

Task Order Plan (TOP)

Contract Number: NNM05AB50C
TO Title: ES42 Electrical Integration Support
TO Number: 37-040203 **Revision:** 07

Period of Performance: 10/02/2010 to 09/30/2011

MSFC Initiator: Jeff Wesley

(b)(4)

Emergency: No

Revision -07: The purpose of this revision is to extend this task into Contract Year 6 of the NNM05AB50C ESTS contract. This revision defines and estimates work for the period October 2, 2010 through September 30, 2011. Additionally, the Schedule, Performance Plan and Risk Assessment have been revised to reflect changes in task activities for the new period of performance.

This revision affects the following Science Programs and Projects:

- HarnessMaster Software (subelement 02)

Task Order Subelement Mapping:

Subelement	WBS	Program/Project
-02	ES42 Institutional	Evaluation of HarnessMaster Software

Revision -06: The purpose of this revision is to adjust the task order estimate as follows:

Subelement	Description
02	Reduced the estimate by (b)(4) hours due to reduction of remaining scope to minor periodic updates.
CF	Added this subelement to provide electrical integration support for Ares I First Stage.
CS	Added this subelement to provide electrical integration support for the Software Development Facility (SDF), Software Integration Laboratory (SIL) and Software Integration Test Facility (SITF). This estimate is primarily for SDF support since the support requirements for SIL and SITF are not fully defined.
CU	Increased labor estimate by (b)(4) hours to add the support of a (b)(4) (b)(4) based on additional scope of support requested by the ES42 customer.

CV	This revision adjusted the hours due to re-defined scope, reduced by (b)(4) hours, for the switching of a VI resource to the Upper Stage task and a VI resource to the SDF/SIL/SITF task. In addition, a new resource was added to replace the resource switched to Upper Stage.
N/A	(b)(4)

This revision affects the following APO elements:

- First Stage (subelement CF)
- Vehicle Integration - SDF/SIL/SITF (subelement CS)
- Upper Stage (subelement CU)
- Vehicle Integration (subelement CV)

This revision affects the following Science Programs and Projects:

- HarnessMaster Software (subelement 02)

Task Order Subelement Mapping:

Subelement	WBS	Program/Project
-02	ES42 Institutional	Evaluation of HarnessMaster Software
-CF	136905.08.01.03	Electrical Integration Support for First Stage
-CS	136905.02.06.08.06	Electrical Integration support for VI SDF/SIL/SITF
-CU	136905.08.05.08.06.08	Electrical Integration Support for Upper Stage
-CV	136905.02.06.08.02	Electrical Integration Support for Vehicle Integration

Revision -05: The purpose of this revision is to extend this task into Contract Year 5 of the NNM05AB50C ESTS contract. This revision defines and estimates work for the period October 3, 2009 through October 14, 2010. Additionally, the Schedule, Performance Plan and Risk Assessment have been revised to reflect changes in task activities for the new period of performance.

This revision affects the following APO elements:

- Upper Stage (subelement CU)
- Vehicle Integration (subelement CV)

This revision affects the following Science Programs and Projects:

- HarnessMaster Software (subelement 02)

Task Order Subelement Mapping:

Subelement	WBS	Program/Project
-02	ES42 Institutional	Evaluation of HarnessMaster Software
-CU	136905.08.05.08.06.08	Electrical Integration Support for Upper Stage
-CV	136905.02.06.08.02	Electrical Integration Support for Vehicle Integration

Revision -04: The purpose of this revision is to adjust the task order estimate as follows:
 Subelement 02: This is a new subelement to add evaluation of the HarnessMaster Software to the task scope. (b)(4) of subcontractor support and (b)(4) hours (b)(4) of labor support has been estimated for this subelement for a total of (b)(4)
 Subelement CU: Added (b)(4) to this subelement for training.
 Subelement CV: Changed this subelement to reduce the planned level of direct labor support by (b)(4) and to increase the level of subcontractor support by (b)(4)
 Also, added (b)(4) to this subelement for training.

This revision affects the following APO elements:

- Upper Stage (subelement CU)
- Vehicle Integration (subelement CV)

This revision affects the following Science Programs and Projects:

- HarnessMaster Software (subelement 02)

Task Order Subelement Mapping:

Subelement	WBS	Program/Project
-02	ES42 Institutional	Evaluation of HarnessMaster Software
CU (Was CA prior to Revision 02)	136905.08.05.08.06.08	Electrical Integration Support for Upper Stage
CV (Was CF prior to Revision 02)	136905.02.06.08.02	Electrical Integration Support for Vehicle Integration

Revision -03: The purpose of this revision is for additional EI support to the Upper Stage (US) EI Subelement (-CU) for the ARES Ground Heater and Control System Contract End Item (CEI) Specification. This support will add (b)(4) of subcontractor support to the -CU subelement. In addition, the estimated hours for Subelements -CU has been reduced by (b)(4) hours and for Subelement -CV has been reduced by (b)(4) hours for an adjustment of allocated resources that were not originally planned for. Also, added (b)(4) of subcontractor support to the -CV subelement for EI Vehicle Integration support. Modified Section 1.0 to add the ARES Ground Heater and Control System Contract End Item (CEI) Specification support and revised Section 5.0 to add Subcontractor support.

This revision affects the following APO elements:

- Upper Stage (subelement CU)
- Vehicle Integration (subelement CV)

Task Order Subelement Mapping:

Subelement	WBS	Program/Project
CU (Was CA prior to Revision 02)	136905.08.05.08.06.08	Electrical Integration Support for Upper Stage
CV (Was CF prior to Revision 02)	136905.02.06.08.02	Electrical Integration Support for Vehicle Integration

Revision -02: The purpose of this revision is to extend this task into Contract Year 4 of the NNM05AB50C ESTS contract. This revision defines and estimates work for the period September 27, 2008 through October 2, 2009. Additionally, the Schedule, Performance Plan and Risk Assessment have been revised to reflect changes in task activities for the new period of performance. This revision deleted subelements -01 and -CU, as the work associated with these subelements has been completed. Also, subelement -CA has been renamed to Subelement -CU and Subelement -CF has been renamed to Subelement -CU to follow the normal naming of CLV tasks.

This revision affects the following APO elements:

- Upper Stage (subelement CU)
- Vehicle Integration (subelement CV)

Task Order Subelement Mapping:

Subelement	WBS	Program/Project
CU (Was CA prior to Revision 02)	136905.08.05.08.06.08	Electrical Integration Support for Upper Stage
CV (Was CF prior to Revision 02)	136905.02.06.08.02	Electrical Integration Support for Vehicle Integration

Revision -01: The purpose of this revision is to adjust the resources to align the task for the current support.

Subelement -01: This change in planned support resulted in an increase of (b)(4) hours and an increase of (b)(4) to the planned cost for the work.

Subelement -CA: This change in planned support resulted in a decrease of (b)(4) hours and a reduction of (b)(4) to the planned cost for the work. There was a Labor Category change (b)(4) for a resource on this subelement.

Subelement -CF: This change in planned support resulted in a decrease of (b)(4) hours and a reduction of (b)(4) to the planned cost for the work.

The changes in planned support resulted in a (b)(4) decrease to the planned cost for this Task Order.

Sub-element Mapping and WBS funding

New Subelement	Previous TO	WBS
CA	32-040201-CA	136905.08.05.08.06.08
CF	32-020401-CF	136905.02.06.08.02
CU	31-020403-CU	136905.08.05.08.09.08
01	31-020403-01	769347.05.08.17.01.01 825080.04.06.01.11.07

Revision -00: This Task Order (TO) is a continuation of work being performed on TO 32-020401 and TO 31-020403 of the NNM05AB50C ESTS contract. This TO realigns work performed previously in EV24 and EI24, and now supports ES42 within the new ED organizational structure. This TO defines and estimates work for the period 1 March 2008 through 26 September 2008. For Subcontracted efforts, this TO authorizes work for the same period. TO 32-020401 and TO 31-020403 will be revised for closure in March with an effective date of 29 February 2008.

1.0 Task Order Description & Objectives

This Task Order provides electrical integration engineering support to the ES42 E3 & Electrical Integration Branch of the Space Systems Department in the Engineering Directorate. The electrical integration support provided encompasses electrical integration and interfaces, power distribution, grounding and Electrical Ground Support Equipment (EGSE). System engineering support will be provided in the areas of requirements development, implementation and verification. System and sub-system engineering support will be provided in design, development and test support. Wire harness design, development and analysis will be provided for in-house hardware. Insight will be provided for procured EGSE and for procured electrical and avionics hardware integrated by MSFC.

Subelement -02: Electrical Integration Support for Evaluation of HarnessMaster Software

This subelement provides software engineering support for the Evaluation of HarnessMaster Software used by the ES42 Electrical Integration team. The support provided is for HarnessMaster software modifications to correct deficiencies in the existing code. Also, for the improvements to aid in the creation of Cable Interconnect Diagrams, System Schematics, cable harness drawings, and other drawings as required.

Subelement –CF: Electrical Integration Support for CLV First Stage

This subelement was administratively closed on July 3, 2010.

Subelement –CS: Electrical Integration Support for CLV (Vehicle Integration- SDF/SIL/SITF)

This subelement was administratively closed on July 3, 2010.

Subelement –CU: Electrical Integration Support for CLV Upper Stage

This subelement was closed on July 3, 2010 and is being transferred to Task Order 37-000001-CH.

Subelement –CV: Electrical Integration Support for CLV (Vehicle Integration)

This subelement was closed on July 3, 2010 and is being transferred to Task Order 37-000001-CI.

2.0 Technical Approach (Including required input, guidelines & assumptions)

The ESTS Group will perform the work described above using standard office automation software including Microsoft Project, Excel, Power Point Visio and Word. The Internet will be used to obtain NASA standards, military standards, and contractor documents as appropriate.

The ESTS Group will support avionics and project team meetings, project reviews, attend tests, and Technical Interchange Meetings (TIMs) as necessary to fulfill the responsibilities of this task. The ESTS Group will also travel as necessary to vendors and subcontractors to provide the support described in this Task Order.

For subelements CF, CS, CU and CV, the ESTS Group will provide technical evaluations of CLV documentation for adequate definition of the avionics system requirements, provide inputs to CLV Avionics documentation, provide book management support as necessary, provide inputs to trade studies for the avionics system hardware and software, and apply lessons learned from previous avionics development experience in justification of requirements additions and changes.

3.0 Discussion of Skills Required

Subelement – 02: Engineering support personnel performing this subelement must be proficient with the software tools listed above. (b)(4)

(b)(4)

Subelement – CF: Engineering support personnel performing this subelement must be proficient with the software tools listed above. (b)(4)

(b)(4)

Subelement – CS: Engineering support personnel performing this subelement must be proficient with the software tools listed above. (b)(4)

(b)(4)

Subelement – CU: Engineering support personnel performing this subelement must be proficient with the software tools listed above. (b)(4)

(b)(4)

Drafting support personnel performing this subelement must be proficient with the software tools listed above. Personnel must have a minimum of a high school diploma and an understanding of the responsibilities of electrical integration documentation and drawing standards.

Subelement – CV: Engineering support personnel performing this subelement must be proficient with the software tools listed above. (b)(4)

(b)(4)

Drafting support personnel performing this subelement must be proficient with the software tools listed above. (b)(4)

(b)(4)

4.0 Special Tools Required

Microsoft Visio is needed to support this task.

5.0 Participating Subcontractors

None Identified.

6.0 Milestones & Deliverables

Deliverables for this task are: Monthly Activity Reports (MAR), trip/travel reports where major activities significant to this task were performed, presentation charts given by personnel supporting this subelement, document evaluations with significant programmatic impact (this includes Review Item Discrepancies prepared, CLV avionics hardware & software documentation, etc.). All deliverables will be accomplished per the schedule negotiated with ES42.

7.0 Special Considerations (Recruiting, Special Equipment / Material, Safety, etc.)

Some domestic travel is possible for subelements -02, but no travel is identified at this time or included in this estimate. If travel is required this Task Order Plan will be revised.

8.0 Work Shelf

The following activities could be accomplished as part of the Task Order performance by personnel that are temporarily available due to program or funding delays on other Tasks. Specific assignments will be coordinated with the Task Initiator to ensure appropriate skills and experience.

TO/Subelement	Description	Due Date	Skill
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9.0 Schedule

Task Order	s/e	Task Work Element	2010				2011										
			Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
37-040203	00	Electrical Integration (EI) Support to ES42															
37-040203	02	Avionics System Support for the Evaluation of HarnessMaster Software															
37-040203	00	Monthly Activity Report															

ESTS Contract Task Order Request Performance Plan

Task Order Title: [ES42 Electrical Integration Support](#)

Task Order Number: [37-040203](#) Revision: 07

Category	Weighting Technical %	End of Period Technical Score
<p>Technical Objectives</p>	<p>65%</p>	<p>X <u>65%</u> = Justification</p>
<ul style="list-style-type: none"> - Support the CLV Avionics Team. - Support NASA and contractor led meetings/teleconferences. - Input to, review, comment on, and prepare RIDs as necessary, during review cycles on project documentation. - Respond to Action Items assigned to this Task Order. - Provide input to, and support for, trades and analyses. - Provide technical status to the NASA Task Initiator and Work Package Managers. - Provide electrical integration support in accordance with MSFC procedures - Identify circuit protection requirements and implement design solutions. - Provide and review verification documentation. 		
<p>Schedule Objectives (Milestones)</p>	<p>Weighting Schedule % <u>10%</u> (min 10%)</p>	<p>Schedule Score X <u>10%</u> = Justification</p>
<p>Monthly Activity Reports (MAR). All other milestones are accomplished as negotiated with ES42.</p>		
<p><u>Cost (actual vs. negotiated)</u></p>	<p>Weighting Cost % <u>25%</u> (min.25%)</p>	<p>Cost Score X <u>25%</u> = Justification</p>

ESTS Contract Task Order Request Performance Plan

Task Order Title: [ES42 Electrical Integration Support](#)

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Weighting	Total Score
Total %	
100.00%	

Technical, Schedule, and Cost Grading Scale

Score	Description
9.0-10.0	Exceeded TO Performance Plan objectives resulting in major benefit(s)
8.0-8.9	Exceeded TO Performance Plan objectives resulting in modest benefit(s)
7.0-7.9	Met TO Performance Plan objectives
3.0-6.9	Did not meet all TO Performance Plan objectives resulting in minimal impact or requiring additional agency funds
0.0-2.9	Did not meet TO Performance Plan objectives resulting in substantial impact and/or requiring additional agency funds

ESTS Contract Task Order Request Performance Plan

Task Order Number: [ES42 Electrical Integration Support](#)

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Comments:

Risk Assessment

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Period of Performance: 10/02/2010 to 09/30/2011

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(b)(4)

Task Order Risk Assessment to Cost, Technical, and Schedule

List identified risk associated with Task Order performance as related to task cost, technical, and schedule. Classify the risk(s) according to probability of occurrence and impact as defined below and enter the risk into risk matrix.

Risk	Risk Type	Probability (1-4)	Impact (1-4)	Risk Description
Risk C1	Cost			No cost risks have been identified for this Task Order.
Risk C2	Cost			
Risk T1	Technical			No technical risks have been identified for this Task Order.
Risk T2	Technical			
Risk S1	Schedule			No schedule risks have been identified for this Task Order.
Risk S2	Schedule			

*Note: See page 2 for risk mitigation plan for those risks which are Primary Risk Drivers.



