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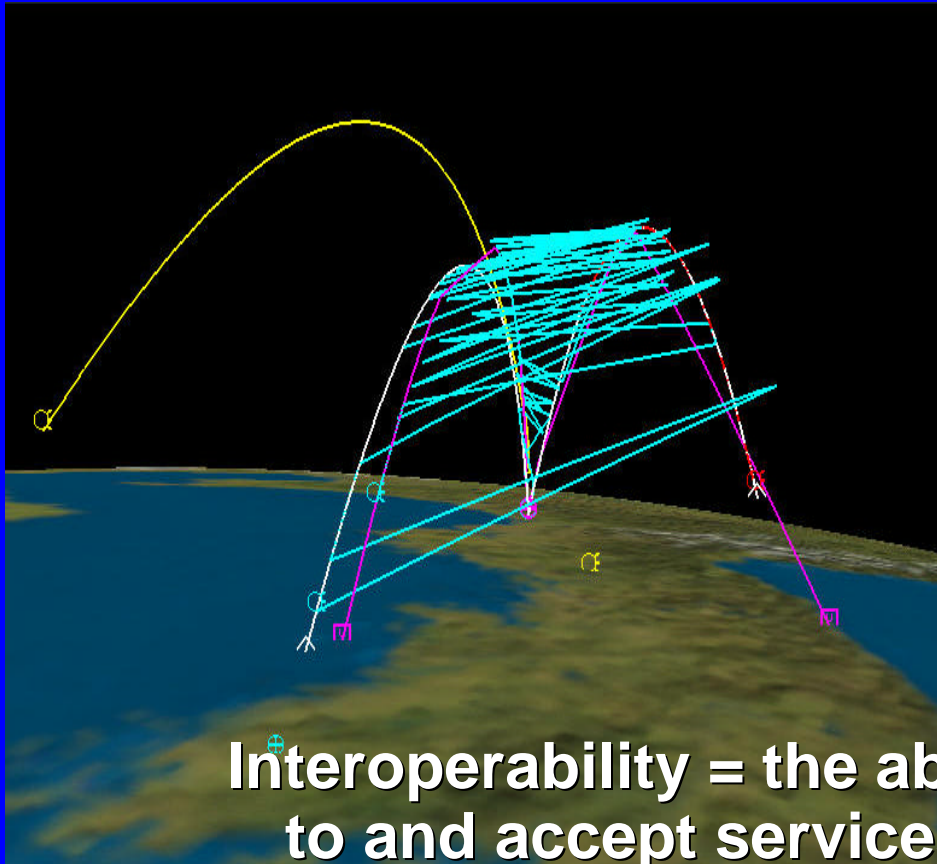
Interoperability Testing of Systems of Systems

**Presented to NDIA's
2003 Interoperability & Systems Integration Conference
3 April 2003
By Mr Denny Beaugureau
Acting Commander
Joint Interoperability Test Command
Fort Huachuca, AZ**



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Importance of Interoperability

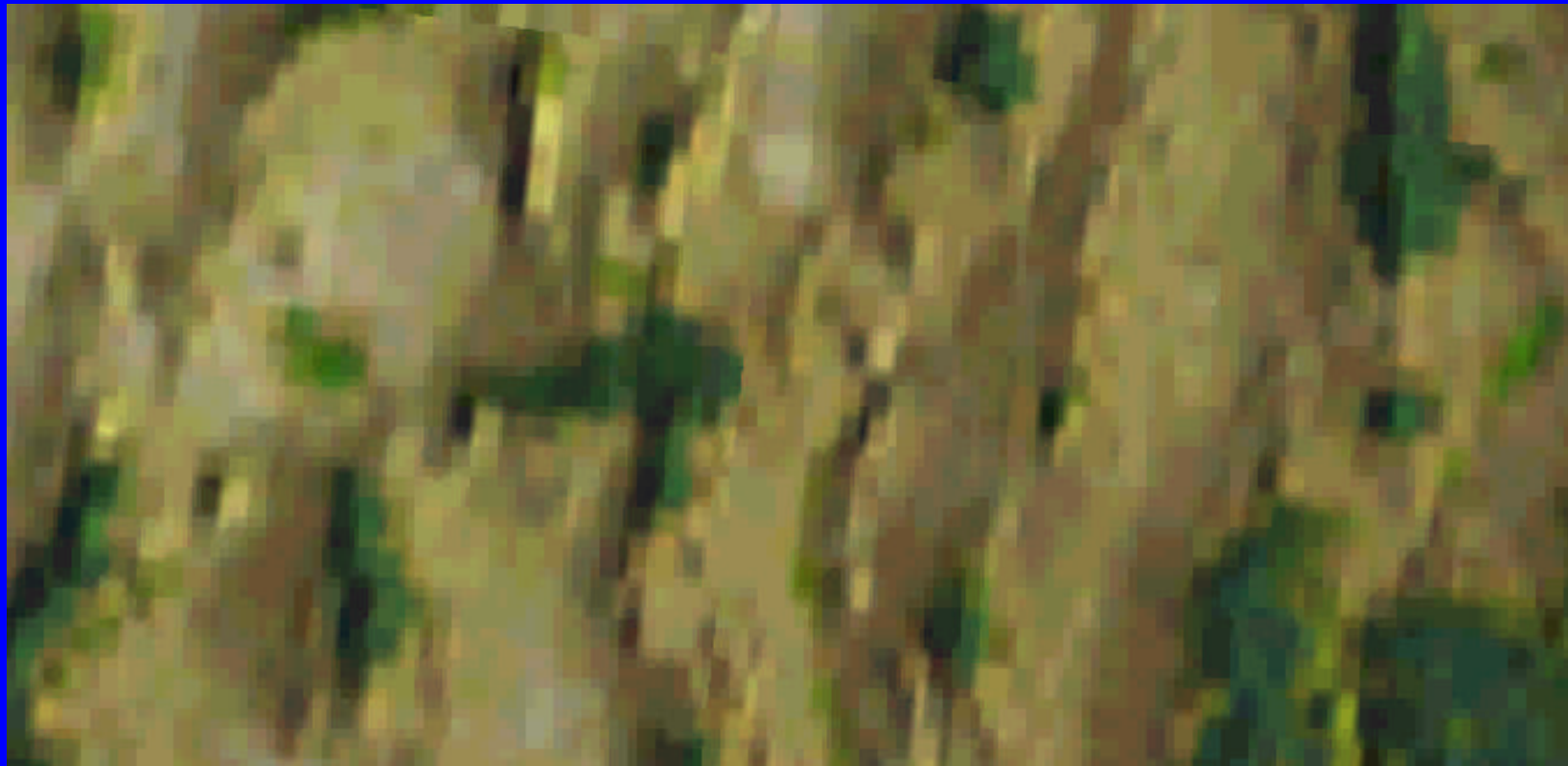


Interoperability = the ability to provide services to and accept services from other systems, units, or forces, and to use those services to operate effectively together.



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Another Example: Common Operational Picture





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JITC's Unique Roles



JITC reduces risk to the warfighter by ensuring interoperability throughout a system's life-cycle.

DOD's sole joint interoperability certifier

Operational Test Agency for many DOD elements

Major Range & Test Facility Base (MRTFB)

Executive Agent for testing (e.g., NIMA and NSA)

Direct interoperability support to the warfighter



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Joint Interoperability Directives

DODD 4630.5

Forces must have interoperable NSS and ITS.

DODD 5105.19

DISA shall ensure end-to-end interoperability.

CJCSI 6212.01B

JITC is the sole NSS and ITS joint interoperability certifier.

JCS Pub 1-02

Interoperability is the ability of systems, units, or forces to provide services to and accept services from other systems, units or forces, and to use the services so exchanged to enable them to operate effectively together.

DODI 4630.8

All NSS and ITS are for joint use and shall be certified by DISA in the acquisition process.

CJCSI 3170.01B

Mandates interoperability KPP for CRDs and ORDs.

Interim DOD 5000 series

JITC shall certify that NSS and ITS meet applicable requirements for interoperability and supportability.



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Why certify?

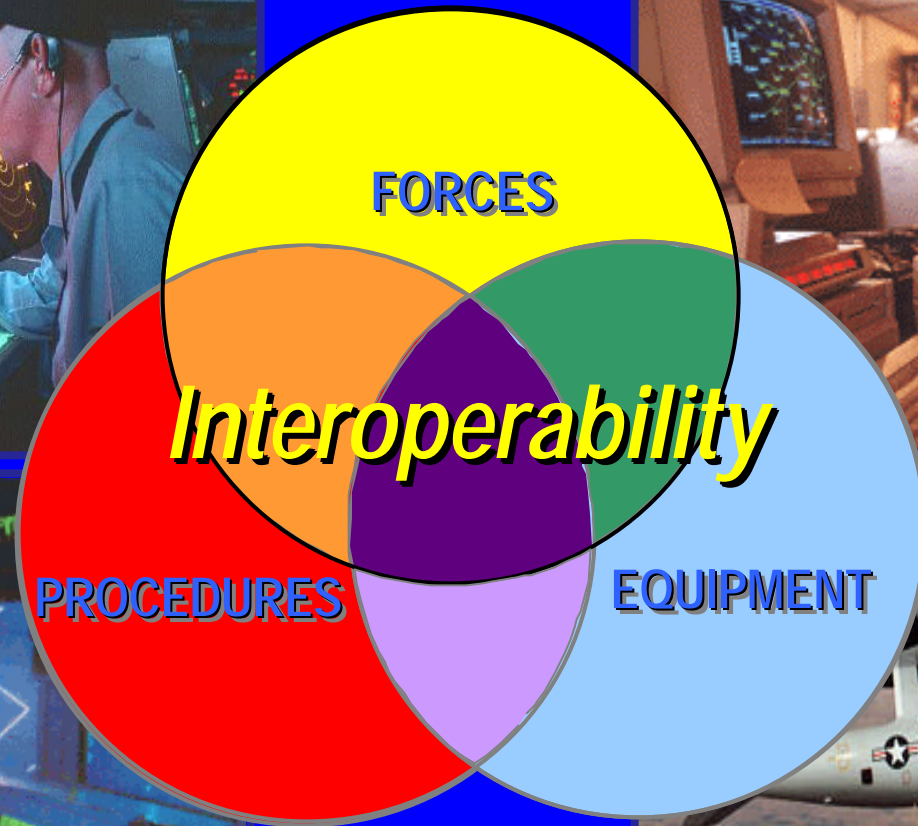
- Interoperability allows people, procedures and equipment to operate together effectively and efficiently
- Certification ensures that a system meets user requirements for joint interoperability





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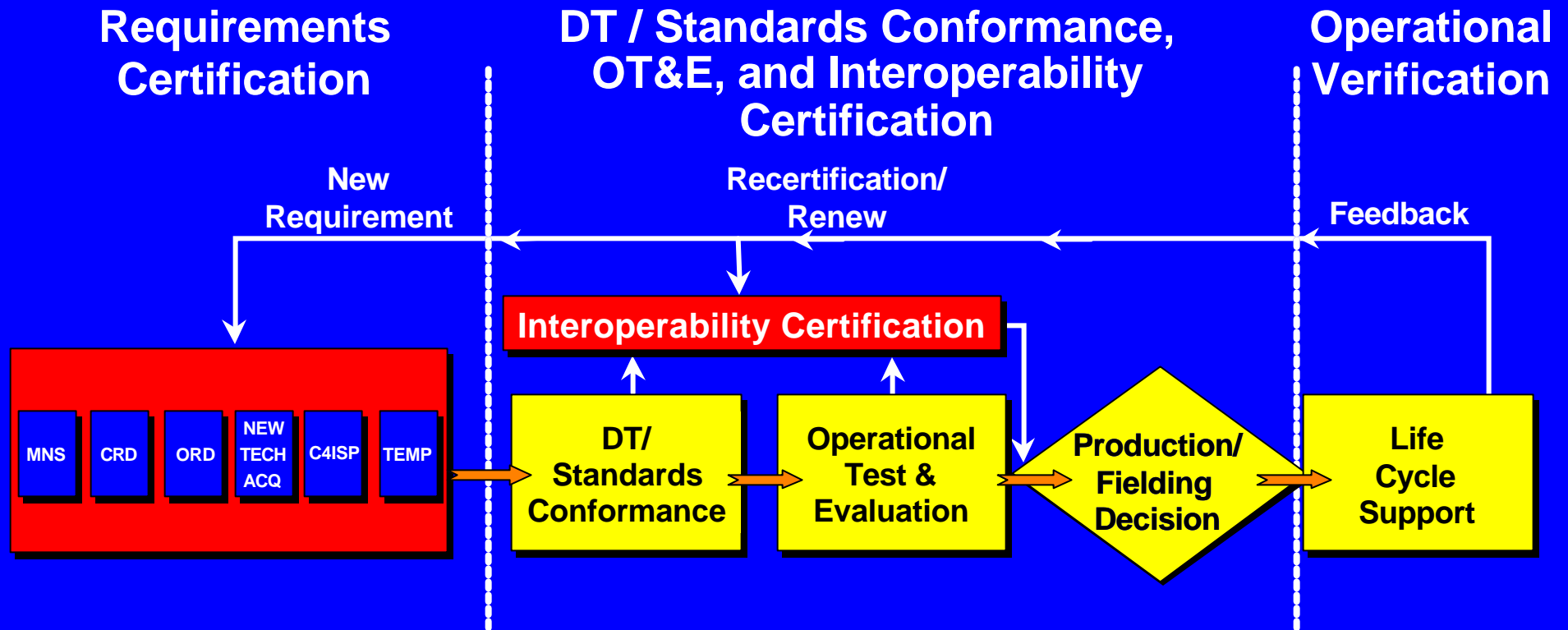
JITC's Interoperability Perspective





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System Life-Cycle Certification Process



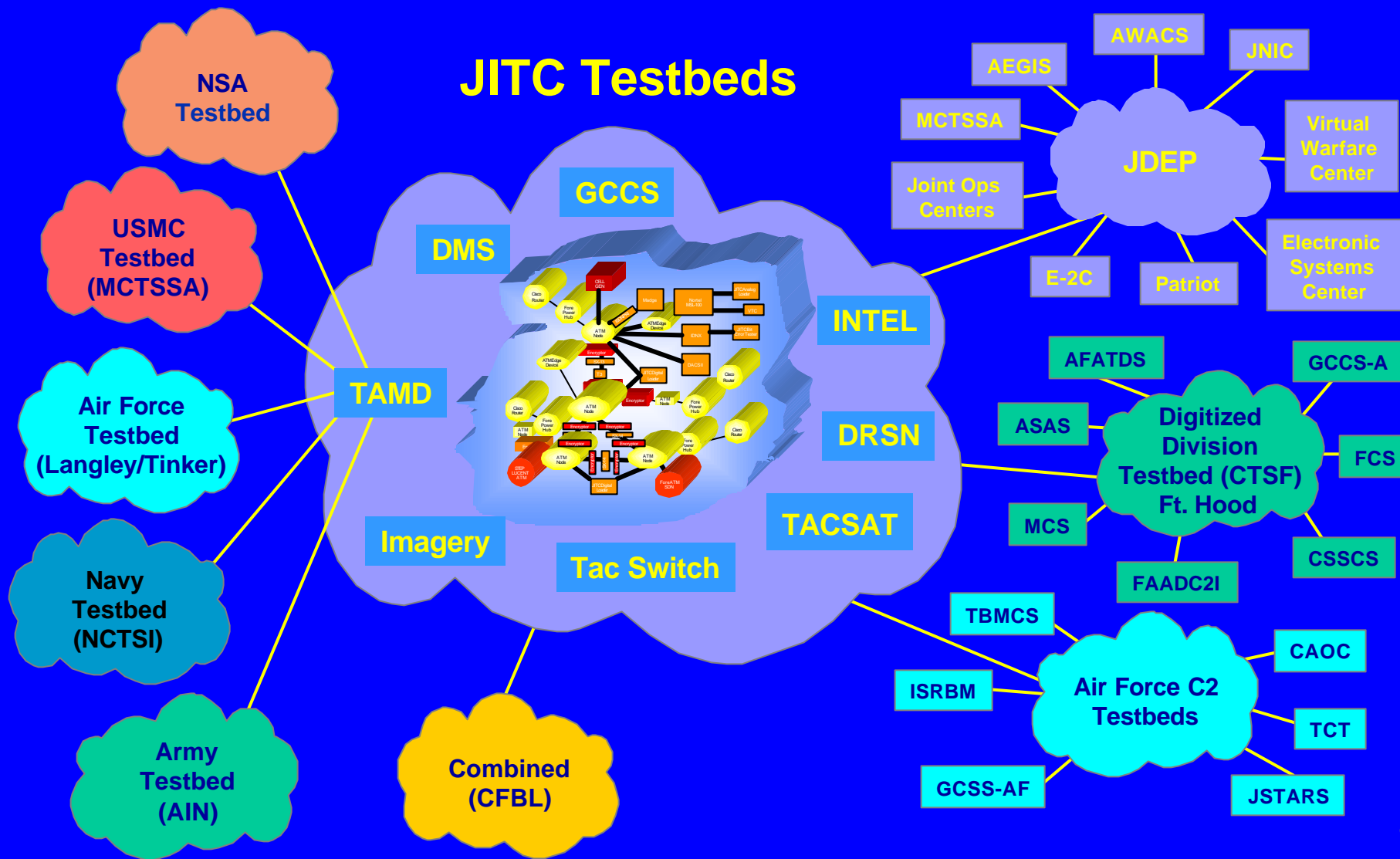
“Interoperability must be a life-cycle commitment.”

Lieutenant General John L. Woodward, Jr., former Director, Command, Control, Communications and Computer Systems Directorate (J-6), Joint Staff



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Systems of Systems Testing





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Contingency and Exercise Support



24/7/365 Hotline Support: 1-800-LET JITC (1-800-538-5482)¹⁰



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Conclusions

- **Interoperability is vital enabler of combat effectiveness.**
- **Interoperability of systems of systems will remain a complex and evolving entity – can't achieve it "once and for all."**
- **Accomplishments will require extensive partnering and resource sharing for engineering and disciplined testing.**
- **JITC is already a partner, and determined to be more so with key**
 - **distributed infrastructure,**
 - **broad functional expertise,**
 - **operational experience.**





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JITC's Global Reach

DOD

AIR FORCE
ARMY
MARINES
NAVY



CINCs
DDR&E
RESERVE
NAT'L GRD

SERVICE OTAs & PMs
BMDO, DeCA, DFAS, DIA, DLA,
NIMA, NSA

INDUSTRY



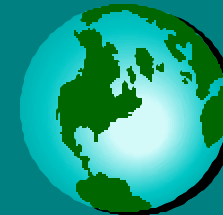
3COM, AT&T, ESI, FORE SYSTEMS, GE,
GENERAL SIGNAL TECHNOLOGIES,
GTE, KODAK, LOCKHEED,
LUCENT TECHNOLOGIES, NET,
NORTHERN TELECOM, NORTHROP,
PHOTOTELEESIS, RAYTHEON,
SIEMENS CORP, TIMEPLEX,
TITAN CORP, OTHER VENDORS

FEDERAL



DEPARTMENT OF ENERGY
DEPARTMENT OF JUSTICE
DEPARTMENT OF STATE
DEPARTMENT OF AGRICULTURE
FEDERAL BUREAU OF INVESTIGATION

ALLIES



AUSTRALIA, SINGAPORE,
THAILAND, KOREA, JAPAN,
NATO, UNITED KINGDOM,
ICELAND, NORWAY,
PfP COUNTRIES



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JITC's Areas of Expertise

- **Asynchronous Transfer Mode (ATM)**
- **Combined Interoperability**
- **Command and Control (C2)**
- **Defense Information System Network (DISN)**
- **Defense Message System (DMS)**
- **Defense Red Switch Network (DRSN)**
- **Defense Travel System (DTS)**
- **Department of Defense Intelligence Information System (DODIIS)**
- **DFAS Corporate Information Infrastructure (DCII)**
- **Electronic Business / Electronic Commerce (EB / EC)**
- **Global Command and Control System (GCCS)**
- **Global Combat Support System (GCSS)**
- **High Frequency Test Facility (HFTF)**
- **Information Assurance (IA)**
- **Joint Theater Air & Missile Defense (JTAMD)**
- **National Imagery Transmission Format Standard (NITFS)**
- **National Missile Defense (NMD)**
- **Satellite Communications**
- **Security Management Infrastructure (PKI and EKMS)**
- **Tactical Communications**
- **Tactical Digital Information Link (TADIL)**
- **Telemedicine**
- **US Message Text Format (USMTF)**
- **Unmanned Aerial Vehicle (UAV)**



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Demos and Exercises

Joint Warrior Interoperability Demonstration (JWID)

- Coalition interoperability
 - Multiple Security Levels
 - Logistics Systems
 - Language Translators
 - Situational Awareness
 - Network Vulnerability
 - Network Management
- Technical Interop Assessment
- Warfighter Utility Assessment

Distributed Interoperability Communications Exercise (DICE)

- Joint interoperability
 - Voice Switches
 - Data Systems
 - Messaging Systems
 - Transmission Systems
 - Video Teleconference
- Operational units in doctrinally deployed joint network
- Comms training in a JTF environment