University-affiliated Spaceport Technology Development Contract NAS1003006

100736

TASK ORDER

TO Ref.	Task Order No.	Contract Year	Task Order Revision	Reference Plan Revision	Laboratory/Area	Type:
SPI	00369	7	B	B		Mission Support

Title:

Command, Control, and Communication (CCC) Development

Director Area	R&D: No / Scope Change: Yes	Manager Group	Period of Performance:
Systems & Project Engineering	R&D: No Scope Change: Yes	Project Engineering	From: 07/07/2006 To: 09/30/2009

Note: Target Costs change only if scope changes	CY1 to CY5 (K$)	CY6 (K$)	Contract Year 7 (CY7) Cost Targets FROM:	DELTA:	TO:	CY8 (K$)	OUTYEARS (K$)	TOTAL (K$)
TOTAL ADJUST TARGET LABOR COSTS								
ESTIMATED OTHER DIRECT COSTS								
SUBTOTAL TOTAL ESTIMATED COSTS								
AWARD FEE (on labor only)								
INCENTIVE FEE (on labor only)								
TOTAL COST AND FEE	1,790.04	5,382.55	$6,854,338	$436,957	$7,291,296	0.00	0.00	14,463.89

FS	PROGRAM	FUND CODE	$ FROM	$ DELTA	$ TO	INITIALS
1	CONSTL	321379.09.01.03.11	$1,050,000.00	$0.00	$1,050,000.00	
2	CONSTL	292360.09.25.04	$1,008,203.00	$0.00	$1,008,203.00	
3	CONSTL	321379.09.01.04.01.11	$180,315.00	$0.00	$180,315.00	
4	CONSTL	292360.09.25.07.01	$8,116,395.00	$0.00	$8,116,395.00	
5	CONSTL	292360.09.28.10.02	$78,740.00	$0.00	$78,740.00	
6	CONSTL	292360.09.25.13.01	$768,833.00	$0.00	$768,833.00	
7	CONSTL	292360.09.25.01	$134,848.00	$0.00	$134,848.00	
8	CONSTL	292360.09.25.02	$905,119.00	$0.00	$905,119.00	
9	CONSTL	292360.09.25.12	$1,054,460.00	$716,553.00	$1,771,013.00	LH 6-15-09
TOTAL CUMULATIVE FUND LIMIT (NOT TO EXCEED)			$13,296,913.00	$716,553.00	$14,013,466.00	

NASA TASK ORDER MANAGER/ ORG / PHONE — DATE 6/10/09 SIGNATURE Gregory R Clements Gregory Clements / NE-C / (321)867-8992	CUSTOMER/TECH REP(OPTIONAL)/ ORG / PHONE — DATE 6/11/09 SIGNATURE Kirk Lougheed / LX-D1-1 / (321)867-9252
CERTIFICATION OF FUNDING/ ORG / PHONE — DATE 6/15/09 SIGNATURE Carol Davis Carol Davis / GG-C-A2 / (321)867-5942	CONTRACT TECHNICAL MANAGER/ ORG / PHONE — DATE 6/17/09 SIGNATURE Meredith Chandler Ned Voska / NE-I2 / (321)867-4878
CONTRACT OFFICER/ ORG / PHONE — DATE 6/17/09 SIGNATURE Joyce McDowell / OP-ES / (321)867-3437	ACCEPTANCE ACKNOWLEDGEMENT BY CONTRACTOR/ ORG / PHONE — DATE SIGNATURE Martin Cummins / USTDC / (321)867-5408

1. DOCUMENT NO(S) TO Ref: SPI TO No.: 00369 TO Rev: B Plan Rev: B	Kennedy Space Center Document Continuation Sheet	2. Page 2 of 5
		3. OFFICE:
4. DOCUMENT: Title: Command, Control, and Communication (CCC) Development		5. DATE:

A. PROJECT DESCRIPTION & SCOPE

TO Rev B: The Task Order Revision B is generated in response to Task Order Plan Revision B. The purpose of this Revision is to increase planned labor due to additional support requirements for Task 3.4. This Revision also adjusts labor categories to reflect current skill requirements.

TO Rev. A: The Task Order Revision A is generated in response to Task Order Plan Revision A. The purpose of this revision is to adjust the planned labor efforts to be consistent with current support expectations and to provide additional capability and skills through the use of training. The labor updates include the realignment of labor categories and adjustment of labor hours to align with current expectations.

The Task Order Lead has changed from Tom Kelly to Gary R. Prevost.

CY6/FY08 Activity:

During CY6/FY08, USTDC provided support for Launch Control System (LCS) hardware, software, and simulation systems development. Effort required was less than originally anticipated, and the target values have been adjusted to reflect actual effort.

CY7/FY09 Activity:

During CY7/FY09, USTDC will continue to provide support for the LCS development. USTDC will also provide Systems Engineering support for the Communications System, and development support for subsystems of the Communications and Tracking Station.

B. TASKS

1.0 System Engineering and Integration Support

1.1 CCC Element SE & I Support

1.11 The contractor shall provide support to develop and maintain SE & I processes and procedures for the CCCE.

1.12 The contractor shall provide support to define and maintain the CCCE Level IV requirements.

1.13 The contractor shall provide support to define and maintain CCCE Level IV external interface requirements.

1.2 Launch Control System SE & I Support

1.21 The contractor shall provide support to develop and maintain SE & I processes and procedures for the LCS.

1.22 The contractor shall organize a planning committee of stakeholders for the LCS system architecture and shall support the system development plan for the LCS.

1.23 The contractor shall provide system engineering support to plan and perform LCS design integration and specification.

1.24 The contractor shall provide system engineering support to plan and perform LCS testing.

1.25 The contractor shall support the Configuration Management (CM) infrastructure and integration to develop processes, procedures, plans, and system administration tools.

1.3 Communications and Imagery Systems SE & I Support

1.31 The contractor shall provide support to define and document the SE & I processes and best practices for Communications and Imagery Level V and Level VI activities.

1.32 The contractor shall provide support to define and document requirements for Communications and Imagery Systems.

1.33 The contractor shall support oversight of the Communications and Imagery Level VI SE & I activities.

1.34 The contractor shall provide support to review all Communications and Imagery work products prior to review and release.

1.35 The contractor shall provide support for identifying, locating, and evaluating existing documentation for each Heritage (Legacy) Communication and Imagery Subsystem. The contractor shall assess existing documentation for compliance with CxP requirements.

2.0 Hardware Support

2.1 The contractor shall support the KSC-CMP-98591 - *CCC Configuration Management (CM) Plan* for hardware development and design. The contractor shall develop process plans to manage commercial-off-the-shelf (COTS) audits, inventory, and logistic processes. The contractor shall also support the integration of the CM process into the hardware development.

2.2 The contractor shall provide support for the development and analysis of the network support tools and requirements.

2.3 The contractor shall provide support for the development and analysis of the Level V hardware requirements.

2.4 The contractor shall provide support for the development of detailed design requirements, deliverables, Hardware Configuration Item (HWCI), and project planning documentation.

2.5 The contractor shall provide support for the development of prototype articles, hardware test tools, and testing.

2.6 The contractor shall provide support for evaluation of the COTS hardware requirements and selections.

3.0 Software Support

3.1 The contractor shall provide support for software project management.

3.2 The contractor shall provide support for conducting requirements analyses and documenting Level V software requirements.

3.3 The contractor shall provide support for conducting detailed design analysis of the software requirements.

3.4 The contractor shall provide support for conducting software implementation of the approved detailed design.

3.5 The contractor shall provide support for conducting software testing.

3.6 The contractor shall provide support for the development of plans for Software Integration and Testing (SwIT).

3.7 The contractor shall provide support for conducting software configuration management of the development artifacts.

4.0 Simulation Support

4.1 The contractor shall provide support for the development and analysis of the Level V simulation requirements.

4.2 The contractor shall provide support for the development of prototype articles, simulation test tools, and testing.

4.3 The contractor shall provide support for the development of the simulation products.

5.0 System Development Lifecycle Support

5.1 The contractor shall support the development of engineering products throughout the system development lifecycle.

6.0 Lab and Network Support

6.1 The contractor shall equip, configure and maintain the CxP supported labs by removing and installing necessary equipment and documenting the labs' configuration.

6.2 The contractor shall develop, update, and implement detailed plans for extending the development network to other KSC facilities as required.

7.0 Communication and Tracking Station Subsystems Support

7.1 The contractor shall support the development of the Communication and Tracking Station (C & TS) subsystem design products.

8.0 Project Engineering Support

8.1 The contractor shall provide Project Engineering support to conduct progress reviews to ensure that technical, schedule, and cost objectives are being attained.

9.0 Engineering Support Services

9.1 The contractor shall provide engineering support services for engineering drawings, documents, and specifications releases.

C. MILESTONES/DELIVERABLES

1. - System Engineering & Integration support.
Start Date : 10/01/2008 **End Date** : 09/30/2009

2. - Hardware development support.
Start Date : 10/01/2008 **End Date** : 09/30/2009

3. - Software development support.
Start Date : 10/01/2008**End Date :** 09/30/2009

4. - Simulation development support.
Start Date : 10/01/2008**End Date :** 09/30/2009

5. - System development lifecycle support.
Start Date : 10/01/2008**End Date :** 09/30/2009

6. - Lab and Network support.
Start Date : 10/01/2008**End Date :** 09/30/2009

7. - Communications and Tracking Station subsystem development support.
Start Date : 10/01/2008**End Date :** 09/30/2009

8. - Project Engineering support.
Start Date : 10/01/2008**End Date :** 09/30/2009

9. - Engineering Support services.
Start Date : 10/01/2008**End Date :** 09/30/2009

D. STANDARDS OF PERFORMANCE (METRICS)

1. - Task Order metrics will be collected in accordance with the USTDC Internal Surveillance Plan.

TO No. **00369** TO Rev. **B** Plan Rev. **B** Year **7** Title **Command, Control, and Communication (CCC) Development**

TO Status:	IN REVISION	PM:	Gregory Clements	NE-C	USTDC Director	Dennis Weaver	ASRC-19
Verified Date:		Customer:	Kirk Lougheed	LX-D1	USTDC Manager:	Paul Gamble	ASRC-23
Program	CONSTL				Lead	Gary Prevost	ASRC-23

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TO Rev. A: The Task Order Revision A is generated in response to Task Order Plan Revision A. The purpose of this revision is to adjust the planned labor efforts to be consistent with current support expectations and to provide additional capability and skills through the use of training. The labor updates include the realignment of labor categories and adjustment of labor hours to align with current expectations.

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B. MILESTONES/DELIVERABLES

1. - System Engineering & Integration support.
Start Date : 10/01/2008 **End Date :** 09/30/2009

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Start Date : 10/01/2008 **End Date :** 09/30/2009

3. - Software development support.
Start Date : 10/01/2008 **End Date :** 09/30/2009

4. - Simulation development support.
Start Date : 10/01/2008 **End Date :** 09/30/2009

USTDC Technical Lead SIGNATURE Gary Prevost	DATE 6/10/9	USTDC S&MA SIGNATURE for Raymond Anderson Susan M Davis	DATE 6/10/09
USTDC Manager SIGNATURE Paul Gamble	DATE 6/10/09	NASA Approvals	6/11/0
USTDC Director SIGNATURE Dennis Weaver Paul H. Gamble for	DATE 6/10/09	Task Order Manager / Org. SIGNATURE Gregory Clements / NE-C	DATE 6/10/09
USTDC POB SIGNATURE Pedro Medellin	DATE 6/10/09	Contract Technical Manager / Org. SIGNATURE Ned Voska / NE-I2 Meredith Chandler	DATE 6/17/09

5. - System development lifecycle support.
Start Date : 10/01/2008 **End Date :** 09/30/2009

6. - Lab and Network support.
Start Date : 10/01/2008 **End Date :** 09/30/2009

7. - Communications and Tracking Station subsystem development support.
Start Date : 10/01/2008 **End Date :** 09/30/2009

8. - Project Engineering support.
Start Date : 10/01/2008 **End Date :** 09/30/2009

9. - Engineering Support services.
Start Date : 10/01/2008 **End Date :** 09/30/2009

C. TECHNICAL APPROACH

1.0 System Engineering and Integration (SE & I) Support

1.1 CCC Element SE & I Support

1.11 The contractor shall provide support to develop and maintain SE & I processes and procedures for the CCCE. (WBS 1.1.1.1)

USTDC will identify, schedule, and assign resources to support the development of each process and procedure. For each SE & I document, USTDC personnel will be assigned lead, support, or review roles. The lead role will have primary responsibility for writing the document and will also provide status on progress. The support role will be responsible for writing specific sections of the document and will participate in meetings and discussions related to document composition. The review role will provide a thorough check of the draft document and provide comments. Designated roles for each document will be listed in a matrix and will be made accessible to the team for reference.

In order to support this Task Order, USTDC will participate in TIMs at various NASA facilities. In addition, USTDC will obtain office materials. (TP Rev A)

1.12 The contractor shall provide support to define and maintain the CCCE Level IV requirements. (WBS 1.1.1.2)

USTDC will work closely with NASA to maintain the CCCE requirements baseline. If a modification is required, USTDC will research the modification, develop draft wording, and coordinate the change with all affected organizations. USTDC will support the formal change process by arranging for all required engineering review and concurrence, maintaining the status of comment disposition, and preparing material for presentation to the required control boards.

1.13 The contractor shall provide support to define and maintain CCCE Level IV external interface requirements. (WBS 1.1.1.3)

USTDC will research and identify potential interfaces to the CCC Element. USTDC will assess and describe the potential interface and its relationship to CCCE design. USTDC will monitor the development progress of the potential interface by reviewing current documentation, attending design reviews, and establishing points of contact. Information on the state of the potential interface will be documented and

communicated to LCS Project personnel.

In order to support the Electrical Signals TIM, USTDC will travel to MSFC (TP Rev A)

1.2 Launch Control System SE & I Support

1.21 The contractor shall provide support to develop and maintain SE & I processes and procedures for the LCS. (WBS 1.1.2.1)

USTDC will support this task by following the process described in paragraph 1.11.

1.22 The contractor shall organize a planning committee of stakeholders for the LCS system architecture and shall support the system development plan for the LCS. (WBS 1.1.2.2)

USTDC will ensure the proposed system architecture meets functional, performance, safety, and security requirements. This will be accomplished by obtaining support from all organizations that are development and operational stakeholders. Specifically, USTDC will develop and maintain the system build plan, identifying internal and external deliveries and delivery content. USTDC will coordinate with external organizations as required to ensure the plan meets both project and program needs. USTDC will provide support to produce the system design document that accurately reflects the LCS system architecture and design. USTDC will represent the LCS in program meetings, as requested by the customer.

To provide the capability assessment support, USTDC will obtain Capability Maturity Model Integration (CMMI) training. (TP Rev A)

1.23 The contractor shall provide system engineering support to plan and perform LCS system design integration and specification. (WBS 1.1.2.3)

USTDC will support this task by actively participating in System Architecture team activities, coordinating with developers to ensure Level IV requirements are being met, and reviewing system designs for adherence to defined standards.

1.24 The contractor shall provide system engineering support to plan and perform LCS testing. (WBS 1.1.2.4)

USTDC will provide systems engineering support for systems test by reviewing test plans and procedures and recommending changes, by developing test procedure documentation, including system test flow diagrams, by participating in the test, by analyzing the results, and by contributing to the test report.

1.25 The contractor shall support the Configuration Management (CM) infrastructure and integration to develop processes, procedures, plans, and system administration tools. (WBS 1.1.2.5)

USTDC will provide support in the continued development of a CM system to manage all aspects of LCS software and hardware development. Elements of the CM system will be requirement tracking; software/hardware serial number configuration and tracking; software release and version tracking; COTS hardware and software version tracking; software integration tracking; software and hardware bug and fix tracking; and testing and integration. USTDC will continue to develop a process to track commercial-off-the-shelf (COTS) hardware or software to be used within the development process as either product or development tools. This process will track by manufacture release and version data for compatibility and configuration requirements. This system will also track physical location and/or

licensing criteria depicting user location and hardware/software installation dates for renewal and/or removal for conformance with license agreements. The process will use tools available to the Constellation Program. USTDC will follow and implement KSC-CMP-98591, CCC Configuration Management (CM) Plan.

In order to provide the capability to perform logical partitioning, IBM training will be obtained. (TP Rev A)

1.3 Communications and Imagery Systems SE & I Support

1.31 The contractor shall provide support to define and document the SE & I processes and best practices for Communications and Imagery Level V and Level VI activities. (WBS 1.1.3.1)

USTDC will provide support by reviewing existing process documents for applicability and completeness, and providing recommendations for modifications. Existing CCCE and LCS SE & I process documentation will be used as a reference source, as will industry best practices. All recommended process definitions and modifications will be coordinated with the NASA Communications SE & I Lead prior to implementation.

1.32 The contractor shall provide support to define and document requirements for Communications and Imagery Systems. (WBS 1.1.3.2)

USTDC will provide support to assist in the developing requirements documents, reviewing and assessing existing requirements documents, and provide recommendations for modifications.

1.33 The contractor shall support oversight of the Communications and Imagery Level VI SE & I activities. (WBS 1.1.3.3)

USTDC will provide support for this task by establishing a team relationship with NASA and other contractor SE & I personnel. USTDC will assist in establishing clear objectives for SE & I activities, applying established SE & I processes, and reviewing products and results.

1.34 The contractor shall provide support to review all Communications and Imagery work products prior to review and release. (WBS 1.1.3.4)

USTDC will support this task by first establishing a process that ensures SE & I visibility into all work products. This will include verifying that all products are shown on the Level V and Level VI schedules. This will also be included as a required step in Communications System process documents. USTDC will review each work product to ensure the product meets required standards for content and format.

1.35 The contractor shall provide support for identifying, locating, and evaluating existing documentation for each Heritage (Legacy) Communication and Imagery Subsystem. The contractor shall assess existing documentation for compliance with CxP requirements. (WBS 1.1.3.5)

USTDC will develop a plan for accomplishing this task and submit the plan to the NASA Communications SE & I Lead for approval. The plan will list required documentation for each subsystem, with a basic checklist of required content. The plan will also include a schedule for accomplishing this review, and recommendations for support from NASA and other contractors involved in the Communications Project. USTDC will assist in the review, and provide recommendations for modifications and additions to documentation when required. USTDC will track progress and provide periodic status to NASA as the effort progresses.

and application components. Various gateway and communication system environments will also be provided for the testing of the prototypes.

2.6 The contractor shall provide support for the evaluation of the COTS hardware requirements and selections. (WBS 1.2.6)

USTDC will provide support to develop requirements for COTS hardware products that may be used in the design. USTDC will conduct market research to identify candidate COTS products that meet defined requirements. USTDC will acquire test articles by procurement, vendor loan, or as Government Furnished Equipment, and provide laboratory support for COTS product testing and validation. All COTS testing will be performed to the manufacturer's standards. Test results, product evaluation, and technical recommendations will be reported to NASA.

3.0 Software Support

3.1 The contractor shall provide support for software project management. (WBS 1.3.1)

USTDC will provide support to the software development product groups for software project management in the areas of process development and improvement, metrics collection and reporting, presentation development and delivery, and scheduling activities. This support will include writing, updating, and reviewing software development artifacts.

3.2 The contractor shall provide support for conducting requirements analyses and documenting Level V software requirements. (WBS 1.3.2)

USTDC will provide support to the software development product groups in the form of analysis of software requirements. The requirements phases of the software development lifecycle are defined in the Software Development Plan (SDP). USTDC will support the development of requirements, use cases, and prototypes.

3.3 The contractor shall provide support for conducting detailed design analysis of the software requirements. (WBS 1.3.3)

USTDC will provide support to the software development product groups in the execution of software design as defined in the Software Development Plan. The design will include requirements traceability, Unified Modeling Language diagrams, and software design documents.

3.4 The contractor shall provide support for conducting software implementation of the approved detailed design. (WBS 1.3.4)

USTDC will provide support to the software development product groups in the execution of software implementation as defined in the Software Development Plan. Implementation support will include developing source code in languages specified by NASA.

3.5 The contractor shall provide support for conducting software testing. (WBS 1.3.5)

USTDC will provide support to the software development product groups in the execution of software testing as defined in the Software Development Plan. The support will include the development of plans, procedures, execution, and results reporting of the test event.

3.6 The contractor shall provide support for the development of plans for Software Integration and

Testing (SwIT). (WBS 1.3.6)

USTDC will provide support to the software development product groups in the execution of SwIT as defined in the Software Development Plan and the LCS Software Integration & Test Plan. USTDC will support the coordination between hardware and software groups, and support integration efforts for software deliveries.

3.7 The contractor shall provide support for conducting software configuration management of the development artifacts. (WBS 1.3.7)

USTDC will support software configuration management activities. The support will consist of installation, development, builds, configuration, and training of tools and processes. The team (Jo Gonzales, Yvette Chamberlin, and David Rosenfeld) will provide support as required to accomplish build requirements. The team will support off hours builds by remotely checking the status and fixing builds.

Software Builds

LCS system builds will occur each evening during the week and possible weekend builds. The build tool schedules and kicks off the build; however, the system build team needs the capability to monitor the build as well as access the build scripts and logs to ensure the development community has a new baseline to develop with the following morning.

CM Tool Support

The Support Software team currently manages and administers multiple databases including ClearCase, ClearQuest, ReqPro and BuildForge. The team will have the ability to administer the databases at any given time to ensure the development community has a productive working environment.

4.0 Simulation Support

4.1 The contractor shall provide support for the development and analysis of the Level V simulation requirements. (WBS 1.4.1)

USTDC will provide support for the further development of simulation requirements including interface requirements defined as Element-to-Element, Element-to-Ground, and Ground-to-Ground subsystems.

4.2 The contractor shall provide support for the development of prototype articles, simulation test tools, and testing. (1. 4.2)

USTDC will provide support to the NASA-wide effort for the integration, test and prototype missions of the Integrated Mission Simulation (IMSim) and the Distributed System Integration Laboratory (DSIL). USTDC will also provide support to the programming effort to establish Simulation within IMSim and DSIL that represents Ground Operations at KSC. USTDC will support the establishment of a simulation paradigm for activities based on Trick, the NASA-provided simulation tool.

4.3 The contractor shall support the development of the simulation products. (WBS 1.4.3)

USTDC will provide support to develop the documents needed for the simulation efforts. This work will contribute to the overall software architecture for LCS and control of each Ground Support Equipment subsystem. USTDC will provide support for simulation software development and COTS integration needed to build a simulation capability for the Ground Support Equipment Models.

5.0 System Development Lifecycle Support

5.1 The contractor shall support the development of engineering products throughout the system development lifecycle. (WBS 1.5.1)

In addition to the support described in paragraphs 1.1 through 4.3, USTDC System Engineering and Integration, Hardware, Software and Simulation Engineers will provide the following support when required throughout the system development lifecycle:

Requirements Support

USTDC will provide support as required for the continuing development and review of requirements, including system and interface requirements defined as Element-to-Element, Element-to-Ground, Subelement-to-Subelement, and Ground-to-Ground systems. USTDC will continue to participate in a thorough review of the Level IV Element Requirements Document and Interface Requirements Document. Any issues discovered with the Level IV requirements will be documented and communicated.

Schedule Support

USTDC will support schedule maintenance by providing status, progress to date, and estimated task completion. Updated schedule data will be provided on a recurring basis in order to support the project control processes that have been established.

Design Support

USTDC will provide support as required for development of design concepts and design analysis required for related ground processing systems, subsystems, subelements, and individual elements.

Procurement Support

USTDC will provide support for hardware and software procurement as required. Support will include review of vendor specifications, and comparison of product capabilities to known requirements. USTDC will support the generation of Rough Order of Magnitude cost estimates as required in accordance with KSC-SPEC-G-0003, GSE Cost Estimating.

Software Support

USTDC will provide support to develop and maintain the Software Development Plan and other software requirements documents as required.

Hardware Readiness Support

USTDC will provide support for the development of system logistics support plans and spares analyses as required.

Safety and Mission Assurance Support

USTDC will provide support as required for the development of hazard analyses, reliability analyses, and safety assessments.

Verification and Validation Support

USTDC will provide support as needed for the development of system verification and validation plans,

component-level certification plans, and requirement traceability matrices. USTDC will provide system schematics, models, and system descriptions as needed. USTDC will provide system design information as needed to support the requirement traceability matrix.

Material and Processes Design Support

USTDC will provide support as needed for Material and Processes (M & P) reviews. USTDC will support these reviews by providing component details. These details will be captured from component vendor parts and materials lists and compared with KTI-5209, Material Usage Code, and KNPR 8072.1, KSC M & P Control Procedural Requirements.

Design Review Preparation

USTDC will provide support as required for the preparation of design reviews as defined in KDP-KSC-P-2713, Technical Review Process, and NPR 7123.1, NASA Systems Engineering Processes and Requirements. This support will include distribution of materials as needed, producing presentation materials, collecting review comments, maintaining action item lists, and supporting comment disposition.

6.0 Lab and Network Support

6.1 The contractor shall equip, configure and maintain the CxP supported labs by removing and installing necessary equipment and documenting the labs' configuration. (WBS 1.6.1)

USTDC will provide support for the CxP supported labs in the Space Station Processing Facility (SSPF) and other KSC facilities as required. USTDC will support on-going planning activities with NASA to define the specific capabilities needed, and will provide recommended solutions. When approved by NASA, USTDC will equip and configure computer equipment, software, tools, and network infrastructure for each lab.

All lab systems will be developed, modified, installed, and implemented under specific requirements to maintain a secure system and will comply with all Federal laws and guidelines, including:

International Traffic in Arms Regulations (ITAR)

Federal Infomration Security Management Act (FISMA)

Federal Infomration Processing Standard (FIPS) 199

National Institute of Standard and Technology (NIST) 800 Series

NASA NPR 2810.1, "NASA Infomration Security Policy"

The customer will verify that the installation or modification meets requirements. When approved, the new or revised system configuration data will be recorded in the Command, Control and Communications Configuration Management system. USTDC will adhere to the CCC CM policies and procedures for all labs.

6.2 The contractor shall develop, update, and implement detailed plans for extending the development network to other KSC facilities as required. (WBS 1.6.2)

USTDC will define draft requirements for each approved development network modification, and provide these draft requirements to NASA. Next, USTDC will involve all stakeholders needed to refine the requirements, and will produce a detailed design, schedule, and installation plan. When approved by

NASA, USTDC will implement the network modification.

7.0 Communication and Tracking Station Subsystems Support.

7.1 The contractor shall support the development of the Communication and Tracking Station (C & TS) subsystem design products. (WBS 1.7.1)

Subsystems Requirements

The USTDC Electrical Systems Design Engineers will provide support for the further development of subsystem requirements including interface requirements defined as Element-to-Element, Element-to-Ground, and Ground-to-Ground systems. USTDC will continue to participate in thorough reviews of the Level IV Element Requirements Document and the Interface Requirements Document as they evolve to develop the Level V electrical requirements. The results of these reviews will be Level V requirements that will be documented in Subsystem Requirements Documents (SSRD). Additionally, any issues discovered with the Level IV requirements will be documented and communicated to Level IV System Integration. USTDC Electrical Systems will provide support to develop electrical requirements. These requirements will be developed by reviewing Shuttle requirements, CxP requirements, CCC Element Requirements Document requirements, and by other subsystem levied requirements.

Subsystem Schedules

USTDC Electrical Systems will provide support to develop and maintain subsystem schedules. The schedules will contain elements, projects and subsystems dependencies. In addition, the schedules will be updated to reflect the subsystems design progress and plan.

Design Support

USTDC Electrical Systems will provide support for development of design concepts and design analysis required for electrical related ground processing systems, subsystems and individual elements. The designs will be supported by performing engineering design calculations, developing electrical-mechanical subsystems schematics, electrical subsystems schematics, general equipment arrangement drawings, component and equipment sizing, block diagrams, drawing trees, network system calculation, development of concepts of operations, costs, and risks. The concepts will be developed with frequent technical exchanges with the appropriate Lead Design Engineer (LDE) and down-selected to a preferred subsystem solution. USTDC Electrical Systems will provide support for the maturation of the preferred subsystem solution to a design level. The design will be developed through frequent technical exchanges within the appropriate disciplines. USTDC will support developing and updating new and existing specifications and standards that are used for subsystem design. All drawings/models will be developed in compliance with CxP guidelines.

Hardware Procurement Support

USTDC Electrical Systems will provide support to develop the electrical subsystem parts and equipment lists as required. The electrical system schematics and design information will be captured and utilized to develop the Advance Order Parts List, instrumentation and control list, and long-lead design specifications. Items expected to take longer than 6 months to procure will be identified as long-lead. A review of the 79K specifications will be conducted to aid in the identification of additional long-lead items. USTDC Electrical Systems and Project Engineering (PE) will support generation of ROM cost estimates in accordance with KSC-SPEC-G-0003. The cost estimator will obtain the necessary design

information to estimate the project in the detail required for the design phases. Electrical Systems will provide support with the appropriate material design information and a design estimate for the critical design phase. All procurement support activities will be executed in accordance with the Federal Acquisition Regulation.

Software Support

USTDC Electrical Systems will provide support to develop the electrical subsystem software requirements document. This work will contribute to the overall software architecture for control of the system.

Hardware Readiness Support

USTDC Electrical Systems will provide support for the development of subsystem Logistics Support Analyses (LSA). The LSA work will be performed under another Task Order. Electrical Systems will support logistics under this Task Order by providing component lists and vendor design information to aid in the development of maintainability analysis and spares. Additionally, Electrical Systems will provide information to support a logistics plan which includes recommended spares, soft goods, calibration and maintenance information.

Safety and Mission Assurance Support

USTDC Electrical Systems personnel will provide support for the development of hazard analysis, reliability analysis, and safety assessments requirements in accordance with KNPR 8720.1, KSC Reliability, Maintainability and Quality Assurance Procedural Requirements. The Safety and Mission Assurance analyses will be performed under another Task Order. Electrical Systems will provide subsystem schematics, models, subsystem descriptions and CONOPS information under this Task Order to support analysis.

Verification and Validation Support

USTDC Electrical Systems will provide support for the development of subsystem Verification and Validation plans, component level certification plans, and requirements traceability matrices. Electrical Systems will provide subsystem schematics, models and subsystem description information to aid in the System Engineering plan development. Electrical Systems will provide subsystem design information to meet the requirements traceability matrix.

Design Review Preparation

USTDC Electrical Systems and the Project Engineering, System Engineering, and Mechanical Systems organizations will provide support for the preparation of internal design reviews and the final design packages submittal as defined in KDP-P-2713, and NPR 7123.1, NASA Systems Engineering Processes and Requirements. These preparations will be supported by printing and distributing drawing packages, collecting review comments, maintaining action item lists, and supporting Review Item Discrepancies. Additionally, presentation materials, such as PowerPoint presentations, will be prepared. These presentations will be peer reviewed by inter-disciplinary teams. These design reviews will be led by NASA electrical and other disciplinary Lead Design Engineers.

8.0 Project Engineering Support

8.1 The contractor shall provide Project Engineering support to conduct progress reviews to ensure that technical, schedule, and cost objectives are being attained. (WBS 1.8.1)

USTDC will provide a Project Engineer with responsibility and project management authority for all USTDC activity in support of CCCE development. USTDC will work closely with the NASA customer to develop and implement the project engineering processes most appropriate for this project. The USTDC Project Engineer will conduct progress reviews to ensure that technical, schedule, and cost objectives are being attained. Addition of resources or workload leveling will be coordinated by the Project Engineer with the USTDC senior management team to prevent schedule underperformance. USTDC will also support project meetings to record meeting minutes, track action items, and manage project directives.

9.0 Engineering Support Services

9.1 The contractor shall provide engineering support services for drawings, documents and specifications releases. (WBS 1.9.1)

USTDC will provide engineering support services to perform editorial reviews and to edit graphics and illustrations for CCCE system and subsystem documents and specifications. Formal and informal documents will be prepared as required. Informal documents may be reviewed by USTDC to ensure technical accuracy, formatting, technical style, and compliance with customer requests. USTDC will also provide drafting services for creation of engineering drawings and sketches.

D. BASIS OF ESTIMATE

The labor estimate for this Task Order was developed based on experience gained in the performance of this Task Order during CY6/FY08, and is consistent with staffing discussions held with the NASA Task Order Manager on October 3, 2008.

Senior personnel have been planned due to the complexity of the tasks.

Labor adjustments were made based on experience gained to date in performance of this task order and anticipated support required for the remainder of CY7/FY09. The new Basis of Estimate was agreed to in discussions held with the NASA Task Order Manager during the months of May and June 2009. (TP Rev B)

(Begin TP Rev A)

Labor adjustments were made based on experience gained to date in the performance of this Task Order.

ODC Total:

1 - - Travel for two persons to go to Houston, TX for three days in March of 2009 to support a technical interchange meeting at Johnson Space Center. Airfare - , rental car lodging - M & IE - , misc (taxes, phones, parking, tolls, gas) - . All estimates based on Government rates and vendor quotes.

2 -) Travel for two persons to go to California for three days twice during 2009 for technical interchange meetings at Ames Research Center. Airfare , rental car - lodging - M & IE - misc (taxes, phones, parking, tolls, gas) - $0.4K. All estimates based on Government rates and vendor quotes.

3 - trips) Travel for two persons to go to Huntsville, AL for three days twice during 2009 for technical interchange meetings. Airfare - rental car - lodgingin - M & IE - misc (taxes, phones, parking, tolls, gas) - All estimates based on

Government rates and vendor quotes.

4 - - 6 persons plus for rental cars) - IBM training for six persons in Austin, TX for five days in March of 2009. This training is to provide capability to perform logical partitioning (LPAR) on IBM Systems, administrator activities on the IBM System POWER5-based system, configuraion and management of LPARs running AIX and/or Linux using the hardware management console (HMC). Training - airfare - lodgingin - M & IE - misc (taxes, phones, parking, tolls, gas) - All estimates based on Government rates and vendor quotes.

5 - - Online training for 1 person on the Capability Maturity Model Integration (CMMI) assessment capability and transition to CMMI version 1.2 (model, method, and training).

6 - - Travel for one individual to go to Huntsville, AL for two days for and Electrical Signals Technical Interchange meeting. Airfare - , rental car - lodgingin - M & IE - misc (taxes, phones, parking, tolls, gas) - . All estimates based on Government rates and vendor quotes.

7 - - POV, local travel for all POV billed in FY09. USTDC personnel will travel to sites on KSC property to perform the activities on the TO. Quantity: miles @ per mile. All estimates based on Government rate.

8 - - Office materials (Locking CD case, etc.)

(End TP Rev A)

E. STANDARDS OF PERFORMANCE (METRICS)

1. - Task Order metrics will be collected in accordance with the USTDC Internal Surveillance Plan.

F. RISK ASSESSMENT

1. Schedule (RAC- 6, Green) (3/2/Near-term) Given the investigative, technical nature of the work involved on this project, there is a possibility that the resources needed to complete the work may not be readily available, which could result in delays if the mitigation strategies are unsuccessful.

The nature of the work to be conducted on this project requires specific skills and experience. Resources for these activities, in general, require specific KSC experience in the identified disciplines; therefore, the addition of new key resources would likely only come from a small pool with that experience.

Risk Response: Mitigate

Mitigation Strategy: The risk will be mitigated in three ways. First, the risk has been mitigated by interviewing and prequalifying prospective employees. This should help to minimize any delays in acquiring the needed resources. Second, the risk will be mitigated by USTDC project management conducting progress reviews to assess technical, cost, and schedule performance and coordinating real-time mitigation strategies with the USTDC senior management team. And third, the risk will be mitigated, if required, through the use of subcontractor resources.

The Risk Assessment has been reviewed and remains valid. (TP Rev B)

The Risk Assessment has been reviewed and remains valid. (TP Rev A)

G. OTHER PERTINENT INFORMATION

S & MA Statement: No direct S & MA support is planned.

Success Story: A Success Story is not anticipated due to the Mission Support nature of this Task Order.

University Affiliation: No University Affiliation has been initially planned; as the Task Order progresses, the opportunity for University Affiliation will be reevaluated.

New Technology Reports: No New Technology Reporst are expected for this Mission Support Task Order.

Export Control Compliance: All documents prepared and/or received under this TO will be reviewed for Export Control Requirements. Documents not properly marked will be processed using the appropriate administrative and management controls.

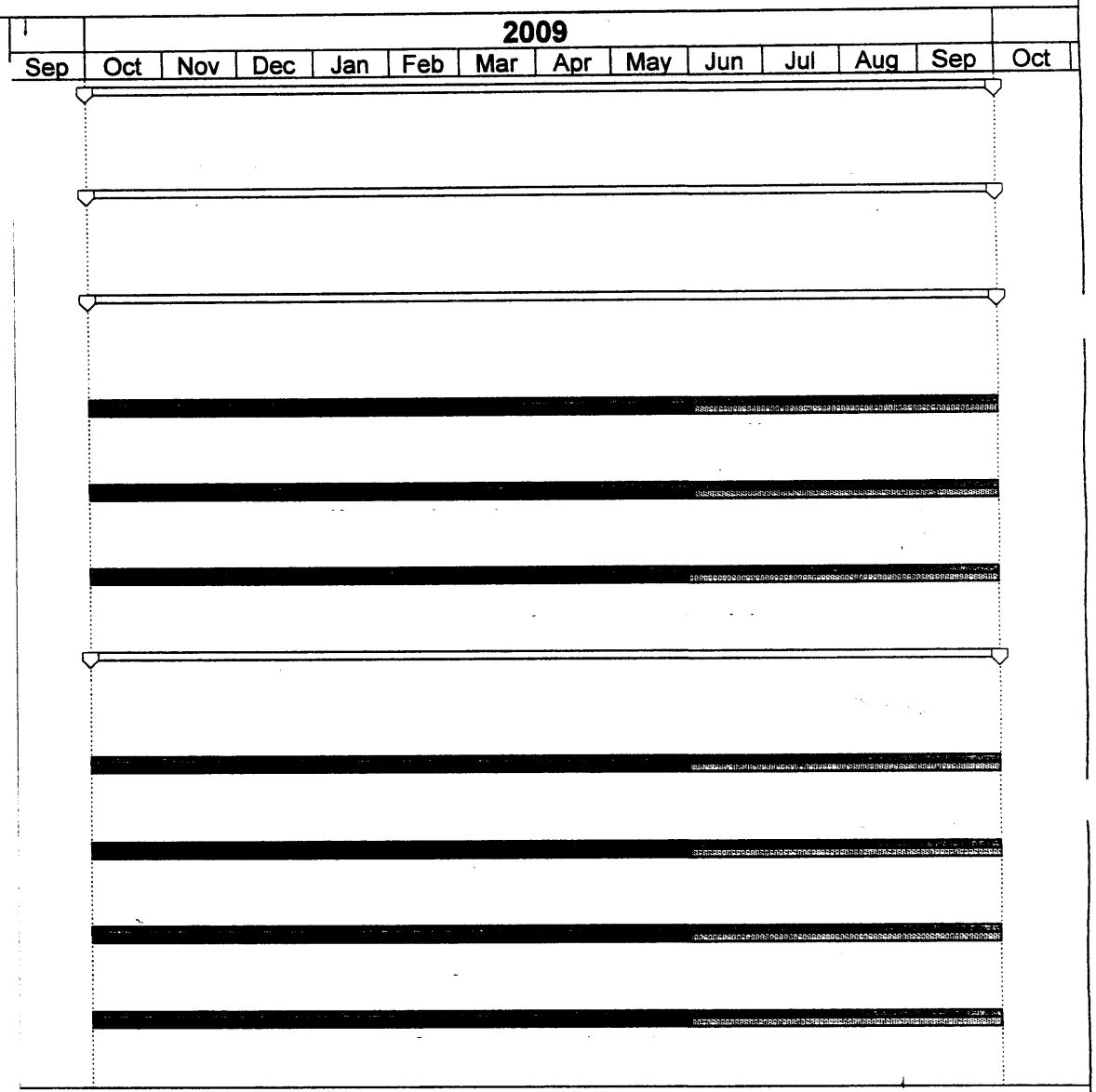
OCI: No opportunity for Organizational Conflice of Interest (OCI) could be identified in the planning of the Task Order.

The OCI Assessment has been reviewed and remains valid. (TP Rev B)

The OCI Assessment has been reviewed and remains valid. (TP Rev A)

COMMAND, CONTROL & COMMUNICATION DEVELOPMENT

ID	REV	WBS	Task Name	Work
1		1	**Command, Control and Communications**	
2		1.1	**System Engineerng & Integration**	
3		1.1.1	**CCC Element Support**	
4		1.1.1.1	Element Processes and Procedures	
5		1.1.1.2	Element Requirements	
6		1.1.1.3	External Interface Requirements	
7		1.1.2	**Launch Control System Suppport**	
8		1.1.2.1	System Processes and Procedures	
9		1.1.2.2	System Requirements	
10		1.1.2.3	System Architecture	
11		1.1.2.4	System Design Integration	

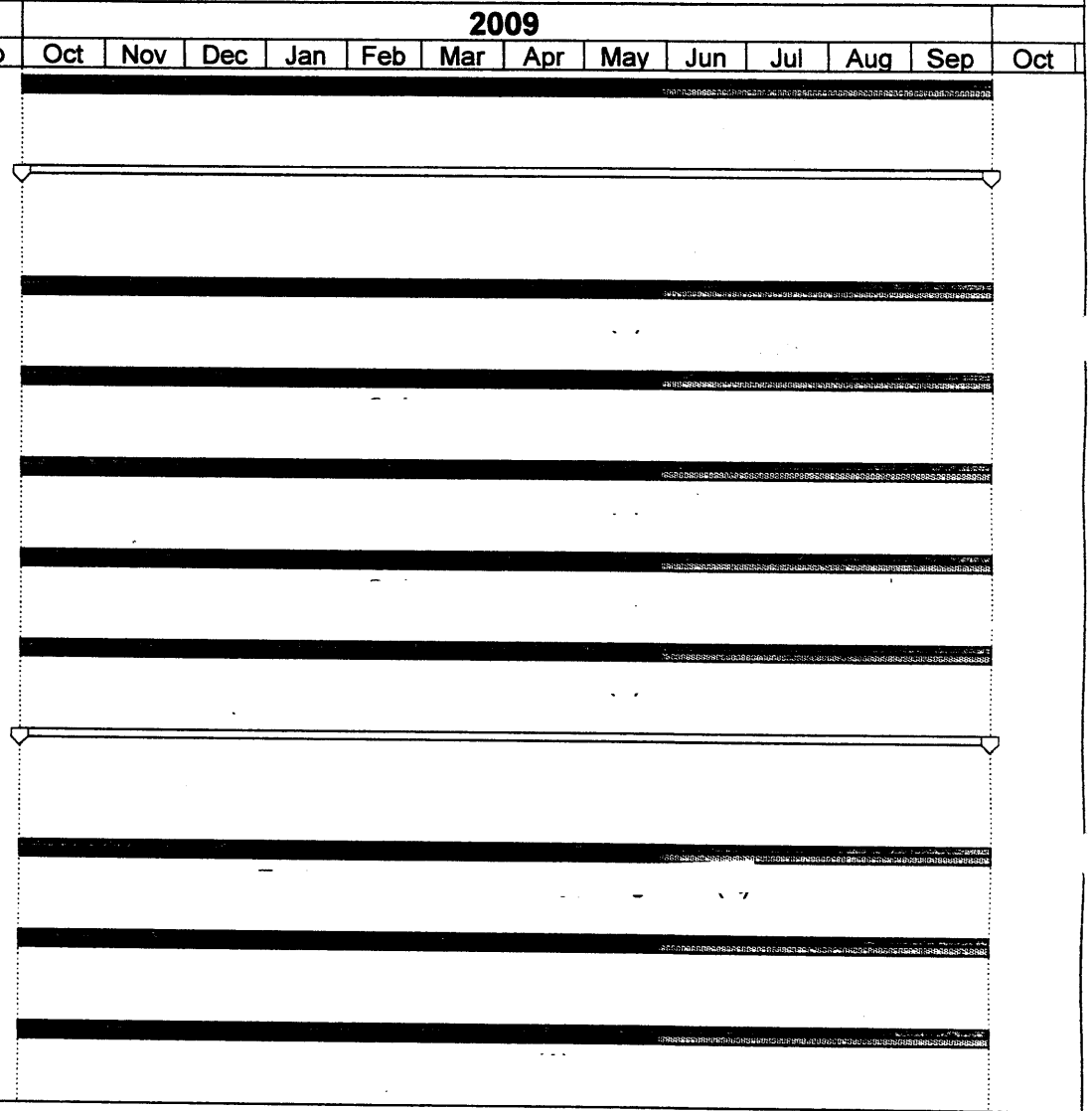


Task Order Number: 7SPI00369
Task Order Lead: GARY R. PREVOST
Supervisor: PAUL GAMBLE

Status Date: Sun 5/31/09

COMMAND, CONTROL & COMMUNICATION DEVELOPMENT

ID	REV	WBS	Task Name	Work
12		1.1.2.5	System Test	
13		**1.1.3**	**Communications System Support**	
14		1.1.3.1	System Processes and Procedures	
15		1.1.3.2	System Requirements	
16		1.1.3.3	System Engineering Oversight	
17		1.1.3.4	Subsystem Product Review	
18		1.1.3.5	System Documentation	
19		**1.2**	**Hardware**	
20		1.2.1	Configuration Management	
21		1.2.2	Network Support Tools	
22		1.2.3	Requirements Definition	

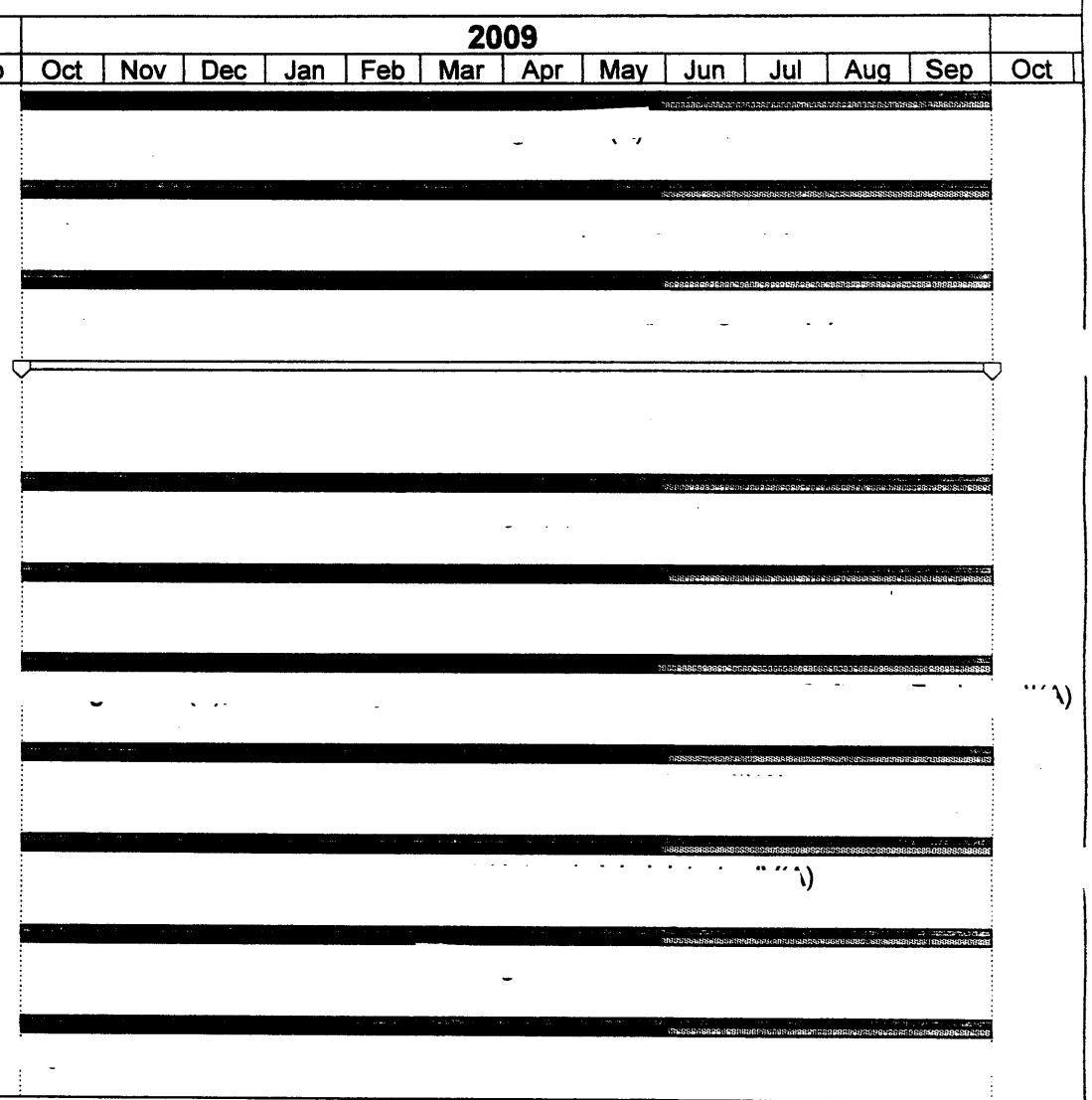


Task Order Number: 7SPI00369
Task Order Lead: GARY R. PREVOST
Supervisor: PAUL GAMBLE

Status Date: Sun 5/31/09

COMMAND, CONTROL & COMMUNICATION DEVELOPMENT

ID	REV	WBS	Task Name	Work
23		1.2.4	Detailed Design	
24		1.2.5	Prototypes and Test Tools	
25		1.2.6	COTS Hardware	
26	**B**	**1.3**	**Software**	
27		1.3.1	Software Project Management	
28		1.3.2	Requirements	
29		1.3.3	Design	
30	B	1.3.4	Implementation	
31		1.3.5	Test	
32		1.3.6	Software Integration and Test	
33		1.3.7	Configuration Management & Build Support	

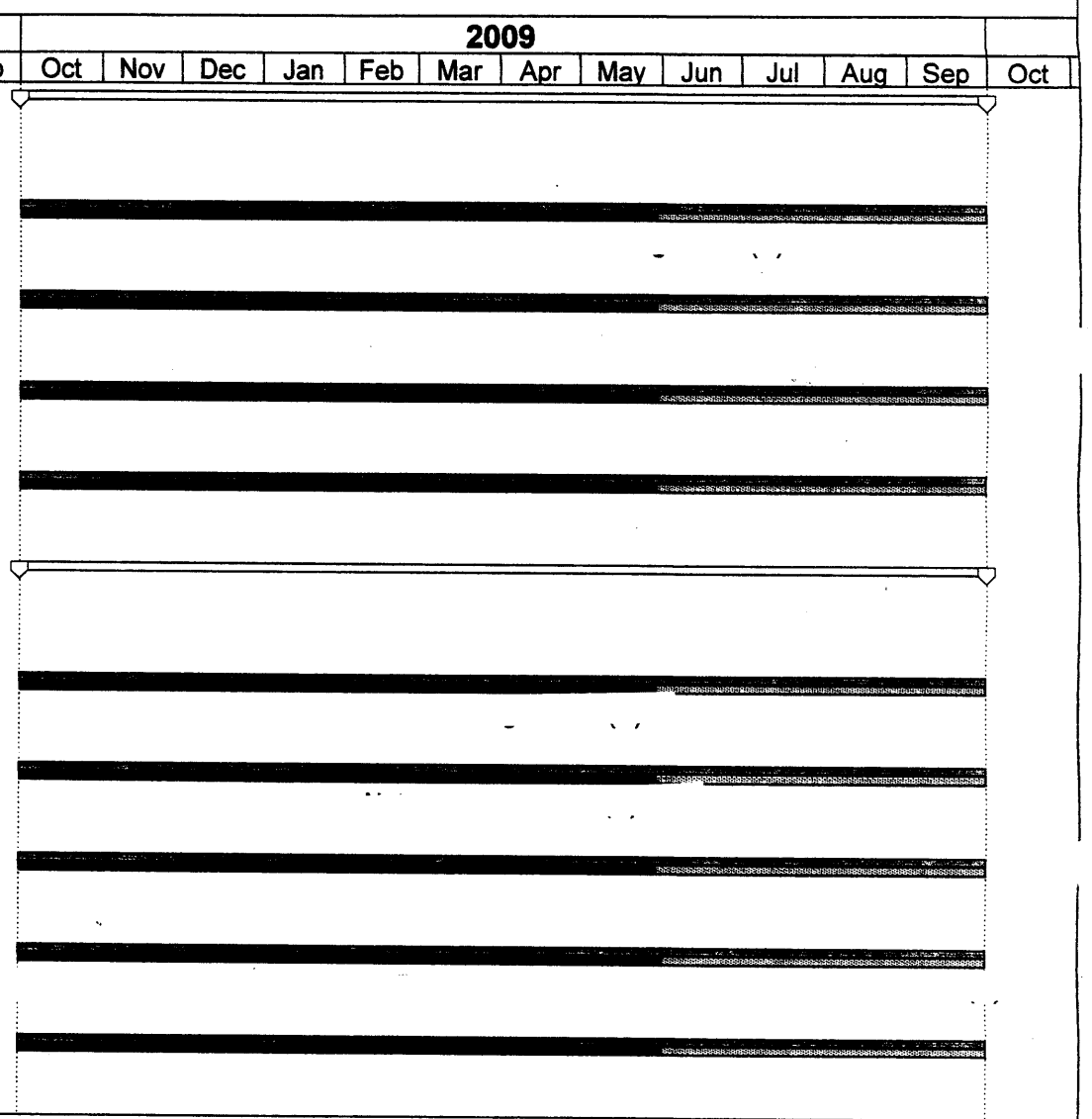


Task Order Number: 7SPI00369
Task Order Lead: GARY R. PREVOST
Supervisor: PAUL GAMBLE

Status Date: Sun 5/31/09

COMMAND, CONTROL & COMMUNICATION DEVELOPMENT

ID	REV	WBS	Task Name	Work
34		**1.4**	**Simulation**	
35		1.4.1	Requirements	
36		1.4.2	Prototypes and Test Tools	
37		1.4.3	Product Development	
38		1.5	System Development Lifecycle	
39		**1.6**	**Labs and Network**	
40		1.6.1	Lab Support	
41		1.6.2	Development Network Support	
42		1.7	Communication and Tracking Station Support	
43	B	1.8	Project Engineering	
44	B	1.9	Engineering Support Services	



Task Order Number: 7SPI00369
Task Order Lead: GARY R. PREVOST
Supervisor: PAUL GAMBLE

Status Date: Sun 5/31/09

USTDC TASK ORDER PLAN (J5)
SUMMARY

Task Order #	**00369**	Rev:	**B**	Title:	**Command, Control, and Communication (CCC) Development**
Contract Yr.	**7**	Plan Rev:	**B**		

Current Contract Year

	CY1-5	CY6	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total	CY8	CY9	From	Delta	Grand Totals
ASRC Labor																				
Labor Sub-Total																				
Total Labor Hours																				
Sub-Con. G&A Adj																				
M&A Adj																				
ODC G&A Adj																				
Adj. Labor Total																				
Consultants																				
ODC																				
Adj. ODC Total																				
Subtotal Est. Cost																				
Award Fee																				
Incentive Fee																				
Total Cost & Fee																		14,026,928	436,957	14,463,885

Approval For Task Order Number: 00369 B

USTDC Business Office Alicia Murphy 010/10/09

Cummins, Martin

Task Order#: 00369	CY: 7	Rev: B	Plan Rev: B	USTDC Task Order Plan Detail (ASRC)																
Productive Man-Hours																				
WYE	CY1-5	CY6	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total	CY8	CY9	From	Delta	Totals
Administrative Assistant V																				
Configuration Management Anal																				
Director																				
Electrical Engineer III																				
Electrical Engineer IV																				
Electrical Engineer V																				
Engineer III																				
Engineer IV																				
Engineer V																				
Engineering Aide III																				
Engineering Designer III																				
Engineering Designer IV																				
IT Security Administrator																				
IT Security Administrator I																				
IT Security Administrator II																				
IT Security Administrator IV																				
Manager																				
Network Administrator																				
Network Administrator IV																				
Network Engineer IV																				
Principal Investigator																				
Project Administrator I																				
Project Administrator II																				
Project Administrator III																				
Project Manager																				
Project Manager III																				
Project Manager IV																				
Software Engineer II																				
Software Engineer III																				
Software Engineer IV																				
Software Engineer V																				
Subject Matter Expert																				
Supervisor																				
Technical Editor III																				
Total WYE:																				

USTDC Business Office
TO: 00369 CY7 B
Print Date: 6/9/200912:22 pm

Alicia Murray 06/10/09
Cummins, Martin

Task Order #: 00369 CY: 7 Rev: B Plan Rev: B

USTDC Task Order Plan Detail (ASRC)

Productive Man-Hours

Labor Hours	CY1-5	CY6	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total	CY8	CY9	From	Delta	Totals
Administrative Assistant V																				
Configuration Management An																				
Director																				
Electrical Engineer III																				
Electrical Engineer IV																				
Electrical Engineer V																				
Engineer III																				
Engineer IV																				
Engineer V																				
Engineering Aide III																				
Engineering Designer III																				
Engineering Designer IV																				
IT Security Administrator																				
IT Security Administrator I																				
IT Security Administrator II																				
IT Security Administrator IV																				
Manager																				
Network Administrator																				
Network Administrator IV																				
Network Engineer IV																				
Principal Investigator																				
Project Administrator I																				
Project Administrator II																				
Project Administrator III																				
Project Manager																				
Project Manager III																				
Project Manager IV																				
Software Engineer II																				
Software Engineer III																				
Software Engineer IV																				
Software Engineer V																				
Subject Matter Expert																				
Supervisor																				
Technical Editor III																				
Total Hr																				

USTDC Business Office
TO: 00369 CY7 B

Cummins, Martin 06/10/09

Print Date: 6/9/200912:24 pm

Task Order#: 00369 CY: 7 Rev: B Plan Rev: B

USTDC Task Order Plan Detail (ASRC)

Labor Costs	CY7 Rate	CY1-5	CY6	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total	CY8	CY9	From	Delta	Totals
Administrative Assistant V																					
Configuration Management Analyst III																					
Director																					
Electrical Engineer III																					
Electrical Engineer IV																					
Electrical Engineer V																					
Engineer III																					
Engineer IV																					
Engineer V																					
Engineering Aide III																					
Engineering Designer III																					
Engineering Designer IV																					
IT Security Administrator																					
IT Security Administrator I																					
IT Security Administrator II																					
IT Security Administrator IV																					
Manager																					
Network Administrator																					
Network Administrator IV																					
Network Engineer IV																					
Principal Investigator																					
Project Administrator I																					
Project Administrator II																					
Project Administrator III																					
Project Manager																					
Project Manager III																					
Project Manager IV																					
Software Engineer II																					
Software Engineer III																					
Software Engineer IV																					
Software Engineer V																					
Subject Matter Expert																					
Supervisor																					
Technical Editor III																					
ASRC Labor																					

Projected ODC	CY1-5	CY6	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total	CY8	CY9	From	Delta	Totals
ODC																				
Consultants																				
ODC Sub-Total																				

USTDC Business Office
TO: 00369 CY7 B
Print Date: 6/9/200912:24 pm

Alicia O'Mungy 06/10/09
Cummins, Martin

TASK ORDER PLAN CHECKLIST

Task Order No. 7SP100369 **TO Rev.** B **TP Rev.** B **Validated By (PA):** Elaine Hanson

Technology Outreach: Was USTDC involved in securing funding? Yes( ) No(X)
If yes, notify Tech Outreach

PLAN TEXT		N/A
Contact Information		
Names and Mailstops	☒	
Risks Identified(*Required)		
Cost*	☒	
Schedule*	☒	
Technical*	☒	
Safety*	☒	☐
Other		
Security	☐	☒
Export Control	☐	☒
Health	☐	☒
Innovations	☐	☒
New Process	☐	☒
Environment	☐	☒
Quality Statement	☒	
Other Pertinent Information		
ODCs		
Travel	☐	☒
Training	☐	☒
Material	☐	☒
Equipment	☐	☒
Procurement	☐	☒
Consultants	☐	☒
Services	☐	☒
Identify Large Procurements	☐	☒
University Affiliation	☐	☒
New Technology Report	☐	☒
Success Story	☐	☒
Tech. Dev. & App'l Report	☐	☒
Commercialization Potential	☐	☒
Innovations Data Base	☐	☒

SCHEDULE		N/A
Gantt Chart		
Tasks	☒	
Milestones	☒	☐
Deliverables	☒	☐
Resources	☒	
Resource Requirements		
Engineering Support		
Technical Writing	☐	☒
Editing	☒	☐
Word Processing	☐	☒
Graphics/Illustrations	☐	☒
Drafting	☐	☒
Web Page Design	☐	☒
Web-Based Database Dev.	☐	☒
Project Photography	☐	☒
Video/Audio	☐	☒
3D Animation/Modeling	☐	☒
CD-ROM	☐	☒
Technical Services		
Welding	☐	☒
Machine Shop	☐	☒
Cable Shop	☐	☒
Pneumatic	☐	☒
Instrum./Data Acquisition	☐	☒
Safety Engineering	☐	☒
Quality Inspection	☐	☒
Reliability Engineering	☐	☒
Environmental Engineering	☐	☒
Project Administrator	☒	☐
Supervisor	☒	☐
Matrixed Personnel	☐	☒
IT Security Plan (Sys. Adm.)	☐	☒

COST SHEET

Subcontractor Concurrance		
Swales	☐	☒
Sierra Lobo	☐	☒
UCF/SRTI	☐	☒

Overtime Planned ☐ ☒

PLAN PACKAGE

Checklist	☒
Plan	☒
Cost Sheet	☒
Schedule	☒
NASA TOM Tech.Eval Sheet	☒

TASK ORDER 00389 CY7 Rev B
Government Position

Cost Element	CY4			CY5			CY6			CY7 Baseline			TOTAL
Direct Labor	RATE	HRS	COST	RATE	HRS	COST	RATE	HRS	COST	RATE	HRS	COST	
Administrative Assistant V													
Configuration Management Analyst													
Director													
Electrical Engineer III													
Electrical Engineer IV													
Electrical Engineer V													
Engineer III													
Engineer IV													
Engineer V													
Engineering Aide III													
Engineering Designer III													
Engineering Designer IV													
IT Security Administrator													
IT Security Administrator I													
IT Security Administrator II													
IT Security Administrator IV													
Manager													
Network Administrator													
Network Administrator IV													
Network Engineer IV													
Principal Investigator													
Project Administrator I													
Project Administrator II													
Project Administrator III													
Project Manager													
Project Manager III													
Project Manager IV													
Software Engineer II													
Software Engineer III													
Software Engineer IV													
Software Engineer V													
Subject Matter Expert													
Supervisor													
Technical Editor III													
Total AS/RC Labor													
Total Subcontract Labor													
TOTAL LABOR													
M&A													
Total Labor													
Other Direct Costs													
Subtotal													
Subcontract G&A													
ODC G&A													
Subtotal G&A													
Total Estimated Cost													
Adjusted Target Cost (less ODC)													
Award Fee													
Incentive Fee													
Total Est Cost & Fee			***$187,844***			***$ 1,802,194***			***$ 5,382,562***			***$ 7,291,295***	***$ 14,463,885***

Figures may differ from task order summary due to rounding.

University-affiliated Spaceport Technology Development Contract (USTDC)
Combination Pre-Negotiation/Price Negotiation Memorandum

Title – Command, Control and Communication (CCC) Development

Purpose and Description of Task Order
The purpose of this task order is to provide technical expertise in the fields of software and hardware development, configuration management, and Command, Control & Communications (CCC) design tasks, augmenting the NASA KSC capability for all CCC Constellation Program requirements at KSC. **The purpose of this Revision is to increase planned labor due o additional support requirements for Task 3.4. This Revision also adjusts labor categories to reflect current skill requirements.**

The period of performance for this Task Order will be from July 07, 2006 through September 30, 2009.

The Task Order Plan and ASRC's final cost proposal is the product of a series of requirements definition meetings undertaken between the contractor and the Government to arrive at a fair and reasonable technical approach, skill mix, necessary ODC's, and the associated costs. This memorandum details the resultant task order value.

Participants
Contracting Officer – Joyce McDowell/OP-ES
NASA Task Order Manager – Gregory Clements/NE-C
COTR – Meredith Chandler/NE-I2
USTDC Lead – G. Prevost
USTDC TOM – P. Gamble

Status of Contractor Systems
ASRC's Accounting system has been determined to be adequate for the accumulation, reporting and billing of costs under government contracts. (Reference DCAA Audit Report No. 6311-2005D17740010, dated March 30, 2005.) The Billing system has also been determined to be adequate for billing costs accumulated under government contracts. (Reference DCAA Audit Report No. 6311-2005D17740011, dated April 6, 2005.) A Purchasing system review was performed by NASA/KSC and determined ASRC's purchasing policies and practices to be adequate for protecting the Government's interest. (Reference Contractor Purchasing System Review, dated August 27, 2008).

Certificate of Current Cost or Pricing Data
A certificate of current cost or pricing data is not required at this dollar value.

Cost Elements

Labor
The total adjusted target labor cost of the work associated with the subject task order is increased by for a total revised task order value of The labor classifications and rates proposed by ASRC are in compliance with contract clause B.6, Task Order Pricing. The NASA Task Order Manager (TOM) has reviewed ASRC's task order plan and found the proposed labor hours and skill mix appropriate and reasonable to facilitate successful completion of the subject TO as evidenced by his signature on the Task Order Plan as well as the attached Technical Evaluation dated June 10, 2009.

Other Direct Costs (ODC's)
ASRC has not proposed any additional ODC's and therefore, the total value of ODC's remains unchanged at . The NASA Task Order Manager (TOM) has reviewed ASRC's proposed ODC's and found them acceptable and reasonable as evidenced by the attached Technical Evaluation.

Fee
The total fee is calculated in accordance with that negotiated at the time of contract award and established in contract clause B.2, Contract Value, Award Fee, and Incentive Fee.

Other Data
The Resource Management Office (RMO) has verified that funds in the amount of $14,013,466 are available to perform this work. Additional funds will be added at a later date. If additional funds are not available, the scope of the work will be reduced. The period of performance is from July 07, 2006 through September 30, 2009.

Summary
Based on the above, the Contracting Officer has determined that the proposed increase in the estimated cost and fee of $436,957 for the subject transition revision is fair and reasonable and finds it in the best interest of the Government to issue Task Order 00369 CY7 Rev B in the total Cost Plus Award/Incentive Fee amount of $14,463,885.

Joyce C. McDowell
Contracting Officer

4/17/09
Date

Enclosures\
Government Negotiation Position
Technical Evaluation
Task Order Plan

NAS10-03006: USTDC TECHNICAL EVALUATION FORM

(Use of this form is mandatory for all Task Order changes)

WHEN A BASIS OF DETERMINATION BLOCK IS CHECKED, FILL INS ARE REQUIRED.

PROJECT TITLE **Command, Control, and Communication (CCC) Development**		Task Order No.: 369	
Technical Evaluator's Statement: I have reviewed the referenced Task Order Plan to confirm the Contractor's understanding of the scope of work and to ascertain the reasonableness of the kinds and quantities of resources proposed to accomplish that work. My findings and the rationale for them are provided below.		Revision: B	Task Order Plan Revision: B

1. JOINT DEVELOPMENT OF TECHNICAL REQUIREMENTS

Prior to meeting with the contractor to develop the detailed technical requirements of this task, the NASA Task Order Manager (TOM) estimated the total cost of the work to be: $725k.

On 6/10/09 NASA and the contractor met to jointly developed the technical requirements of this task order plan.

Discussion with the contractor during the technical requirement definition meeting(s) and application of the rates required by the basic contract, resulted in a total estimated cost of: $717k.

Difference (if any) between the original Government estimate and the results of the technical requirement definition meeting is due the following general factors:

Δ in calculation of labor hours required.

2. ADEQUACY OF THE CONTRACTOR'S UNDERSTANDING OF THE STATEMENT OF WORK (SOW):

STATEMENT OF WORK:

The contractor's description of the work to be performed, methods of accomplishment, schedules and/or plan of execution (X) **are** ( ) **are not** consistent with the intent of the Task Order and reflect a reasonable basis to proceed.

3. ADEQUACY OF LABOR RESOURCE REQUIREMENTS:

ASSESSMENT OF LABOR HOURS:

The kinds, quantities and distribution of labor hours proposed (including those of subcontractors, university affiliates, and/or the use of overtime, if proposed) (X) **are** ( ) **are not** considered appropriate and reasonable to accomplish the scope of work. The basis for this determination is:

[X] Previous experience with task order number 369 from CY 6. The hours and skill mix are consistent with the actuals experienced on this successfully completed task.

☐ Previous experience with the work performed on contract number _____. The work successfully performed on this past contract was similar in nature and scope to the work being considered on this task.

☐ Engineering judgment gained from ___ years working on similar projects.

☐ Government engineering breakdown/analysis of all elements. (Attached)

☐ Comparison with independent Government estimate. (Attached. Include an explanation of Inconsistencies between the Government Estimate and the final Task Order Plan)

☐ Other basis:

4. ASSESSMENT OF OTHER DIRECT COSTS (ODC):

a. MATERIAL and OTHER SUBCONTRACT COST:
The kinds and quantities of materials, equipment, and/or other subcontracts (including consultants, temporary services, etc.) **( ) are ( ) are not (X) N/A** not considered appropriate and reasonable to accomplish the scope of work. The basis for this determination is:

☐ Previous experience with task order number _____ from CY__. The hours and skill mix are consistent with the actuals experienced on this successfully completed task.

☐ Previous experience with the work performed on contract number _____. The work successfully performed on this past contract was similar in nature and scope the work being considered on this task.

☐ Engineering judgment gained from ___ years working on similar projects.

☐ Government engineering breakdown/analysis of all elements. (Attached)

☐ Comparison with independent Government estimate. (Attached. Include an explanation of Inconsistencies between the Government Estimate and the final Task Order Plan)

☐ Other basis:

b. TRAVEL:
The contractor's proposed use of travel **( ) is ( ) is not (X) N/A** regarding the number and nature of trips and travelers, destinations and duration of stays. The basis for this determination is:

☐ Previous experience with task order number _____ from CY__. The hours and skill mix are consistent with the actuals experienced on this successfully completed task.

☐ Previous experience with the work performed on contract number _____. The work successfully performed on this past contract was similar in nature and scope the work being considered on this task.

☐ Engineering judgment gained from ___ years working on similar projects.

☐ Government engineering breakdown/analysis of all elements. (Attached)

☐ Comparison with independent Government estimate. (Attached. Include an explanation of Inconsistencies between the Government Estimate and the final Task Order Plan)

☐ Other basis:

5. ANY OTHER COMMENTS (SCHEDULES, ETC):

NAS10-03006: USTDC TECHNICAL EVALUATION FORM

(Use of this form is mandatory for all Task Order changes)

WHEN A BASIS OF DETERMINATION BLOCK IS CHECKED, FILL INS ARE REQUIRED.

NASA Task Order Manager: Gregory Clements	6/10/09
Signed: Gregory R Clements	**Date:** 6/10/09