Navy Input Station (NAVIS)

Real-time Reconnaissance Imagery Processing and Display

Function: The Navy Input Station (NAVIS) is the state-of-the-art in real-time reconnaissance imagery receiving and display. This ground station, developed by the Space Dynamics Laboratory at Utah State University (SDL/USU) under the direction of the Naval Research Laboratory (NRL), provides the capabilities for processing, displaying, and manipulating tactical reconnaissance imagery in real-time from data link or from digital recorder.

NAVIS incorporates SDL-built real-time compression and decompression hardware, including that developed under the Advanced Reconnaissance Compression Hardware (ARCH) contracts with NRL. This hardware significantly reduces the volume of data generated by the sensors without compromising the TAC/RECCE information the data contain.

NAVIS is available in three configurations: a rugged, two-rack stationary system with an integrated link controller for real-time implementations; a non-real-time, Windows NT®-based portable system for rapid screening of digital data from recorder, CD-ROM or hard disk; and a laptop system for screening/demonstration from CD or disk. All systems use the same Image Display Software for image screening and analysis.

Stationary, dual-rack system with integrated link controller for Real-Time telemetry processing.

Image Display Software: This software processes the imagery collected from the sensor via the link connection or digital recorder. The IDS displays continuous data streams in a tiled "waterfall" of decimated image thumbnails. Thumbnails can be tiled according to the sensor model or latitude/longitude positioning. The IDS provides a variety of custom visualization and manipulation capabilities, including:

- User-friendly graphical user interface with online help
- On-demand display of full resolution images and available annotation data while the waterfall is active
- Image pan, zoom, rotation, and contrast/color enhancement
- Object mensuration on full resolution displays
- Target identification and pointer tracking
- Image clone and multiple window display
- Recorder playback control interface with search features
- Real-time continuous recording of the input stream
- Save to multiple formats, including uncompressed (raw), Sun Raster, compressed (HQVQ), JPEG, TIFF, NITF 2.0 uncompressed, NITF 2.0 JPEG, and NITF 2.1 JPEG
- Simultaneous save to another workstation on the network
- Print to hardcopy with customized image product formats

Portable system allows rapid screening from recorder, CD-ROM or hard disk

Laptop system provides screening or demonstration from CD-ROM or hard disk

Specifications:	Real-Time Stationary System	Portable Screening System	Laptop System
Dimensions	72 x 24 x 26 inches (each rack)	18 x 23 x 35 inches (each case)	1.75 x 13.03 x 10.8 inches
Weight	~ 2000 lbs	~ 400 lbs	7.9 lbs
Power	110 V 20 Amp circuit per rack	110 V 20 Amp circuit	110 V 1.5 Amps
Configuration	Dual, ruggedized A&J racks	Dual portable transit cases plus printer	Laptop
Architecture	Standard VME-64 and RACEway	PCI	
Operating System	Solaris 2.6	Windows NT®	Windows NT® or 2000
Processor	SPARC 50	Dual Pentium III®	Pentium III®
Capacities	• 512 MB RAM • 9 GB hard drive / 400 GB RAID	• 1 GB RAM • 36 GB hard drive	• 512 MB RAM • 32 GB hard drive
Decompression	Real-time hardware decompression	Hardware accelerated decompression	Software decompression
Interfaces	• Integrated link controller • Recorder interface (DCRsi, future L-3 Com STAR)	• PCI recorder interface (DCRsi, future L-3 Com STAR)	
External Connections	• 2 RS-232 serial ports • Ethernet network	• 2 RS-232 serial ports • 1 parallel port	• 1 RS-232 serial ports • 1 parallel port • 2 USB ports
COTS Components	• Power distribution panels • UPS units • Dual ruggedized flat-panel displays • Digital recorder • Dual-mode printer • RAID disk array • External drive bay (CD-RW, 8mm tape and Zip®)	• Dual ruggedized flat-panel displays • Digital recorder • Dual mode printer • CD-RW and floppy	• 15 inch display • Minimum 1400 x 1050 resolution • CD-RW, DVD ROM, and Zip® • Modem and network interfaces built in • 2 PCMCIA slots

The Space Dynamics Laboratory, a not-for-profit corporation owned by Utah State University, has been providing sophisticated sensors and supporting expertise to NASA, the United States Air Force, the Ballistic Missile Defense Organization, the United States Navy, and numerous other Government and private aerospace interests for over 40 years.

SDL's mission is to provide superior sensor systems and supporting technologies while delivering the best value and highest satisfaction to the customer.

SDL is certified to the ISO 9001 standard.

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