

SYSTEMS INTEGRATION FACILITY AND COMBINED TEST BED

When your tactical data system interoperability testing project needs an economical, real-time, multi-platform environment, you need the Systems Integration Facility and Combined Test Bed

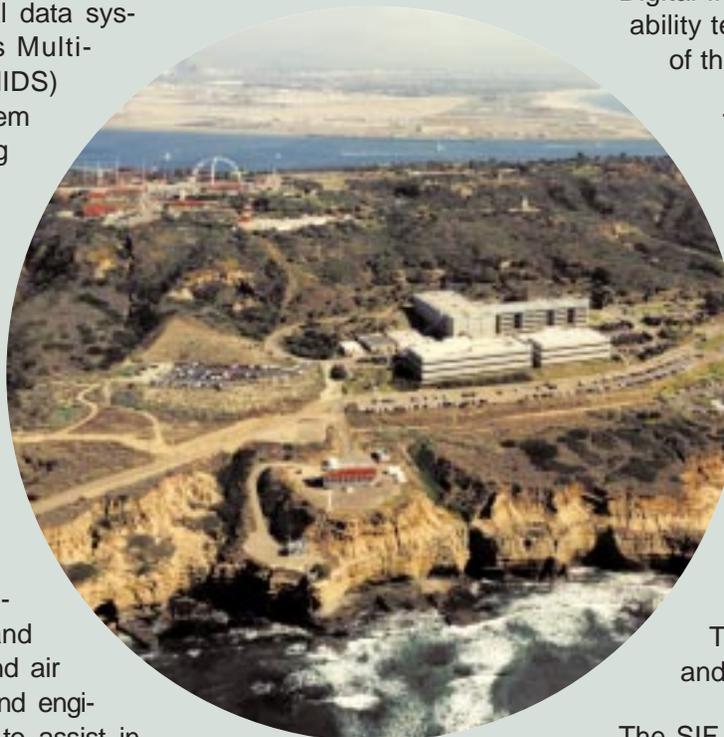


SPAWAR
Systems Center
San Diego

The Systems Integration Facility and Combined Test Bed

The Systems Integration Facility (SIF) and Combined Test Bed (CTB) at SSC San Diego offer a unique capability for the development and operational evaluation of tactical data systems (TDS). The work here encompasses Multi-functional Information Distribution System (MIDS) and Joint Tactical Information Distribution System (JTIDS) terminal testing, multi-platform testing (MIDS/JTIDS radios and hardware-in-the-loop platform testing), and distributed testing utilizing the SIF's hardware-in-the-loop capabilities, as well as connectivity via Data Link Gateway systems.

The environment is ideal for Advanced Combat Direction System (ACDS) and Command and Control Processor (C2P) testing, as well as JTIDS and MIDS testing. Sites throughout the world utilize the unique combination of interconnected Link-16 terminals, operational hardware and software, PC-based monitoring, data extraction, analysis and connectivity tools, simulation systems, ship and air lab connectivity, live transmit/receive facilities, and engineering, evaluation, and integration expertise to assist in evaluating the interoperability of tactical data systems.



MIDS and JTIDS terminals and outside antennas enable live, real-time testing of the entire Link-16 family as well as Link-11. Data Link Test Tools developed at SSC San Diego provide Link-16 connectivity between the SIF and more than 70 joint and international test and software support facilities. This connectivity enables a worldwide Tactical Digital Information Link (TADIL) and systems interoperability test capability that can include as many or as few of these facilities as needed for a particular test.

The SIF and CTB have been used in hundreds of interoperability evaluation scenarios. These scenarios include those conducted in the Theater Missile Defense System Exerciser (TMDSE) program, the Distributed Engineering Plant (DEP) program, the Joint Interoperability Test (JIT) network, directed by the Joint Interoperability Test Command (JITC), and in programs of the Navy Commander Operational Test and Evaluation Force (COMOPTEVFOR).

The SIF and CTB are staffed year-round by an expert engineering and evaluation team that provides test oversight and other services. The members have extensive TADIL laboratory and field experience.

The SIF and CTB conform to all relevant Department of Defense physical security requirements.

Features and Capabilities

SIF, COMBAT DIRECTION SYSTEMS DEVELOPMENT AND EVALUATION SITE (CDES), C2P LABORATORIES, AND RECONFIGURABLE LAND-BASED TEST SITE (RLBTS) CONVENIENTLY COLLOCATED

- Multi-capable ship Advanced Combat Direction System (ACDS) facility controls the JTIDS terminals in the SIF for development and integration evaluation (ACDS Block 0 and Block 1)
- Model 4 and Model 5 CDS programs available for testing (CV, LHD, CG, and LHA)
- C2P programs available for testing (Model 4 and Model 5 UYK-43 or Rehost)
- Common Data Link Management System (CDLMS) available for shipboard TADIL test configurations
- Air Defense Systems Integrator (ADSI) available to support Multi-Link and Intelligence interface testing
- Ship system simulation available for integration testing
- Multi-capable suite of operator consoles available, as well as other equipment necessary to run realistic operational scenarios
- Ship combat systems used for live multi-TADIL testing
- RLBTS available for C4ISR integration and interoperability testing of Over-the-Horizon Targeting (OTHT) systems (Global Command and Control Systems-Maritime in the Systems Integration Environment)

SIF CONNECTED TO REMOTE LINK-16, LINK-11, AND OTHER SUPPORT LABS

- Connectivity to F-14D, F/A-18, E-2C, AEGIS, and ICSTF (NSWC, PHD) combat systems laboratories supports on-line, real-time interoperability testing prior to the Navy's Link-16 Technical Evaluation
- Support available for up to eight remote facilities operating concurrently under scenario control. Multiple scenarios can be operated concurrently
- Remote JTIDS terminals are available via Data Link Gateway in Virtual Host/Virtual Terminal mode
- Normal wideband landline interconnection is available

THE SYSTEMS INTEGRATION FACILITY AND COMBINED TEST BED



CDES SHIPBOARD HARDWARE-IN-THE-LOOP CAPABILITY



CDES MULTI-HOST CONFIGURATION

EXTENSIVE JTIDS/MIDS TERMINAL FARM IN THE SIF

- JTIDS terminals
- MIDS Air LVT and Shipboard (MOS) terminal capability
- All terminals interconnected via 28 full-duplex channels
- Radio-frequency-propagation simulation for relative navigation testing (propagation delay and attenuation)



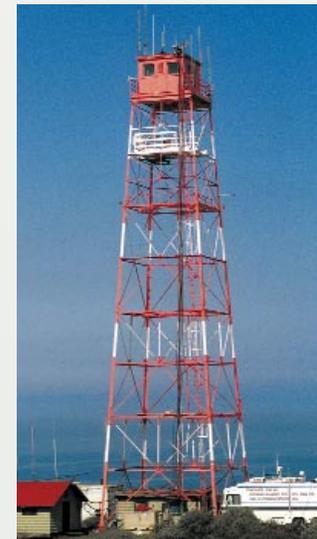
JTIDS CLASS 2 TERMINAL



MIDS TERMINAL



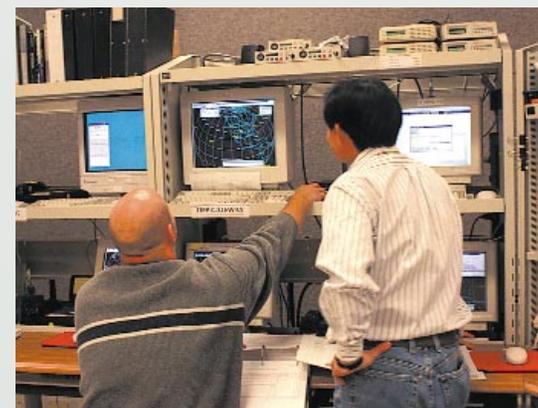
JTIDS ANTENNA



PEDRO TOWER

LIVE TRANSMIT/RECEIVE CAPABILITY

- Two Link-16 rooftop antennas located at SIF site
- Pedro Tower provides extended Link-16 range into Southern California operational area
- Capability to operate with live platforms in testing platform installation validation or other activities related to Fleet/Service support



SIF TEST CONTROL

S

SUPPORTING FACILITIES

- Data analysis facilities in SIF available to users
- Link test tools available in a JTIDS van for drive-up service, as well as in mini-racks
- Off-line advanced script generator with portable tools for user script definition available as needed
- Link-11 laboratory for multi-TADIL test support collocated with SIF



DATA LINK TEST TOOLS



DATA ANALYSIS FACILITY

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EXPERIENCED TADIL ENGINEERING AND EVALUATION STAFF

- TADIL engineering
- TADIL standards working groups
- Simulation and modeling
- Test and evaluation of TADIL and TDS systems
- TDS integration
- Test facility design and development

TESTING SERVICES AVAILABLE

- TDS-to-TDS interoperability testing
 - Multi-TADIL/multi-platform interoperability testing
 - TADIL network performance evaluation
 - TADIL trouble report testing
 - JTIDS/MIDS terminal functionality/specification testing
 - Pre-installation testing and checkout
 - Relative navigation performance evaluation
 - JTIDS terminal network load testing
 - New TADIL "proof-of-concept" analyses
 - EMI/EMC testing
 - Live Fleet/Service support
- Also available: Link-16 terminal mini-rack building/installation

FOR FURTHER INFORMATION AND SCHEDULING PROCEDURES, CONTACT:

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Reviewed and approved by

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Base Operations Manager

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