Standardized Space Trainer

Standardized Space Trainer (SST)

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Overview

• Training Challenges
• New Method
• Need for Standardized Space Trainer for 50 & 460 OSS IQT and Unit Training
• Current Status of Standardized Space Trainer (SST)
Current Training Model

Training Challenges

Trained Personnel Requirements (TPR)

- 1 SOPS DSP SSO
- 1 SOPS GPS SSO
- 1 SOPS GSO
- 2 SOPS GSO
- 2 SOPS PSO
- 2 SOPS SSO
- 2 SOPS SVO
- 3 SOPS SVO
- MILSATCOM SSO
- 4 SOPS SVO
- 4 SOPS EHF SSO

AETC Courses

- IQT
- UQT

Squadron Training

- 1 SOPS
- 2 SOPS
- 3 SOPS
- 4 SOPS

- Stove-piped courses specialized knowledge for a single position, in one SOPS
- TPR projections done 2-3 yrs previously are never accurate due to changes
- Limits Manning flexibility to put new operators where they are needed
  - Vacant positions, positions that lack experience
New Space Operations Initial Qualification Training (IQT) course developed and planned for Oct 06 (CY) at VAFB

- SOPS Assignment executed 3/4 into training
  - Ensures manning balance throughout SOPS and mission readiness
- Intro to IQT BOPR course provided at the end of IQT training
  - Mission specific introduction with basic performance requirements
New Training Model

New Sat C2 IQT Course ("White Sat")

• Develops new operators with in-depth, fundamental knowledge of overall satellite system vs. stove-piped, performance-centric, system-specific focus
  • Attitude Control Methods
  • Electrical Power Subsystems
  • Satellite Contact Procedures
  • Thermal Control Systems
  • Ground System Basics
  • TT&C

• Uses examples from operational satellites and their control systems to reinforce understanding

• Includes basic hands-on simulator training to prepare students for UQT at Schriever (using “in-place” resources)

• Initial Qualification Training (IQT) will be modeled similar to Undergraduate Pilot Training

End Goal: Education Focus Leading to Flexibility and Adaptability in Follow-on Operational Training
What is a Standardized Space Trainer (SST)

COTS Hardware, Common Operating System and Network Capability

- Standardized Space Trainer provides the HW/SW platform from which Initial Qualification Training and System Specific Training can be launched – not a generic training system

- Software applications would be developed by SPOs to execute system specific space training missions -- GPS OCX, SBIRS, TSAT, etc, would have their own applications and operate on SST just like opening Word, Excel, Photoshop, etc on a desktop PC

- Capable of both Crew and Positional Training

- Reduces Operations & Maintenance (O&M) costs associated with having multiple stovepipe space system simulators at VAFB, SAFB and Buckley

- Standardized Space trainer used for training - not testing and development

- Distributed Mission Operations – Space (DMO-S) compatible
Future of Training

Standardized Space Trainer (SST)

• VISION: No need for individual, stovepipe and expensive training space systems -- Standardized Space Trainer (SST) could be used for:

  • AETC (533TRS) Initial Qualification Training (IQT)
    • The new Sat C2 Course: software developed to serve as “White Sat” (i.e. T-38 “white jet” trainer at UPT) to teach fundamentals of: behavior of common military satellites, sub-systems (common to all satellites--non-payload-specific), space flight, orbital mechanics, etc and satellite ops (contact procedures; ground system basics; TT&C)
    • Basic Operator Course (BOPR): Introduction to assigned Satellite System

  • 50 OSS Unit Training (Qualification and Proficiency Training)
    • Software developed to support 2, 3 and 4 SOPS training requirements

  • 460 OSS IQT and Unit Training (Qualification and Proficiency Training)
    • Software developed to support SBIRS C2 and Missile Warning training

Between the 533TRS, 50 OSS and 460 OSS eight different training systems are currently used for IQT and Unit Training - New Systems like OCX, TSAT and SBSS could add more
Current Status Standardized Space Trainer

- STAO, HQ AFSPC/A3 & A5, 50 OSS, 381TRG and HQ AETC have been working closely to make a standardize training system a reality for space

- Lt Gen Hamel (SMC/CC) fully supports standardized space ops trainer and has assigned SMC/SN to lead acquisition effort for Standardized Space Trainer
  - Request for Information (RFI) released to industry 12 Apr 06
    - Industry responses originally due back 24 May 06 - extended one week
  - Education and Training Technology Applications Program (ETTAP)
    - Submitting SST concept for ETTAP funds – expect $500K (FY06)
  - Early acquisition efforts being worked in parallel with AFSPC requirements process – requirements definition & CONOPS

- Space TAG has assigned action to HQ AFSPC/A3T to establish Standardized Space Trainer (SST) TPT
  - SST TPT will be responsible for STP and accomplishment of TSRA
• **Utilization Strategy**
  - Acquisitions *currently* at draft RFP stage could include flexibility to include SST
  - Currently fielded programs could benefit from SST
    - Training systems considering mod/upgrade would cost compare SST option

• **Summary**
  - Paradigm changing to standardized space training system away from expensive, unique, stove-piped systems
  - RFI inputs now due 31 May 2006

For more information see:
http://ax.losangeles.af.mil/axl/stao/standardized_trainer.html
Potential Operator Progression

How it all fits together at 50 OSS

- MC Eng OA
- OSS – I or E
- Payload Expert
- Vehicle Expert
- Line Instructor
- Operator w/ Upgrade Tasks
- SOPS Specific Operator
- Ops Group Training/Basic Operator (BOPR) Certification/UQT
- Satellite C2 Ops Course
- Space 100
- 1 Set of Ops Group Requirements

AETC

50 OSS

Upgrade Modules

Sat C2 Sim