

STATEMENT OF WORK
Product Development Lead (PDL)
E-Learning Module

Purpose

This procurement is for services to design and develop one E-Learning module for the Product Development Lead (PDL) Training program at the Goddard Space Flight Center in Greenbelt Maryland. The PDL Training program is designed to enhance the technical skills of GSFC employees.

The government is looking to procure an initial E-Learning module in what may become a series of e-learning segments for an existing training program for PDL engineers at NASA Goddard Space Flight Center. The current training is taught by in-house technical experts as instructors using PowerPoint slides and class exercises as learning material. We are looking to provide a blended learning approach by adding an E-Learning component so as to enhance the learning experience.

Background

The Applied Engineering and Technical Directorate in collaboration with the Office of Human Capital Management (OHCM) have a commitment to deliver technical training for PDLs as well as those aspiring to be PDLs. The current PDL program was developed in 2011 and implemented in 2012.

Delivering mission and instrument hardware/software has become increasingly challenging due to the constrained budgets and technical complexity of NASA's science missions. The cost, schedule and technical performance responsibility for delivering mission subsystems now lies with mid-level engineers who may have the technical experience required but lack the programmatic and team leadership knowledge, skills and tools to deliver within resource constraints.

The PDL Training program is designed to provide a disciplined approach in training and preparing knowledgeable experienced individuals who accept the ownership, responsibility, and accountability for developing and delivering their assigned flight mission subsystems that meet technical requirements within cost and schedule constraints. This course provides current or newly assigned Product Development Lead (PDL) Engineers with practical application learning activities to emphasize and reinforce key subject areas relevant to PDLs.

PDL Training Program Architecture

The following screen shot provides an overview of the PDL Training program. Note that the PDL Training program has an internal GSFC website that contains specific information from individual workshops including slides, objectives, presenters, and course schedules. The E-Learning module will be designed, developed, and implemented for workshop three, "*Getting to Good Requirements/Risk Management.*"

PDL Training Program Architecture

Orientation Workshop	1 Half-Day Session	PDL Orientation	<ul style="list-style-type: none"> • Expectations, scope, and logistics • Tools available to PDLs – Wiki and templates
Core Workshops	2 Half-Day Sessions	Workshop 1: PDL Role Throughout Project Lifecycle	Workshop covers: <ul style="list-style-type: none"> • PDL subsystem responsibilities • PDL deliverables • Documents overview
	2 Full-Day Sessions	Workshop 2: Getting to Good Requirements/Risk Management	Workshop covers: <ul style="list-style-type: none"> • Requirements development, flowdown and analysis • Allocation, traceability, verification and validation • Evaluating a requirement change • Risk Management
	2 Full-Day Sessions	Workshop 3: Schedule Matters	Workshop covers: <ul style="list-style-type: none"> • Basic scheduling concepts • Schedule development, management, and reporting • Utilizing in-house schedule checklists
	3 Full-Day Sessions	Workshop 4: Cost Estimating and Tracking	Modules: <ul style="list-style-type: none"> 5.1 NASA Budget Process 5.2 Performing Procurements with Ease 5.3 Grassroots Cost Estimating and Basis of Estimate (BOE) 5.4 Statement of Work (SOW) Walk-through 5.5 Contractor Task Report and NASA Form 533 5.6 Top 10 Things a Project Wants a PDL To Know 5.7 Top 10 Things That Cause Cost Overruns 5.8 Earned Value Management (EVM)
	3 Half-Day Sessions	Workshop 5: Navigating PDL Processes	Modules: <ul style="list-style-type: none"> 2.1 WBS 2.2 Product Plan 2.3 Configuration Management 2.4 Anomaly Reporting
	1 Full-Day & 1 Half-Day Session	Workshop 6: Leadership for PDL's Sake	Modules: <ul style="list-style-type: none"> 6.1 Leadership Aspects of Being a PDL 6.2 Leading a Technical Team 6.3 Functional Leadership Skills

Total Class Time: 11.5 days spread over 2-3 months:
 • Orientation: 1 half day
 • Core Workshops: 11 days

For more information, visit <http://pdl.gsfc.nasa.gov>
 Product Development Lead Training Program

Requirements

1. Vendor shall have experience with technical (aerospace) type of subject matter (Writing and Managing Technical Requirements, Risk Management, Schedule Estimating and Managing, Cost Estimating and Managing, Technical Leadership).
 - a. Note: It is also desired for the vendor's experience to be in an equivalent industry to Aerospace and an equivalent student discipline type of Engineer.
2. Vendor shall have experience determining what material is most appropriate for E-Learning. This experience will be evidenced by the vendor providing us their metrics on impact of E-Learning activities from previous clients.
3. Vendor shall provide E-Learning, which is interactive and engaging, while providing students with new skills in the areas listed above. The measurement of the success of the vendor in this task will be in terms of the learning achieved by the students through E-Learning.
4. Vendor shall provide method of measuring impact (i.e. how much student learned after participating in E-Learning).

- a. Note: This measurement could be performed by way of an online quiz, which records all student grades, but could also be through other innovative types of measurement of the students, provided it has some quantitative measurement.
5. After contract award, the government shall provide the foundational content and copy to be the starting point for the E-Learning material. It shall be the deliverable of the vendor to adapt this content and modify it to best operate in an E-Learning delivery mechanism and to optimize the learning of the students through the vendor's final deliverable.
 - a. Note: The foundational content and copy to be provided by the government includes, but is not limited to: PowerPoint presentations, links to publically available NASA and Goddard standards, videos of engineering experts, PDF's of other supporting material, and a list of the student participants, with their area of engineering specialty.
6. In Phase 1, the E-Learning material shall be usable without any degradation of functionality on both PC and Mac platforms. The E-Learning material shall not require any special installation of software or anything which requires administrator privileges on the student's computers.
 - a. Rationale: Most students will not have the ability to install new software applications on their laptops and desktops without substantial difficulty and lead-time. For this purpose is it desirable to have the E-Learning material be delivered through a standard browser (Firefox, Internet Explorer, or Chrome). JavaScript and Flash would be acceptable as long as they run in modern versions of the browsers listed above and do not require any modifications to the browser to operate.
7. In Phase 2, the E-Learning material shall be usable without major degradation on all major mobile platforms (iPhone, iPad, Android). This could be by way of the built in mobile browser or through the format of a mobile app.
 - a. Note: If there is difficulty or substantial increase in costs or change in schedule to implement this requirement, please detail this in your response to NASA.
 - b. This Phase 2 activity shall be quoted separately.
8. The E-Learning material shall be fully compatible and integrated into NASA's learning management system named System for Administration, Training, and Education Resources for NASA (SATERN). E-Learning materials that do not pass NASA testing on SATERN will be returned to the vendor for correction.
9. The E-Learning material shall meet Section 508 requirements and conform to the ADL SCORM 1.2 standard. Listed below are some typical Section 508 compliance requirements for all online training:
 - a. The introduction page of the course must include a link visible only to screen readers for a text only equivalent version of the course content. The link will be located on the top-left of the first page so that the screen reader picks it up almost immediately (JAWS is the predominant screen reader for NASA). In addition, clicking the text only link must pass a completion status to SATERN.

The learner should be informed of this at the conclusion of the text only version.

- b. All text images shall contain an alt tag (alternate text) that can be read by a screen reader, such as JAWS when published.
 - c. A text transcript of videos shall be made available by way of a link labeled "Video Transcript" next to video player window.
10. The E-Learning material shall be developed to use HTML pages, jpg, or png images, and mp3 sound files.
 - a. Flash-based authoring tools such as Adobe Articulate, Presenter, and Captivate that require the use of plug-ins (e.g., Flash, Silverlight) are not recommended as they frequently have compatibility issues. However, tools that produce animated gifs and swfs are OK for including in html-based courses.
 - b. NASA and SuccessFactors (the vendor of SATERN) recommend using the Trivantis Lectora content development tool.
11. The E-Learning material shall have bookmarking features and record bookmarks as the learner progresses through the course so that system communication is maintained and the learner can restart training where they left off.
12. The E-Learning material shall have a course introduction page and meet the below requirements:
 - a. The first screen of the course needs to explain how to navigate the course, how to turn optional features on and off, who to contact with questions about the course content (typically the course owner), and who to contact with technical issues with the course (NSSC Contact Center at 877-677-2123 or NASA-satern.support@nasa.gov).
 - b. This page must include a validation of SCORM communication (FindAPI). If SCORM communications fail, the following error message must be displayed: "Communication with SATERN cannot be established. If you continue, you will not receive credit for this course. Please exit the course, return to your Learning Plan and launch the course again. If you receive this error again, notify the NSSC Customer Contact Center at 877-677-2123 or NASA-satern.support@nasa.gov."
 - c. An Icon link to the NSSC desktop configuration checker needs to be available on each page, preferably in the upper right corner. The appropriate link for this icon is:
<https://searchpub.nssc.nasa.gov/servlet/sm.web.Fetch/ComputerAndBrowserInfo.htm?rhid=1000&did=693952&type=released>.
13. The E-Learning material shall have a final course/completion page and meet the below requirements:

- a. This page needs to explicitly state the training (or module) is complete, explain how to verify completion credit, and who to contact if completion credit was not recorded in SATERN (NSSC Contact Center at 877-677-2123 or NASA-satern.support@nasa.gov).
- b. Credit for course completion will be awarded upon launching this page and not be dependent upon hitting a “Complete Course” button. The “Complete Course” button should close out the course window.
- c. This page must include an automatic validation of course completion (LMSGetValue("cmi.core.lesson_status")) and indicate such completion (or failure) on the final screen. See below: If validation is not successful, the following error message must be generated.
 - i. Success message: “You have reached the end of this course. This message indicates that your status of completed has been recorded to SATERN.”
 - ii. Failure message: “There was a problem communicating with the SATERN server. Your status of complete did not record. Please close this window, exit the course, and re-launch the course from your Learning Plan. If the problem persists, contact the NSSC Customer Contact Center at 877.677.2123 or NASA-satern.support@nasa.gov.”

14. Vendors shall include licensing agreements.

15. Vendors shall include software assurance agreement for software.

16. Vendors shall include an extended Software assurance agreement for up to 5 years.

GSFC Staffing

GSFC will provide a PDL project manager who will provide general management, oversight, guidance, direction to the contractor during all phases of this contract.

GSFC will provide a Contracting Officer’s Representative (COR), who will provide technical guidance and direction, as appropriate, to the contractor during all phases of this contract.

Contractor Staffing

The contractor shall provide a Project Manager for PDL activities to coordinate with the COR, and staffing to accomplish the services required by this Statement of Work. The Project Manager shall be designated as a key person.

Said contractor project manager shall:

- Interface with the PDL project manager on all programmatic, administrative, and logistical issues.
- Interface with GSFC COR on all issues as needed.
- Provide periodic updates of the work to the PDL program manager and the COR as requested.

Qualifications for Key personnel

The contractor shall engage personnel for the tasks set forth in this statement of work that have extensive experience in designing E-Learning curricula for a technical target audience.

Program Property and Materials

The government (GSFC) owns all PDL content and materials, including the PDL eLearning module and its content and components.

GSFC shall provide:

- Specific course content for the E-Learning module to be designed and developed.