

## Task Order Plan (TOP)

**Contract Number:** NNM05AB50C  
**TO Title:** Ares V Systems Engineering Support  
**TO Number:** 37-010305 **Revision:** 01

---

**Period of Performance:** 10/02/2010 to 12/31/2010

**MSFC Initiator:** Wendy Hulgan

(b)(4)



---

**Emergency:** No

Revision 01: 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 December 31, 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 element: Vehicle Integration, Ares V sub-element –AA.

Sub-element	Sub-element Title	WBS	Status
37-010305-AA	Ares V Requirements Development	206518.08.07.20	Added with Rev -00

Revision 00: The purpose of this Task Order is to provide Ares V systems engineering support for Ares V requirements development as part of Contract Year 5 of the NNM05AB50C ESTS contract. This effort will be managed under sub-element -AA.

### 1.0 Task Order Description & Objectives

Provide system engineering products and support. This function includes the discipline areas of System Stakeholder Expectations Definition, System Technical Requirements Definition, System Logical Decomposition, System Requirements Management, System Verification/Validation, System Decision Analysis, System Technical Risk Management, and System Technical Assessment.

Products include System Requirements documents/databases; System Requirement Allocation Matrix and Requirements Traceability; System Requirement/Spec Trees; System/Subsystem Architecture and functional decomposition documents; Interface Requirements documentation; Interface Control documentation; Stakeholder needs definition and operational concept development; Verification/Validation Requirements, Planning, and Compliance Tracking documents/databases; Systems Trade Study Reports/Presentations; Technical Risk Assessment and Tracking databases; System Analysis & Modeling analyses and reports; monthly activity reports; updates to monthly review charts; Review Item Discrepancies/Request For Actions; presentations; and technical papers where appropriate. Use of systems engineering tools such as CRADLE and ARM may be required depending on specific Project/Program needs.

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.

### **Sub-element -AA**

#### **Ares V Requirements Development**

To support the Ares V project in the areas of requirements and verification and general system engineering. This task includes the development and maintenance of high level system and/or subsystem requirements, verification method, phase, and level, and traceability to upper and lower level requirements. Tasks such as developing and/or making inputs to requirement trees, requirements trade studies, decomposition, interface definition, requirements flow and hierarchy definition may be included in this task as directed by the ES Department Lead Engineer and ES13. This task may require the use of a requirements management database tool and other tools as defined by the ES13.

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

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. Use of systems engineering tools such as CRADLE and ARM may be required depending on specific Project/Program needs.

The Jacobs ESTS Group will support meetings, teleconferences, Technical Interchange Meetings, (TIMs), etc., as required by the MSFC Space Systems Department Systems Engineering & Integration Branch.

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

This Task Order requires (b)(4)

(b)(4) Experience in technology development, operations, and systems engineering is required. Systems engineering or integration experience with payloads or flight systems is also required. Working knowledge of NASA or DoD Systems Engineering processes is required. Independent initiative with good "follow-up" and organizational skills is required. Experience with systems engineering tools such as CRADLE and ARM is desired.

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

None.

#### **5.0 Participating Subcontractors**

None.

#### **6.0 Milestones & Deliverables**

Monthly Activity Reports, updates to MSFC Space Systems Department Systems Engineering & Integration Branch monthly review charts, and project documentation as determined by project or MSFC Space Systems Department Systems Engineering & Integration Branch.

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

None.

#### **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 #	Subelement	Task Work Element					
			Sep	Oct	Nov	Dec	Jan
37-010305	00	<input type="checkbox"/> <b>Ares V Systems Engineering Support</b>					
37-010305	AA	Ares V Requirements Development					
37-010305	00	<input type="checkbox"/> <b>Monthly Activity Report</b>					

# ESTS Contract Task Order Request Performance Plan

Task Order Title: [Systems Engineering Branch](#)

Task Order Number: [37-010305](#) Revision: 01

Category	Weighting Technical %	End of Period Technical Score
<b>Technical Objectives</b> -Support Ares V requirements and verification development and general system engineering activities such as trades and analyses. -Support task planning and system documentation development. -Support schedule development, action tracking/status, risk management as requested in support of task management functions. -Support project meetings/teleconferences. -Provides task status to DLE and ES13 as requested.	65%	X <u>65%</u> = <b>Justification</b>
<b>Schedule Objectives (Milestones)</b> -Monthly status reports -Activities in support of Ares V project milestones -Provide weekly status as requested	<b>Weighting Schedule %</b> <u>10%</u> <i>(min 10%)</i>	<b>Schedule Score</b> X <u>10%</u> = <b>Justification</b>
<b><u>Cost (actual vs. negotiated)</u></b>	<b>Weighting Cost%</b> <u>25%</u> <i>(min.25%)</i>	<b>Cost Score</b> X <u>25%</u> = <b>Justification</b>
	<b>Weighting Total %</b> <u>100.00%</u>	<b>Total Score</b>

# ESTS Contract Task Order Request Performance Plan

Task Order Title: [Systems Engineering Branch](#)

Task Order Number: [37-010305](#)      Revision: 01

---

## 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: [Systems Engineering Branch](#)

Task Order Number: [37-010305](#)      Revision: [01](#)

---

**Comments:**

---

**Risk Assessment**

**Contract Number:** NNM05AB50C  
**TO Title:** Ares V Systems Engineering Support  
**TO Number:** 37-010305 **Revision:** 01

**Period of Performance:** 10/02/2010 to 12/31/2010

**MSFC Initiator:** Wendy Hulgan

(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 risk identified.
Risk C2	Cost			
Risk T1	Technical			No technical risk identified.
Risk T2	Technical			
Risk S1	Schedule			No schedule risk identified.
Risk S2	Schedule			

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



