



SOS

Space Operations System



Summary

- 2D/3D Visualization and Simulations
- Battlespace Situational Awareness
- Near Real Time INTEL Data Retrieval
- Space Order of Battle
- Satellite Health and Availability and Map/DTED/Imagery Overlay Display
- Situational Awareness from Common Operational Picture (COP) and Integrated Broadcast System (IBS)

The SOS is a portable computer system designed for space analysis that satisfies the requirement for space-based information and planning tools essential to the warfighter.

The SOS is a portable system that furnishes warfighters with operationally relevant space planning and execution information and tools to support their missions. It provides satellite over flight data, Global Positioning System navigation accuracy, scintillation data, and imagery support. It also provides the Space Operations Officer (SOO) with the ability to garner, interpret, and disseminate all relevant space data and information in support of the joint and combined arms commander.

Introduction

The development and fielding of an integrated, lightweight, hardware-independent space support system that satisfies the requirement for space-based information and planning tools, ranging from academic space training material to complex astrodynamics analysis and visualization tools is essential to the warfighter. The SOS is a portable computer system designed for space analysis. It is an integral part of the Space Support Element Toolset (SSET) and the Army Space Support Team Tactical Set (ARSST-TS) for near world-wide connectivity. The SOS is employed on a WINTEL platform for ease of use and training, and is accredited to operate in unclassified and classified environments. The user is provided with classified and unclassified drives and can connect to NIPRNET/SIPRNET or work in a stand-alone environment.

An SOSi version, which contains imagery manipulation software, is also available.

Description

The SOS is a portable computer with all the features of a desktop system. It has an Intel Pentium 4 3.2GHz Processor with 2GB memory, 512MB Graphics Accelerator, DVD+-R/RW and CD-R/RW Combo, 3.5" FDD, 7 in 1 Media Drive, 15"-17" LCD Monitor, 3 Removable SCSI Ultra-320 Hard Drives, Onboard Sound, Single Gigabit Ethernet NIC, Fiber/UTP Combo NIC, USB 2.0, Firewire, and a hard shell shipping/transport case.

SOS System Software Overview

Currently, the SOS is configured with software that is 100 percent commercial/government off-the shelf (COTS/GOTS) which includes:

- MS Suite of Software
- Collaboration Software
- FrontPage
- BRITE
- ELT 3500
- SBMCS
- SMAT/SCOPES
- C2PC
- ISAT
- PC Datamaster
- Falcon View
- STK
- AWarE
- Imagery manipulation software available with SOSi.

These applications make possible 2D and 3D visualization and simulations, battlespace situational awareness, near real time INTEL data retrieval, space order of battle, satellite health and availability and map/DTED/imagery overlay display.

System Capabilities

The applications within the system are capable of:

- Imagery production (ex. Fly-through, 3D perspectives, 2D images etc.)
- Strategic and tactical Near Real-Time (NRT) space-related information that enhances the following events: Mission Planning, Assessment, Monitoring, and Course of Action (COA) development
- Orbital propagator, estimations, some GPS modeling, and reviewing of Space Tasking Orders, space estimates, and analysis
- ELINT correlation and location for targeting
- Providing SATTRANS (satellite overfly reports), graphical representation of blue and rest of world satellites, and graphical depiction of overfly times
- NRT Imagery Chipsets from national technical means for disadvantaged communications
- 3D Visualization of Maps, Imagery, and Satellites

- Displays launch point and trajectory information for Missile Defense purposes
- GPS navigation accuracy modeling and prediction
- Geospatial Support
- Mission Planning Support for display of imagery, and maps
- Determining the origin of all Tactical Event System (TES) missile launch events and/or their predicted impact areas, and finds all areas of the world that are potentially threatened by these events
- Integrates the features of imagery, maps, and contact information, into an integrated data fusion display
- Displays using vector, raster, and Controlled Image Base (CIB) Maps
- Display imagery in National Imagery Transmission Format (NITF) or bitmap (BMP) formats
- Plot real-time/pseudo real-time contact information
- Manipulate overlay objects on maps and images
- Displays strategic missile information from the correlation centers
- Image acquisition, viewing and analysis in a PC environment, georectification of images
- Situational awareness from COP and IBS

Benefit to the Warfighter

The SOS is a portable system that furnishes warfighters with operationally relevant space planning and execution information and tools to support their missions. It provides satellite over flight data, GPS navigation accuracy and scintillation forecasts, and imagery support. It also provides the Space Operations Officer (SOO) with the ability to garner, interpret, and disseminate all relevant space data and information in support of the joint and combined arms commander. The system is designed to deliver space services and disseminate space information to the warfighter in an efficient manner. The system is currently supporting OPERATION ENDURING FREEDOM in Afghanistan and in OPERATION IRAQI FREEDOM II.

Upcoming and Current Demonstrations:

- October 2004, AUSA Symposium in Washington, D.C.
- December 2004, AUSA Symposium in El Paso, Texas.
- April 2005, Space Symposium in Colorado Springs, Colo.
- ROVING SANDS 2005 in El Paso, Texas.

Participated in Operations and Exercises:

- OPERATION ENDURING FREEDOM (OEF)
- OPERATION IRAQI FREEDOM (OIF) I, II, & III
- ULCHI FOCUS LENSES (UFL)
- RECEPTION, STAGING, ONWARD MOVEMENT, AND INTEGRATION (RSOI)
- JOINT PROJECT OPTIC WINDMILL (JPOW)



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