per DRD 102	

Certification Baseline Review (CBR) Interim Milestone **(As proposed, interim NASA milestone in support of DCR)** **DCR Interim Milestone 01A.1**	**Planned Start Date and Completion Date (mo/yr):** **Sep - Nov/2014** **No Final RID Board**	**Amount:** (b) (4)
12) DRD 001 Insight Implementation Plan has been approved. The organizational interaction and personnel interfaces to achieve the objectives of the Insight Implementation Plan and Insight Clause have been documented.	Data dispositioned per DRD 001	
13) DRD 101 Milestone Review Plan in accordance with the Data Requirement List (DRL) and DRD has been approved.	Data dispositioned per DRD 101 MRP	
14) DRD 109 Flight Test Plan in accordance with the DRL and DRD has been approved.	Data dispositioned per DRD 109	
15) A plan and schedule have been defined for the resolution of all actions and open items resulting from the CBR. All To be Determined (TBD) and To be Resolved (TBR) items are clearly identified with acceptable plans and schedules for their disposition.		

Ground Segment Critical Design Review (CDR) Interim Milestone **(As proposed, interim Contractor milestone in support of DCR)** **DCR Interim Milestone 01A.2**	**Planned Start Date and Completion Date (mo/yr):** **CMO CDR: Oct/2014** **Grnd Sys CDR: Nov/2014** **Combined Final RID Board Dec/2014**	**Amount:** (b) (4)

Objective:

Contractor chaired. Perform (1) a Critical Design Review (CDR) of Crew & Mission Operations systems designs and processes for Mission Operations, Training Systems and Processes and Cargo Integration Processes; (2) a CDR of Ground Systems used for spacecraft AI&T, Space-to-Ground Comm, Landing and CM recovery ground systems; and (3) review of VAC-1 execution plan and schedule.

a) Baseline tailored requirements, incorporating the results of NASA's guidance provided under CPC (if applicable), which meet NASA's requirements;

b) Baseline most current CTS CMO design;

c) Baseline Ground systems designs for AI&T, Space-to-Ground communications and post landing CM recovery, present summary updates to launch site facilities and pre-flight systems designs;

d) Define schedule; and

e) Define top safety, technical, cost and schedule risks.

Indicators of Milestone Readiness:	**Data / DRDs to be provided:**	**Delivery of Data/DRDs (mo/yr)**
For CMO CDR the Contractor has completed the following:		
a) Tailored requirements incorporating the results of NASA's guidance under CPC (if applicable) which meet NASA's requirements defined in CCT-STD-1150 Crew Transportation Operations Standards	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
b) Mission Operations Plan, Train and Fly CDR technical work products for both hardware and software system elements for Mission Planning and Analysis, Flight Training, Flight Operations, Crew and Cargo Integration and Missions Systems have been made available to include:	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014

Ground Segment Critical Design Review (CDR) Interim Milestone **(As proposed, interim Contractor milestone in support of DCR)** **DCR Interim Milestone 01A.2**	**Planned Start Date and Completion Date (mo/yr):** **CMO CDR: Oct/2014** **Grnd Sys CDR: Nov/2014** **Combined Final RID Board Dec/2014**	**Amount:** (b) (4)
1) Product specifications for each hardware and software configuration item	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
2) Fabrication, Assembly, integration and test plans and procedures	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
3) Interface control documents	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
4) Operations limits and constraints	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
5) Technical resource utilization estimates and margins	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
6) Command and telemetry lists	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
7) Verification and Validation plan(s)	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
8) Software design document(s) including interface design document(s)	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
9) Training documentation (e.g. plans, curriculum, schedules)	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
10) Safety analyses	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
11) Certification plans and requirements (as needed)	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014

Ground Segment Critical Design Review (CDR) Interim Milestone **(As proposed, interim Contractor milestone in support of DCR)** **DCR Interim Milestone 01A.2**	**Planned Start Date and Completion Date (mo/yr):** **CMO CDR: Oct/2014** **Grnd Sys CDR: Nov/2014** **Combined Final RID Board Dec/2014**	**Amount:** (b) (4)
c) CMO schedule elements as part of the Integration Master Schedule (DRD 002) for CTS Certification activities.	Data to be provided at meeting IAW DRD 002	Oct/2014
d) An assessment of the top safety, technical, cost, and schedule risks to CMO and documentation of the approach to manage and accept risks.	Data to be provided at meeting IAW DRD 101 MRP Appendix B	Oct/2014
For Ground Systems CDR the Contractor has completed the following:		
a) Tailored requirements incorporating the results of NASA's guidance under CPC (if applicable) which meet NASA's requirements defined in CCT-REQ-1130.	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
b) CDR technical work products for both hardware and software system elements for Ground Systems used for spacecraft AI&T, Space-to-Ground Communication, Landing and CM recovery ground systems have been made available to include:	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
1) Updated baselined documents, as required	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
2) Product specifications for each hardware and software configuration item	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
3) Spacecraft Fabrication, Assembly, integration and test plans and procedures	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
4) Interface control documents	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014

Ground Segment Critical Design Review (CDR) Interim Milestone **(As proposed, interim Contractor milestone in support of DCR)** **DCR Interim Milestone 01A.2**	**Planned Start Date and Completion Date (mo/yr):** **CMO CDR: Oct/2014** **Grnd Sys CDR: Nov/2014** **Combined Final RID Board Dec/2014**	**Amount:** (b) (4)
5) Operations limits and constraints	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
6) Technical resource utilization estimates and margins	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
7) Command and telemetry lists	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
8) Verification and Validation plan(s)	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
9) Software design document(s) including interface design document(s)	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
10) Safety analyses	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
11) Certification plans and requirements (as needed)	Data to be transmitted IAW DRD 101 MRP Appendix B	Oct/2014
c) Ground Systems schedule elements as part of the Integration Master Schedule (DRD 002) for CTS Certification activities.	Data to be transmitted IAW DRD 002	Oct/2014
d) An assessment of the top safety, technical, cost, and schedule risks to Ground Systems and documentation of the approach to manage and accept risks.	Data to be provided at meeting IAW DRD 101 MRP Appendix B	Oct/2014
Draft VAC-1 execution plan and schedule provided.	Data to be provided at meeting IAW DRD 101 MRP Appendix B	Oct/2014

Ground Segment Critical Design Review (CDR) Interim Milestone **(As proposed, interim Contractor milestone in support of DCR)** **DCR Interim Milestone 01A.2**	**Planned Start Date and Completion Date (mo/yr):** **CMO CDR: Oct/2014** **Grnd Sys CDR: Nov/2014** **Combined Final RID Board Dec/2014**	**Amount:** (b) (4)
Acceptance Criteria:		
a) For both CMO and Ground Systems CDRs the following apply:	Data dispositioned to the level required per DRD 101 MRP Appendix B	
1) Top-level requirements are agreed upon, finalized, stated clearly and consistent with the final design	Data dispositioned to the level required per DRD 101 MRP Appendix B	
2) The flow down of verifiable requirements is complete and proper or, if not, an adequate plan exists for timely resolution of open items. Requirements are traceable to mission goals and objectives.	Data dispositioned to the level required per DRD 101 MRP Appendix B	
3) The final design is expected to meet the requirements at an acceptable level of risk	Data dispositioned to the level required per DRD 101 MRP Appendix B	
4) Definition of technical interfaces are consistent with the overall technical maturity and provides an acceptable level of risk	Data dispositioned to the level required per DRD 101 MRP Appendix B	
5) Adequate technical margins exist with respect to the TPMs or, if not, an adequate plan exists for timely resolution of open items	Data dispositioned to the level required per DRD 101 MRP Appendix B	
6) Project risks are understood and have been assess, and plans, a process, and resources exist to effectively manage them	Data dispositioned to the level required per DRD 101 MRP Appendix B	
7) The operational concept is technically sound, incorporates human factors considerations (as appropriate) and includes flow down of requirements for its execution	Data dispositioned to the level required per DRD 101 MRP Appendix B	

Ground Segment Critical Design Review (CDR) Interim Milestone **(As proposed, interim Contractor milestone in support of DCR)** **DCR Interim Milestone 01A.2**	**Planned Start Date and Completion Date (mo/yr):** **CMO CDR: Oct/2014** **Grnd Sys CDR: Nov/2014** **Combined Final RID Board Dec/2014**	**Amount:** (b) (4)
8) Completion of review per Milestone Review Plan (DRD 101)	Data dispositioned to the level required per DRD 101 MRP Appendix B	
b) VAC-1 plan and schedule reviewed. VAC products provide integrated assessment of system performance against applicable CCTS requirements and are consistent with the V&V plan. Schedule inter-dependencies are correctly identified. Risks to execution are identified and mitigation plans documented.	Data dispositioned to the level required per DRD 101 MRP Appendix B	