Marshall Space Flight Center
Engineering, Science & Technical Services

Task Order Plan (TOP)

Contract Number: *NNM05AB50C*
TO Title: *Electromagnetic Environmental Effects (E3)*
TO Number: *37-040201* **Revision:** *07*

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

MSFC Initiator: *Mark Krome*

(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 programs listed in the table below:

Subelement	Previous Subelement	WBS	Program/Project
JA	01	401769.06.03.07.04.04	International Space Station (ISS)
JB	04	825080.05.06.01	ISS - Microgravity Science Glovebox
SA	05	197009.10.02.01.01 197009.10.01.01.05 197009.10.01.01.10	Shuttle - PSE&I
SB	06	522632.08.01.01 510505.04.08.01.08	Shuttle - Solid Rocket Booster
SC	09	524238.08.01.01.03	Shuttle – External Tank

The subelements have been renamed to conform to the project/program naming convention that has been established for FY11.

General	In Section 1.0 and Section 3.0, deleted the reference to “Spacecraft Charging Analysis” from the list of disciplines areas addressed in this TO. Spacecraft Charging is a capability that is no longer covered under this TO.

Revision -06: 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:

- Constellation Level II (subelement CA)
- First Stage (subelement CF)
- Upper Stage Engine (subelement CJ)
- Upper Stage (subelement CU)
- Vehicle Integration (subelement CV)
- Vehicle Integration Lightning (subelement CL)

This revision affects the following Science Programs and Projects:

- International Space Station (subelement 01)
- MSG (subelement 04)
- PSE&I Shuttle (subelement 05)
- SRB Shuttle (subelement 06)
- ET Shuttle (subelement 09)

Task Order Subelement Mapping:

Subelement	Program/Project
01	International Space Station (ISS)
04	ISS - Microgravity Science Glovebox
05	PSE&I Shuttle
06	Shuttle - Solid Rocket Booster
09	Shuttle – External Tank
CA	Constellation Ares Level II
CF	Crew Launch Vehicle Ares First Stage
CJ	Crew Launch Vehicle Ares Upper Stage Engine
CU	Crew Launch Vehicle Ares Upper Stage
CV	Crew Launch Vehicle Ares Vehicle Integration
CL	Crew Launch Vehicle Ares Vehicle Integration Lightning Testing

Subelement	WBS
01	401769.06.03.07.04.04
04	825080.05.06.01
05	197009.10.02.01.01 197009.10.01.01.05 197009.10.01.01.10
06	522632.08.01.01 510505.04.08.01.08
09	524238.08.01.01.03
CA	604746.02.06.06.08 604749.02.22.03.01.01.08
CF	136905.08.01.03
CJ	136905.08.04.01.08.07
CU	136905.08.05.08.01.08
CV	136905.02.06.08.05
CL	136905.02.06.08.05

Revision -05: The purpose of this revision is to adjust the task order estimate as follows:

Subelement -01: Reduced the estimated labor costs for this subelement by (b)(4) hours due to the work being accomplished with less support than estimated. Increased the estimate for travel by (b)(4)

Subelement –04: Reduced the estimated labor costs for this subelement by (b)(hours due to the work being accomplished with less support than estimated.

Subelement –05: Reduced the estimated ODC for this subelement by (b)(4) due to the procurement activity being delayed until FY10.

Subelement -09: Reduced the estimated labor costs for this subelement by (b)(hours due to the work being accomplished with less support than estimated.

Subelement –CA: Reduced the estimated labor costs for this subelement by (b)(4) hours due to the work being accomplished with less support than estimated. Reduced the estimated subcontractor costs for this subelement by (b)(4) due to the testing support being rescheduled to FY10.

Subelement -CL: Reduced the estimated subcontractor costs for this subelement by (b)(4) due to a rescheduling of the required testing to FY10.

This revision affects the following Science Programs and Projects:

- International Space Station (ISS) (subelement 01)
- ISS - Microgravity Science Glovebox (subelement 04)
- PSE&I Shuttle (subelement 05)
- Shuttle – External Tank (subelement 09)

This revision affects the following APO elements:

- Constellation Ares Level II (subelement CA)
- Vehicle Integration Lightning (subelement CL)

Task Order Subelement Mapping:

Subelement	Program/Project
01	International Space Station (ISS)
02	ISS - Environmental Control and Life Support System
03	ISS - Materials Science Research Rack
04	ISS - Microgravity Science Glovebox
05	PSE&I Shuttle
06	Shuttle - Solid Rocket Booster
09	Shuttle – External Tank
10	Commercial Orbital Transportation Service (COTS)
CA	Constellation Ares Level II
CF	Crew Launch Vehicle Ares First Stage
CJ	Crew Launch Vehicle Ares Upper Stage Engine
CU	Crew Launch Vehicle Ares Upper Stage
CV	Crew Launch Vehicle Ares Vehicle Integration

CL	Crew Launch Vehicle Ares Vehicle Integration Lightning Testing

Subelement	WBS
01	401769.06.03.07.04.04
04	825080.05.06.01
05	197009.10.02.01.01 197009.10.01.01.05 197009.10.01.01.10
06	522632.08.01.01 510505.04.08.01.08
09	524238.08.01.01.03
10	953565.01.27.01
CA	604746.02.06.06.08 604749.02.22.03.01.01.08
CF	136905.08.01.03
CJ	136905.08.04.01.08.07
CU	136905.08.05.08.01.08
CV	136905.02.06.08.05
CL	136905.02.06.08.05

Revision -04: The purpose of this revision is to adjust the task order estimate as follows:

Subelement -05: Reduced the estimated ODC for this subelement by (b)(4) due to a reduction in planned training.

Subelement –CL: Increased the estimated Subcontract support by (b)(4) for additional testing.

Subelement –CV: Decreased the estimated Subcontract support on this subelement by (b)(4) (the amount added to Subelement –CL).

This revision affects the following Science Programs and Projects:

- PSE&I Shuttle (subelement 05)

This revision affects the following APO elements:

- Vehicle Integration (subelement CV)
- Vehicle Integration Lightning (subelement CL)

Task Order Subelement Mapping:

Subelement	Program/Project
01	International Space Station (ISS)
02	ISS - Environmental Control and Life Support System
03	ISS - Materials Science Research Rack
04	ISS - Microgravity Science Glovebox
05	PSE&I Shuttle
06	Shuttle - Solid Rocket Booster
09	Shuttle – External Tank
10	Commercial Orbital Transportation Service (COTS)

CA	Constellation Ares Level II
CF	Crew Launch Vehicle Ares First Stage
CJ	Crew Launch Vehicle Ares Upper Stage Engine
CU	Crew Launch Vehicle Ares Upper Stage
CV	Crew Launch Vehicle Ares Vehicle Integration
CL	Crew Launch Vehicle Ares Vehicle Integration Lightning Testing

Subelement	WBS
01	401769.06.03.07.04.04
04	825080.05.06.01
05	197009.10.02.01.01 197009.10.01.01.05 197009.10.01.01.10
06	522632.08.01.01 510505.04.08.01.08
09	524238.08.01.01.03
10	953565.01.27.01
CA	604746.02.06.06.08 604749.02.22.03.01.01.08
CF	136905.08.01.03
CJ	136905.08.04.01.08.07
CU	136905.08.05.08.01.08
CV	136905.02.06.08.05
CL	136905.02.06.08.05

Revision -03: The purpose of this revision is to add a new subelement (-10) for E3 support to the Commercial Orbital Transportation Service (COTS) project. This support will entail (b)(hours of sub-contractor support and (b)(hours of labor support for an addition of (b)(4) In addition, the estimated hours for Subelements -01 has been reduced by (b)(4) and for Subelement -05 has been reduced by (b)(4) for an adjustment of allocated resources that was not originally planned for.

This revision does not affect the APO elements.

This revision affects the following Science Programs and Projects:

- International Space Station (subelement 01)
- PSE&I Shuttle (subelement 05)
- Commercial Orbital Transportation Service (subelement 10)

Task Order Subelement Mapping:

Subelement	Program/Project
01	International Space Station (ISS)
02	ISS - Environmental Control and Life Support System
03	ISS - Materials Science Research Rack
04	ISS - Microgravity Science Glovebox
05	PSE&I Shuttle
06	Shuttle - Solid Rocket Booster

09	Shuttle – External Tank
10	Commercial Orbital Transportation Service (COTS)
CA	Constellation Ares Level II
CF	Crew Launch Vehicle Ares First Stage
CJ	Crew Launch Vehicle Ares Upper Stage Engine
CU	Crew Launch Vehicle Ares Upper Stage
CV	Crew Launch Vehicle Ares Vehicle Integration
CL	Crew Launch Vehicle Ares Vehicle Integration Lightning Testing

Subelement	WBS
01	401769.06.03.07.04.04
04	825080.05.06.01
05	197009.10.02.01.01 197009.10.01.01.05 197009.10.01.01.10
06	522632.08.01.01 510505.04.08.01.08
09	524238.08.01.01.03
10	953565.01.27.01
CA	604746.02.06.06.08 604749.02.22.03.01.01.08
CF	136905.08.01.03
CJ	136905.08.04.01.08.07
CU	136905.08.05.08.01.08
CV	136905.02.06.08.05
CL	136905.02.06.08.05

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 –02 and –03, as the work associated with these subelements has been completed. Also, subelement –CL has been added to perform Lightning Testing on the CLV vehicle.

This revision affects the following APO elements:

- Constellation Level II (subelement CA)
- First Stage (subelement CF)
- Upper Stage Engine (subelement CJ)
- Upper Stage (subelement CU)
- Vehicle Integration (subelement CV)
- Vehicle Integration Lightning (subelement CL)

This revision affects the following Science Programs and Projects:

- International Space Station (subelement 01)
- ECLSS (subelement 02)
- MSRR (subelement 03)
- MSG (subelement 04)
- PSE&I Shuttle (subelement 05)
- SRB Shuttle (subelement 06
- ET Shuttle (subelement 09)

Task Order Subelement Mapping:

Subelement	Program/Project
01	International Space Station
02	ISS - Environmental Control and Life Support System
03	ISS - Materials Science Research Rack
04	ISS - Microgravity Science Glovebox
05	PSE&I Shuttle
06	Shuttle - Solid Rocket Booster
09	Shuttle – External Tank
CA	Constellation Ares Level II
CF	Crew Launch Vehicle Ares First Stage
CJ	Crew Launch Vehicle Ares Upper Stage Engine
CU	Crew Launch Vehicle Ares Upper Stage
CV	Crew Launch Vehicle Ares Vehicle Integration
CL	Crew Launch Vehicle Ares Vehicle Integration Lightning Testing

Subelement	WBS
01	401769.06.03.07.04.04
04	825080.05.06.01
05	197009.10.02.01.01 197009.10.01.01.05 197009.10.01.01.10
06	522632.08.01.01 510505.04.08.01.08
09	524238.08.01.01.03
CA	604746.02.06.06.08 604749.02.22.03.01.01.08
CF	136905.08.01.03
CJ	136905.08.04.01.08.07
CU	136905.08.05.08.01.08
CV	136905.02.06.08.05
CL	136905.02.06.08.05

Revision –01: The purpose of this revision is to adjust the resources, subcontractors, training, and travel to align the task for the current support.

Subelement -01: This change in planned support resulted in a decrease of (b)(4) hours, an addition of (b)(4) for Training and an increase of Subcontractor dollars of (b)(4), for an increase of (b)(4) to the planned cost for the work.

Subelement -05: This change in planned support resulted in an addition of (b)(4) for Training for an increase of (b)(4) to the planned cost for the work.

Subelement -06: This change in planned support resulted in a decrease in Travel of (b)(4) for a decrease 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 decrease of Subcontractor dollars of (b)(4) for an overall reduction of (b)(4) to the planned cost for the work.

Subelement –CF: This change in planned support resulted in a decrease of (b)(4) hours, an addition of (b)(4) for Training, and a decrease in Travel of (b)(4) for an overall reduction of (b)(4) to the planned cost for the work.

Subelement –CJ: 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.

Subelement –CU: This change in planned support resulted in a decrease of (b)(4) hours and an addition of (b)(4) for Training, for an overall increase of (b)(4) to the planned cost for the work.

Subelement –CV: This change in planned support resulted in a decrease of (b)(4) hours, an addition of (b)(4) for Training, a decrease in Travel of (b)(4) and a decrease of Subcontractor dollars of for a overall 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.

New Subelement	Previous TO	WBS
01	31-020401-01	401769.06.03.07.04.04
02	31-020401-02	401769.06.03.03.02.07
03	31-020401-03	825080.04.06.01.07
04	31-020401-04	825080.05.06.01
05	31-020401-05	197009.10.02.01.01 197009.10.01.01.05 197009.10.01.01.10
06	31-020401-06	522632.08.01.01 510505.04.08.01.08
09	31-020401-09	524238.08.01.01.03
CA	31-020401-CA	604746.02.06.06.08 604749.02.22.03.01.01.08
CF	31-020401-CF	136905.08.01.03
CJ	31-020401-CJ	136905.08.04.01.08.07
CU	31-020401-CU	136905.08.05.08.01.08
CV	31-020401-CV	136905.02.06.08.05

Revision –00: This Task Order (TO) is the continuation of work being performed on TO 31-020401 of the NNM05AB50C ESTS contract. This TO realigns work performed previously in EI24, and now supports ES42 within the new ED organizational structure. This TO defines and estimates work for the period of 1 March 2008 through 26 September 2008. This Task Order added approximately (b)(4) for Shuttle Lightning testing on Subelement -05. For Subcontracted efforts, this TO authorizes work for the same period. TO 31-020401 will be revised for closure in March with an effective date of 29 February 2008.

1.0 Task Order Description & Objectives

The Jacobs ESTS Group will provide Electromagnetic Environmental Effects (E3) engineering support to the NASA MSFC E3 & Electrical Integration Branch (ES42) on this task. The function includes the following electromagnetic compatibility (b)(4) and electromagnetic interference (EMI) discipline areas:

- Electrical bonding
- Grounding
- Wire routing
- Lightning protection
- Electrostatic discharge analysis and mitigation
- EMI test services
- Computational electromagnetics
- Power quality analysis and testing

Activities in these discipline areas include requirements development and implementation, (b)(4) analysis, and design and test support.

Subelement Specific Objectives:

37-040201-02 ECLSS WRS/OGS
This Subelement provides E3 support to the Environmental Control and Life Support System (ECLSS) program including the Water Recovery System (WRS) and the Oxygen Generation System (OGS).
This subelement was closed in Revision 2.

37-040201-03 Materials Science Research Rack (MSRR)
This Subelement provides E3 support to the MSRR program.
This subelement was closed in Revision 2.

37-040201-10 Commercial Orbital Transportation Service (COTS)
This Subelement provides E3 support to the COTS project.
This subelement was closed in Revision 6.

37-040201-CA Constellation System Ares Level 2
This subelement was administratively closed on July 3, 2010.

37-040201-CF Ares First Stage
This subelement was administratively closed on July 3, 2010.

37-040201-CJ Ares Upper Stage Engine
This subelement was closed on July 3, 2010 and is being transferred to Task Order 37-000001-CJ.

37-040201-CL Ares Vehicle Integration Lightning Testing
This subelement was administratively closed on July 3, 2010.

37-040201-CU Ares Upper Stage
This subelement was closed on July 3, 2010 and is being transferred to Task Order 37-000001-CH.

37-040201-CV Ares Vehicle Integration
This subelement was closed on July 3, 2010 and is being transferred to Task Order 37-000001-CI.

37-040201-JA ISS (b)(4) Analysis
This Subelement provides E3 support to the International Space Station (ISS), including Nodes, attached payloads, and related systems. In addition to the general task duties described above, the Jacobs ESTS Group will provide support to the ISS (b)(4) lead and perform sustaining engineering (b)(4) Analysis. Analysis using the Integrated Space Station Electromagnetic Compatibility Analysis System (ISEAS) will be performed for ISS systems. This subelement was formerly -01 and was changed on Revision 7.

37-040201-JB Migrogravity Science Glovebox (MSG)
This Subelement provides E3 support to the MSG program. This subelement was formerly -04 and was changed on Revision 7.

37-040201-SA Space Shuttle Integration
This Subelement provides E3 support to the Space Shuttle Integration program. This subelement was formerly -05 and was changed on Revision 7.

37-040201-SB Solid Rocket Booster (SRB)
This Subelement provides E3 support to the SRB program. This subelement was formerly -06 and was changed on Revision 7.

37-040201-SC External Tank (ET)
This Subelement provides E3 support to the ET program. This subelement was formerly -09 and was changed on Revision 7.

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

1. Provide technical oversight to project designers by reviewing analysis, designs, test plans, and other documentation as required to identify and resolve (b)(4) issues. Identify the (b)(4) environment and develop approach for analysis, testing, and modeling.
2. Perform analysis to determine systems design, (b)(4) safety margins, and if design implementation meets (b)(4) specifications. Test requirements and specifications will also be formulated. Perform reviews of the (b)(4) related buy-off packages to assure that (b)(4) issues are adequately addressed.
3. Develop and implement an (b)(4) control plan to assure an orderly implementation of the requirements by analyzing and reviewing designs, testing specific equipment, and assisting design engineers in specific areas affecting (b)(4) Measurements of performance will be identified.
4. Provide support to the EME Panel. Distribute agendas to teleconference participants, participate in EME teleconferences, transcribe teleconference audiotapes, and distribute minutes to participants. Track action items for EME Panel identified during teleconferences. Maintain and update Electromagnetic Effects (EME) Library.
5. Support EMI development laboratory by building, maintaining, and operating EMI test circuits and equipment. Participate in (b)(4) laboratory testing and analysis. Provide computer programming support for E3 group activities.
6. Documentation will be provided in an (b)(4) Design Analysis Reports, Control Plans, test reports, reviews and simulations. Test Plans for each subsystem will be developed and implemented. After reviewing test reports, critical points for system monitoring or certification testing will be identified.
7. Provide overall project planning, including resource planning and management, master and detailed scheduling, cost estimating and planning, risk management, WBS development, day-to-day task planning, and reporting.

8. Provide technical recommendations for an effective lightning design approach for Constellation system vehicles, elements and components and launch support systems.
9. Provide technical recommendations for a thorough verification approach for lightning related requirements at the vehicles, elements, components and launch support levels.

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

The Jacobs ESTS Group will support meetings, teleconferences, Technical Interchange Meetings, (TIMs), etc., as required by ES42.

3.0 Discussion of Skills Required

Scientists or engineers with electrical engineering and/or physics skills with (b)(4) background including (b)(4) analysis required. Familiarity with MIL-STD-461/462, EMI test requirements and planning is required. E3 support also requires personnel with paraprofessional skills and a familiarity with computer systems.

4.0 Special Tools Required

None Identified.

5.0 Participating Subcontractors

(b)(4)

6.0 Milestones & Deliverables

Products include analysis and test reports, monthly activity reports, updates to ES42 monthly review charts, (b)(4) control plans, design analysis reports, lightning protection plans, Review Item Discrepancies, presentations, and technical papers where appropriate.

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

Some domestic travel is possible for subelements -JA, -JB, -SA, -SB and –SC, but no travel is identified at this time or included in this estimate. If travel is required this Task Order Plan will be revised.

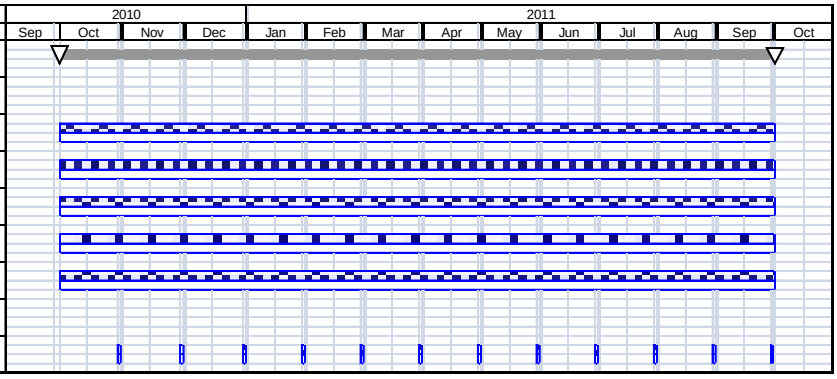
8.0 Work Shelf

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

9.0 Schedule

Task Order	s/e	Task Work Element
37-040201	00	**Electromagnetics Environments Effects (E3)**
37-040201	JA	ISS E3 Support
37-040201	JB	MSG E3 Support
37-040201	SA	SSI E3 Support
37-040201	SB	SRB E3 Support
37-040201	SC	ET E3 Support
37-040201	00	**Monthly Activity Report**



ESTS Contract Task Order Request Performance Plan

Task Order Title: Electromagnetic Environmental Effects (E3)

Task Order Number: 37-040201 Revision: 07

Category	Weighting Technical %	End of Period Technical Score
Technical Objectives	65%	X 65% =
		Justification
1) Requirement development and design analysis, assessments, and reviews are accurate and comprehensive (i.e. cover all relevant hardware and technical issues), and adhere to established program specifications. 2) Perform comprehensive analysis based on established engineering practices 3) Ensure programmatic and technical traceability of requirements, analysis, test, and verification activities		
	Weighting Schedule %	**Schedule Score**
Schedule Objectives (Milestones)	10% *(min 10%)*	X 10% =
		Justification
Deliver any products identified per the agreed-to schedule		
	Weighting Cost%	**Cost Score**
Cost (actual vs. negotiated)	25% *(min.25%)*	X 25% =
		Justification
	Weighting Total %	**Total Score**
	100.00%	

ESTS Contract Task Order Request Performance Plan

Task Order Title: Electromagnetic Environmental Effects (E3)

Task Order Number: 37-040201 Revision: 07

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: Electromagnetic Environmental Effects (E3)

Task Order Number: 37-040201 Revision: 07

Comments:

Marshall Space Flight Center
Engineering, Science & Technical Services

JACOBS
ESTS Group

Risk Assessment

Contract Number: *NNM05AB50C*
TO Title: *Electromagnetic Environmental Effects (E3)*
TO Number: *37-040201* **Revision:** *07*

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

MSFC Initiator: *Mark Krome*

(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.

Task Order Risk Matrix

		1 Minimal Impact	2 Minor Impact	3 Medium Impact	4 Major Impact
Inevitable Occurrence (>95% Probability)	4	Y	Y	R	R
High Probability of Occurrence (>60% but <95% Probability)	3	G	Y	Y	R
Medium Probability of Occurrence (>25% but <60% Probability)	2	G	Y	Y	Y
Low Probability of Occurrence (<25% Probability)	1	G	G	Y	Y

Legend

- R — **Primary Risk Driver:** Requires Risk Mitigation Plan
- Y — **Caution:** Requires status updates and general plan for risk reduction as determined necessary by Team Lead and Initiator
- G — **Watch:** No Action required

Impact Level	Cost Impact Definition	Technical Impact Definition	Schedule Impact Definition
(1) Minimal Impact	No significant cost impact	No significant technical impact	No significant schedule impact
(2) Minor Impact	Potential to recover cost	Potential to gain required technology without impact	Minor delay in deliverables but no impact to customer
(3) Medium Impact	>0 but <10% subtask cost overrun	Some technical impact but potential to recover	Delay in subtask deliverables but work arounds available and acceptable to customer
(4) Major Impact	>10% subtask cost overrun	Unable to meet technical requirements to perform subtask	Delay in subtask deliverables with impact to customer

Risk Mitigation Plan

Complete the following chart for those risks identified on page 1 as “Primary Risk Drivers”. The following chart will serve as the Risk Mitigation Plan.

Risk No.: Risk Description:		
Mitigation Step No.	Planned Completion Date	Mitigation Step Description