

Task Order Plan (TOP)

Contract Number: NNM05AB50C
TO Title: GBM GIOC Operations Support
TO Number: 43-050202 **Revision:** 08

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

MSFC Initiator: Dennis Gallagher

(b)(4)

Emergency: No

Revision 08: 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. Funding for this task is provided per WBS: 378710.05.02. 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 Program: Gamma Ray Burst Monitor (GBM) Ground Instrument Operations Center (GIOC).

Revision 07: Identifies the following adjustments to the task order estimate and work scope:

1. Change the designation of the MSFC Initiator from John Davis to Dennis Gallagher.
2. The other estimate was increased by (b)(4) for attendance at the Space Ops Conference.
3. Increase the Subelement: 00 overall labor estimate by (b)(4) to reflect the hours required to meet the customer's task objectives. This includes a reduction of (b)(4) in the (b)(4). This reflects the ability of the (b)(4) to assume some of the workload previously performed by the (b)(4).

Revision 06: The purpose of this revision (06) 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. Funding for this task is provided per WBS: 378710.05.02. 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 support to the Gamma Ray Burst Monitor (GBM) Ground Instrument Operations Center (GIOC).

Revision 05: Identifies the following adjustments to the task order estimate and work scope:

1. Describe the function of the GBM Software Configuration Control Board (SCCB) in Section 2.0.
2. Change the designation of the MSFC Initiator from Steve Elrod to John Davis.
3. Increase the Subelement: 00 labor estimate by (b)(4) to reflect the hours required to meet the customer's task objectives.

4. Update the Subelement: 00 other and travel estimate for the remainder of FY09 per the current task requirements. The other estimate was increased by (b)(4)
5. Increase the subcontract estimate on Subelement: 00 by (b)(4)

Revision 04: Decreases the labor hour estimate required to assist the GBM GIOC operations' task lead on Subelement: 00 by (b)(4) since the position was not filled until January 5, 2009. Also, revision (04) accounts for team lead staff recruiting activities on Sub-element: 00.

Revision 03: Increases the labor hour estimate to assist the task lead in the GBM GIOC operations support to Sub-element: 00. This additional support is required to meet the customer's task objectives. Also, the subcontract estimate has been increased to cover the team lead activities on Sub-element: 00.

Revision 02: The purpose of this revision (02) 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. Funding for this task is provided per WBS: 378710.05.02. Additionally, the Schedule, Performance Plan and Risk Assessment have been revised to reflect changes in task activities for the new period of performance.

Revision 01: Increases the labor hour estimate to reflect the overtime hours required to meet the customer's task objectives. The revision also accounts for other direct charges (ODC) required for task staff recruiting.

1.0 Task Order Description & Objectives

Sub-Element: 00 (GBM GIOC Operations)

Support is needed to operate and maintain the Gamma Ray Burst Monitor (GBM) Ground Instrument Operations Center (GIOC) and to ensure and enhance all the Fermi GBM Space Telescope science and command interfaces. This support also includes maintaining the GBM operations' databases and documentation and developing GBM operational software and data collection programs.

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

Sub-Element: 00 (GBM GIOC Operations)

In order to successfully complete this task the following technical approach will be taken:

- Oversee all GBM operations activities at the Ground Instrument Operations Center (GIOC, located at the NSSTC). This may entail serving as the chair person of the GBM SCCB. The SCCB approves and documents all software changes that are made to the flight and analysis software and designates those individuals responsible for the changes and upgrades. The SCCB a formalization of the processes and procedures that are being developed to accommodate the idiosyncrasies of the instrument, spacecraft and ground systems and to create a permanent record of all changes, modifications and upgrades.
- Coordinate GIOC inputs to the Fermi Space Telescope science timeline.
- Supervise GBM archival activities.
- Maintain the GBM Command & Telemetry database and provide updates to the Mission Operations Center (MOC, located at GSFC) as required.
- Maintain the GBM Procedures data base.
- Oversee GIOC real-time (on-orbit) science activities, to include preparation of GBM instrument commands. Prepare the scheduled (on-orbit) GBM instrument command timeline.

- Coordinate GBM-related operations activities with the Max Plank Institute (MPE/Germany).
- Oversee maintenance of the GBM Burst Alert Processor (BAP) at the NSSTC, and the backup BAP at GSFC.
- Review changes to GBM operations documents and provide inputs as required.
- Supervise GBM operations-related documentation, including documents, procedures and databases.
- Develop/maintain computer programs as needed for GBM operations

The technical approach needed to support the task lead:

- Cataloging the statistics from the GBM trigger data using software tools
- Maintaining the GBM internal web pages.
- Inspecting the mission operations center (MOC) displays and using software tools to determine occurrences of flight software (FSW) errors.
- Creating gamma ray burst (GRB) data plots and cataloging these for further analysis by the gamma ray scientists.
- Updating a log with any changes detected in the flight software parameters using software tools..
- Creating plots of flight software information.
- Updating the duty scientist spreadsheet for burst advocate (BA) duty assignments.
- Verifying that the contingency commands to reset GBM is current by testing against values obtained from the mission operations displays and data analysis software.
- Reprocessing data with new parameters.
- Interfacing daily with various internal customers/scientists in the GBM Instrument Operations Center (GIOC).
- Preparing GIOC conference room and equipment for morning status meetings.
- Creating and maintaining data products in accordance with internal standard operating procedures (SOPs). Performs all activities in strict compliance with mission SOPs.
- Working as part of a team to streamline processes.

3.0 Discussion of Skills Required

Sub-Element: 00 (GBM GIOC Operations)

Task lead requirements:

(b)(4)

- Experience with satellite instrument operations and/or data analysis.
- Familiarity with Unix/Linux operating systems.
- Proficient in Perl programming.
- Experience with Real-Time Executive for Multiprocessor Systems (RTEMS).
- Familiarity with Gamma Ray science.

Support to task lead requirements:

- (b)(4)
- (b)(4)
- Proficient in use of computer software such as Word, Excel, and Power Point etc. to efficiently complete assigned projects.
- Desired proficiency in programming languages such as C, C++, and IDL.
- Flexibility to learn new application software.

4.0 Special Tools Required

None identified.

5.0 Participating Subcontractors

(b)(4)

6.0 Milestones & Deliverables

Sub-Element: 00 (GBM GIOC Operations)

1. Weekly Absolute Time Sequences
2. Unscheduled real-time commands, (as needed)
3. Weekly Fermi Mission Planning meeting attendance
4. Conference papers, posters, and presentations, (as required)
5. Monthly Activity Reports

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

None identified.

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 #	Subelement	Task/Work Element	2011														
			Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
43-050202	--	GBM GIOC Operations Support	[Gantt bar spanning Sep to Oct]														
43-050202	00	GBM GIOC Operations	[Gantt bar spanning Sep to Oct]														
43-050202	--	Monthly Activity Reports	[Gantt bar spanning Sep to Oct]														

ESTS Contract Task Order Request Performance Plan

Task Order Title: [GBM GIOC Operations Support](#)

Task Order Number: [43-050202](#) Revision: 08

Category	Weighting Technical %	End of Period Technical Score
Technical Objectives	65%	X 65% =
Operate and maintain the GBM Ground Instrument Operations Center in a professional and responsive manner, to ensure and enhance all science and commanding interfaces.		Justification
Schedule Objectives (Milestones)	Weighting Schedule % 10% (min 10%)	Schedule Score X 10% =
Deliver the Absolute Time Sequences to the Fermi Science Support Center on a weekly basis. Real-time commands (unscheduled) are sent on time, as needed. Fermi weekly meetings are supported.		Justification
Cost (actual vs. negotiated)	Weighting Cost% 25% (min.25%)	Cost Score X 25% =
		Justification
	Weighting Total % 100.00%	Total Score

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

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Comments:

Risk Assessment

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(b)(4)

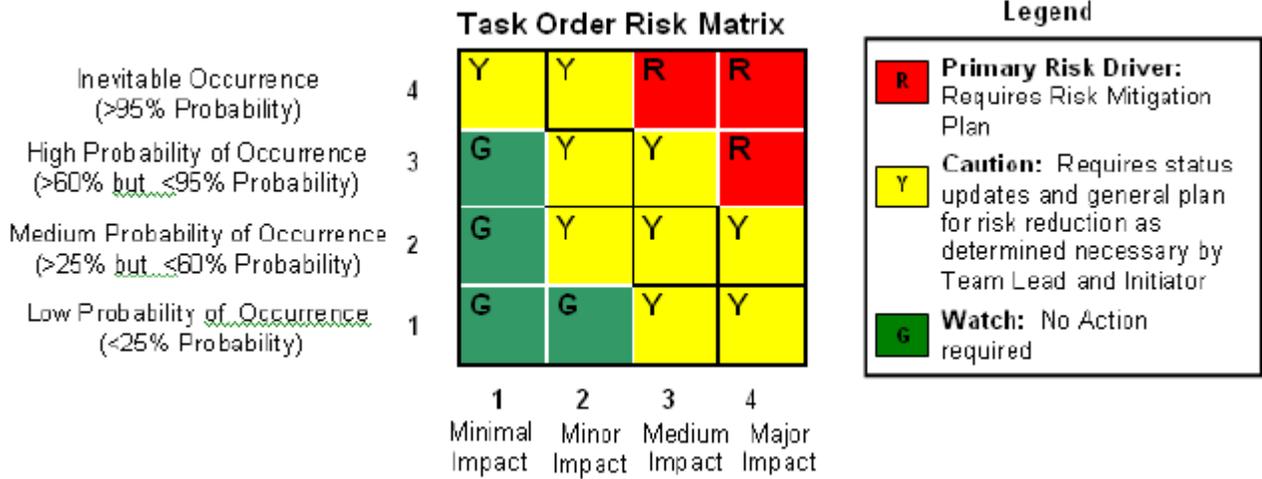
Task Order Risk Assessment to Cost, Technical, and Schedule

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.

Sub-Element: 00 (GBM GIOC Operations)

Risk	Risk Type	Probability (1-4)	Impact (1-4)	Risk Description
Risk C1	Cost	1	1	Meet cost estimate to within 10%.
Risk C2	Cost			
Risk T1	Technical	1	1	Meet all technical objectives and goals.
Risk T2	Technical			
Risk S1	Schedule	1	1	Meet all schedule deadlines.
Risk S2	Schedule			

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



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