



**Training Proposal for:**

**Lockheed Martin Space Systems Company,  
a division of Lockheed Martin Corporation**

**Agreement Number: ET16-0227**

**Panel Meeting of:** November 5, 2015

**ETP Regional Office:** San Francisco Bay Area

**Analyst:** C. Hoover

**PROJECT PROFILE**

Contract Attributes:	Retrainee Priority Rate	Industry Sector(s):	Aerospace and Defense Engineering Manufacturing Nanotechnology  Priority Industry: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Counties Served:	Santa Clara and Santa Cruz	Repeat Contractor:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Union(s):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No District Lodge 725 International Association of Machinists and Aerospace Workers		
Number of Employees in:	CA: 5,571*	U.S.:107,000	Worldwide: 112,000
<u>Turnover Rate:</u>	9%		
<u>Managers/Supervisors:</u> (% of total trainees)	13%		

\*This is for the LM Space Systems division, not LM Corporation

**FUNDING DETAIL**

Program Costs	-	(Substantial Contribution)	(High Earner Reduction)	=	<b>Total ETP Funding</b>
\$749,232		\$0	\$0		\$749,232

<b>In-Kind Contribution:</b>	<b>100% of Total ETP Funding Required</b>	<b>\$2,083,400</b>
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**TRAINING PLAN TABLE**

Job No.	Job Description	Type of Training	Estimated No. of Trainees	Range of Hours		Average Cost per Trainee	Post-Retention Wage
				Class / Lab	CBT		
1	Retrainee Priority Rate	Business Skills, Computer Skills, Continuous Impr., Mgmt Skills, Mfg Skills	946	8-200	0	\$792	\$16.88
				Weighted Avg: 44			

**Minimum Wage by County:** Job Number 1: \$16.44 per hour for Santa Clara County and \$15.07 per hour for Santa Cruz County.

**Health Benefits:**  Yes  No This is employer share of cost for healthcare premiums – medical, dental, vision.

**Used to meet the Post-Retention Wage?:**  Yes  No  Maybe

Although employer provides health benefits, they are not being used to meet Post-Retention Wage.

**Wage Range by Occupation**

Occupation Titles	Wage Range	Estimated # of Trainees
Production Staff - I		172
Production Staff - II		40
Engineers & Information Technology Staff - I		80
Engineers & Information Technology Staff - II		213
Engineers & Information Technology Staff - III		140
Finance & Business Operations Staff - I		101
Finance & Business Operations Staff - II		60
Finance & Business Operations Staff - III		20
Managers - I		15
Managers - II		85
Managers - III		20

**INTRODUCTION**

Lockheed Martin Space Systems Company (LM Space Systems or Division) is one of five major divisions of Lockheed Martin Corporation ([www.lockheedmartin.com](http://www.lockheedmartin.com)). The corporate entity, headquartered in Maryland, was formed in March 1995 with the merger of two technology companies, Lockheed Corporation and Martin Marietta Corporation. In 1996, Lockheed Martin acquired Loral to add defense electronics and systems integration to its technologies. LM Space Systems is engaged in design, research and development, engineering, production of satellites, strategic and defensive missile systems, and space transportation systems.

Customers include the Department of Defense, National Aeronautical Space Administration, National Oceanic Atmospheric Administration, the intelligence community, and other government and commercial entities in the United States and allied countries around the world.

[Note: This division is not involved in the Department of Defense project in Southern California in concert with Northrup Grumman Systems Corporation. [See ET16-0228.]

## **PROJECT DETAILS**

In California, LM Space Systems currently serves as the prime contractor and systems integrator on a number of critical strategic programs. Over the last two years, the Company has seen growth within its business environment:

- Early 2014: LM Space Systems opened an Advanced Materials and Thermal Sciences Center Building in Palo Alto. Its new 82,000 square foot laboratory houses 130 engineers and hosts advanced research and development in emerging technology areas including 3-D printing, energetics, thermal sciences, nanotechnology, synthesis, high pressure materials and advanced devices.
- December 2014: LM Space Systems opened a new facility on its Sunnyvale campus to accelerate the U.S. Navy's Mobile User Objective System program via a new radio terminal development and certification facility.
- April 2015: LM Space Systems opened a new laboratory for the development of next-generation seekers that will help the U.S. Missile Defense Agency defend against increasingly complex missile threats.

LM Space Systems has participated in two previous Agreements, one project within the last 5 years. That project was targeted primarily at financial professionals requiring training related to the rollout of the Procure to Pay payment system. The previous Agreement funded only a small percentage of LM Space Systems' workers. This proposal is broader in size and scope. It will touch on all major populations of LM Space Systems' California workforce. Training will be delivered on technical topics related to new technologies and changing manufacturing processes and initiatives to help optimize business processes.

### **Training Plan**

LM Space Systems is a project-based business, and it faces pressure by its customers to reduce operating costs and improve efficiencies while delivering products that meet stringent quality standards. Minor design flaws or production errors can translate into billions of dollars in cost overruns. The Company requires the latest technologies, sophisticated software tools, optimized production methods, and a structured and efficient program management process which requires a significant volume of training in order to deliver value, secure future business contracts, and retain operations. All training will be Classroom and Laboratory training. LM Space Systems conducts a formal needs assessment on an annual basis where specific training needs are identified, quantified, and ranked based upon priority.

**Business Skills** (30%): Training will be offered to Finance and Business Operations (F&BO) Staff and Engineers. Training will focus on Program Management. Specific courses will include control account management, subcontract management, project management, team leadership, and customer relations. A series of courses will also be provided for winning new customer contracts and sustaining sizable California operations.

**Computer Skills** (30%): Training will be offered to Engineers and Information Technology (IT) Staff. Training is designed to concentrate on three primary facets of IT- information security,

network administration, and systems/software Engineering. Information security courses will be provided in CISSP, Security+, and Ethical Hacking. Network administration will include various platforms, databases, and tools used to administer and sustain LM Space Systems's network (e.g. RedHat, Cisco, and VmWare). Systems/software engineering training in advanced software tools and programming languages including Zuken, LabView, ProE Wildfire, Java and Ruby will help the Company develop, design, produce, and test products.

**Continuous Improvement (15%):** Training will be offered to Engineers, Production Staff and F&BO staff. Trainees will attain effective problem solving skills in such areas as root cause analysis, statistical process control, and corrective action and valuable credentials in Six Sigma Green Belt and Black Belt certifications. Specific courses will be offered in Space and Atmospheric Concepts (e.g. signaling, modern infrared, optics, metrology, and vacuum technology) which will cover launching and sustaining satellites, missile systems, and space transportation systems. Many of the Company's Continuous Improvement Initiatives also involve measurable outcomes including reductions in process waste, errors, and process times and increased contracting opportunities.

**Management Skills (5%):** Training will be offered to Managers and workers who are transitioning into manager roles. Much of this training will involve recently developed curriculum from the Company's Center for Leadership Excellence. Leadership skills are crucial to managing its fast-paced work environment.

**Manufacturing Skills (20%):** Training will be offered to Production Staff and Engineers. Production Staff requires internal skill certifications in the various production related qualifications and certifications. Sunnyvale production workers must become certified in updated manufacturing processes in order to perform specific production related tasks. For example, cable and harness, soldering, precision preparation and cleaning, geometric dimensioning and tolerancing, and polymeric. Engineers may participate in certain topics.

### **Out-of-State Training**

Approximately 97% of the proposed training will occur at LM Space Systems' locations (Palo Alto, Sunnyvale and Santa Cruz). A small percentage (3%) of the training will be delivered out-of-state at Lockheed Martin's headquarters in Bethesda, Maryland for Management Skills training where its Center for Leadership Excellence is located.

### **Out-of-State Vendors**

In-house trainers will provide the majority of the ETP training. However, LM Space Systems has retained an out-of-state vendor (Marquis Group) to develop the proposal and provide administrative services. The Marquis Group were used and approved for all of Lockheed Martin's previous ETP Agreements.

### **Substantial Contribution**

LM Space Systems is a repeat contractor. However, the Company is not subject to a Substantial Contribution since the funds earned are not in excess of \$250,000 within the last 5 years.

### **Union Support**

The International Association of Machinists and Aerospace Workers has issued letter to support the proposed training.

## **Commitment to Training**

LM Space Systems represents that ETP funds will not displace the existing financial commitment to training. LM Space Systems' 2014 and 2015 annual training budget for California is \$8 million each year through a formalized corporate-level process. The Company provides a variety of mandatory curriculum in ethics, diversity, sexual harassment, security practices, compliance and orientation on an annual basis. Additionally, the Company provides elective training topics in various technical and soft skills areas. This training extends across all operational functions and occupations.

LM Space Systems continually delivers training to keep pace with technology upgrades, changing manufacturing procedures and continuous improvement efforts. The Company expects continued budget support for mandated training plus support for other training needs determined to be the most critical. Safety training is, and will continue to be, provided in accordance with all pertinent requirements under state and federal law.

## **Record Keeping**

The Sunnyvale training support coordinators are responsible for assigning the training rooms and collection of hard copy rosters for entry into the Learning Management System (LMS), MyLearning. The LMS is utilized by all the coordinators to enroll trainees, validate training completion and training hours. The LMS is an established record-keeping system and is currently in place as it has been used in previous ETP Agreements. The LMS has been approved by ETP staff. The contractor has completed the Electronic Training Questionnaire providing detailed information about the LMS.

### ➤ Training Infrastructure

To optimally administer the ETP project, LM Space Systems will use its internal training coordinators and its external consultants the Marquis Group. The Marquis Group will be responsible for ETP administrative duties. Marquis Group is familiar with the internal training implementation structure for LM Space Systems, and has the appropriate internal contacts for the various training components. Marquis Group has direct administrator-level report-running privileges in the LMS and has an assigned corporate contact that will assist with administration.

## **Impact/Outcome**

With ETP funds, LM Space Systems can extend training efforts to broader populations and deliver an expanded curriculum of training topics beyond what is currently feasible. Training will result in formal industry-recognized certifications (e.g., Six Sigma Black Belt and Green Belt Training) and formal company-recognized certifications. Company-recognized certifications are production-related certifications that are required to qualify employees on specific job tasks and typically include some verification of competency, which may occur through a formalized test at the conclusion of training and/or demonstrated effective use of the skills attained in an on-the-job setting.

Additionally, IT Staff will receive training towards a formal industry recognized certification (e.g.-networking or information security). Gaining these credentials and skills will allow the Company to better protect its data assets and ensure the integrity of its advanced computer networks.

## **Trainer-to-Trainee Ratio**

LM Space Systems has requested a modification to the trainer-to-trainee ratio cap for Business Skills and Continuous Improvement training. The Company's is requesting to modify the trainer-to-trainee ratio from 1:20 to 1:26 in order to train the large number of people in the 21 month

training period of the ETP Agreement. This will only affect 30 classes and approximately 30% of the training. Staff recommends approval of this waiver.

### **RECOMMENDATION**

Staff recommends approval of this proposal.

### **PRIOR PROJECTS**

The following table summarizes performance by LM Space Systems under an ETP Agreement that was completed within the last five years:

Agreement No.	Location (City)	Term	Approved Amount	Payment Earned \$ %
ET12-0303	Santa Clara, Santa Cruz, Sunnyvale	3/26/2012– 3/25/2014	\$180,000	\$174,421 (97%)

### **DEVELOPMENT SERVICES**

LM Space Systems retained the Marquis Group in Volente, Texas to assist with development of this proposal for a flat fee of \$29,000.

### **ADMINISTRATIVE SERVICES**

LM Space Systems also retained the Marquis Group to perform administrative services in connection with this proposal for 13% of the payment earned.

### **TRAINING VENDORS**

National Instruments of Santa Clara will provide training for a fee between \$500-\$1,000 per trainee.

AVS (Science and Technology of Materials, Interfaces and Processing) of Chico will provide training for a fee of approximately \$1,000 per trainee for a multi-day course.

Zuken, Inc. of Milpitas will provide software training for a fee between \$500-\$1,000 per trainee.

UCSB Extension of Santa Barbara will provide (Modern Infrared) training for approximately \$2,000 per trainee for a multi-day course.

Other trainers will be identified for ETP record-keeping purposes as they are retained by Lockheed Martin Space Systems Company.

**Exhibit B: Menu Curriculum****Class/Lab Hours**

8-200

Trainees may receive any of the following:

**BUSINESS SKILLS**

- ✚ Program Management
  - Program Management
  - Capture Strategy
  - Capture Management
  - Control Account Management
  - Subcontract Management
  - Project Management
  - Team Leadership
  - Contracted R&D Capture (CRAD)
  - Customer Relations

**COMPUTER SKILLS**

- ✚ Information Security
  - CISSP
  - Security +
  - Ethical Hacking
- ✚ Network Administration
  - Admin Windows Server
  - RedHat
  - HTML Programming
  - Data Analytics
  - Cisco Admin
  - VMware
- ✚ Systems/Software Engineering
  - Zuken
  - Systems Modeling
  - Pro/E (including Wildfire)
  - Java Programming
  - Ruby Programming
  - LabVIEW
  - Clearcase
  - Rational Rhapsody
  - Windriver

**CONTINUOUS IMPROVEMENT**

- ✚ Six Sigma & Problem Solving Methodologies
  - Green Belt & Black Belt
  - Root Cause Analysis
  - Statistical Process Control
  - Corrective Action
- ✚ Space and Atmospheric Concepts
  - Understanding Space
  - Space Mission Structures
  - Optics and Metrology
  - Vacuum Technologies
  - Modern Infrared
  - Signaling Technologies

**MANAGEMENT SKILLS** (Management Trainees Only)

- ✚ Leadership Fundamentals
- ✚ Early Career Leadership Fundamentals
- ✚ Financial Strategies

**MANUFACTURING SKILLS**

- ✚ Cable & Harness
- ✚ Soldering
- ✚ Crimping & Connectors
- ✚ Polymerics
- ✚ Precision Prep & Cleaning
- ✚ Geometric Design & Tolerances (GD&T)

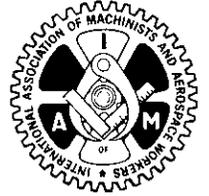
Safety Training will be limited to 10% total training hours per trainee

Note: Reimbursement for retraining is capped at 200 total training hours per trainee, regardless of the method of delivery.

DISTRICT  
LODGE  
725

*International Association of Machinists and Aerospace Workers*

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September 22, 2015

Mr. Christopher Hoover  
Associate Governmental Program Analyst  
Employment Training Panel, State of California  
1065 East Hillsdale Blvd, Suite 415  
Foster City, CA 94404

Dear Mr. Hoover:

I am writing on behalf of the International Association of Machinists and Aerospace Workers (IAMAW) to validate our support for the training program identified in Lockheed Martin Space Systems Company's proposed Employment Training Panel (ETP) application.

The aerospace industry is rapidly evolving, and our workers must keep pace with changing technologies, manufacturing processes, and equipment upgrades. Encouraging employee retraining to meet these challenges is one of the primary goals of our union. The training outlined in this program application will provide our members with valuable new skills and development opportunities.

We strongly support the proposed ETP training project to enhance the skills of our members at Lockheed Martin's Sunnyvale site.

Sincerely,

Kevin Lee  
Business Representative

KL/lis