

## **Task Order Plan (TOP)**

**Contract Number:** NNM05AB50C

**TO Title:** *Structural Health Monitoring (SHM) Technology Assessment*

**TO Number:** 32-040318 **Revision:** 01

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

**MSFC Initiator:** *Melanie Bodiford*

(b)(4)



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**Emergency:** *No*

**WBS #** 727950.04.02.62

### **Revision 01:**

This Task Order (TO) defines and estimates work for the period October 2, 2010 through September 30, 2011 for Contract Year 6 of the NNM05AB50C ESTS contract. Additionally, the Schedule, Performance Plan and Risk Assessment have been revised to reflect changes in task activities for the new period of performance.

#### **1.0 Task Order Description & Objectives**

Provide quick assessments of sensor analog signals correlated to Structural Health Management (SHM) to determine feasibility of sensor energy harvesting and energy storage research activities. Candidate technologies include Spiral Phased Array SHM Sensor, the Composite Long Range Variable Emitter Radar (CLOVER) SHM sensor, the Electrical Impedance type SHM sensor, Triboluminescent SHM sensor, along with energy harvesting and energy storage techniques suitable for SHM applications.

Collect, analyze, and represent the myriad of empirical SHM sensor performance, empirical energy harvesting experimental data, and the empirical test data for the energy storage options being considered. Provide the development of analytical algorithms for data "feature extraction" and analysis. Recommend interpretive algorithms approaches for future assessment.

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

Matlab data storage and analysis software will be utilized to collect, analyze and represent SHM performance, energy harvesting experimental and test data.

#### **3.0 Discussion of Skills Required**

A mix of junior and senior level engineers with vehicle, subsystem, operations, sensors and test experience is required. Personnel should be capable of utilizing Microsoft Office software. The ability to create and manipulate Excel spreadsheets and PowerPoint presentations is required.

#### **4.0 Special Tools Required**

None.



# ESTS Contract Task Order Request Performance Plan

Task Order Title: [Structural Health Monitoring \(SHM\) Technology Assessment](#)

Task Order Number: [32-040318](#) Revision: 01

Category	Weighting Technical %	End of Period Technical Score
<b>Technical Objectives</b>	65%	X 65% = <b>Justification</b>
Assessments of SHM sensors Assessments of SHM energy harvesting techniques Assessments of SHM energy storage techniques Recommendations for interpretive algorithm approaches		
<b>Schedule Objectives (Milestones)</b>	Weighting Schedule % 10% (min 10%)	Schedule Score X 10% = <b>Justification</b>
-Monthly Activity Report -Preliminary Report according to the project schedule -Final Report according to the project schedule		
<b>Cost (actual vs. negotiated)</b>	Weighting Cost % 25% (min.25%)	Cost Score X 25% = <b>Justification</b>
	Weighting Total % 100.00%	<b>Total Score</b>

## 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: [Structural Health Monitoring \(SHM\) Technology Assessment](#)

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**Comments:**

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**Risk Assessment**

**Contract Number:** NNM05AB50C

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**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 risk has been identified.
Risk C2	Cost			
Risk T1	Technical			No technical risk has been identified.
Risk T2	Technical			
Risk S1	Schedule			No schedule risk has been identified.
Risk S2	Schedule			

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



