46 Test Squadron
Distributed Test Overview
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Overview

• Purpose
• Distributive Interoperability Testing
• Test Resources
• Enabling Connectivity
• Distributed Test Summary
• A Success Story
• End-to-End Interoperability of Testing
• Future Distributive Interoperability Testing
Purpose

- Describe the 46 TS testing capability

- Describe distributed C4ISR developmental interoperability testing

- Discuss one recent test event
Distributive Interoperability Testing

• 46 TS thoroughly analyzes Joint Mission Thread (Representative Environment) / SoS type scenarios
  – Unique access to platforms/systems
    • SoS provides more than just lab testing of interfaces
      – HW/SW Platforms + Operator + Environment = Realism
    • SPO/SAF/Joint funded environments
  – Leads to overall risk reduction for AFSIT, JITC & OT while expediting a better product to the warfighter
  – Warfighter’s On-Call Data Link SME with in-theater representation

No Technical surprises to OT / Warfighter
Operational Facilities (OPFACs) and Unique Resources

OPFACS:
- F-15C Suite 6M, F-15E Suite 6E (or 7E)
- F-16 Avionics Test Station (ATS) M4.3
- A-10C Suite 6
- E-3 AWACS 40/45 (build 8), E-8 JSTARS IR-5
- TACP-CASS, BAO, SATSIM, ASOC Gateway
- BACN – expected this year!

Test Tools:
- Terminals (Class II, MIDS variants)
- Gateways (JRE, GM, ADSI, ROBE)
- Extensive test tools (1553/IP/SADL monitor/DEASIL/InterTEC)
- AOC, TBMCS, DCGS, FaNS, GCN
- C2 Performance monitoring
- Forward Deployed Data Link Interoperability LNO
- Distributive Ops Center (DOC), InterTEC TCC
How a Test Planner Should View JMETC

Hardware-in-the-Loop (HWIL) Availability

Sites in Hawaii
PMRF: Bldg 105
MHPCC

All linked by JMETC
Distributed Test Summary

• Some distributed tests conducted in DTF

  – **Bold Quest** (Nellis/29 Palms/NTC, MCAS Cherry Point)
  – Integral Fire
  – Persistent Fire – Warplan Warfighter Forwarder II
  – Joint Battle Space Dynamic De-confliction (JBD2)
  – InterTEC
  – **Emerald Warrior**
  – **JEFX** (Nellis AFB)
  – Spirit ICE (Tinker/Whiteman AFB)
  – **AGILE Fire**
  – B-1 FIDL Interoperability Ground Test
  – JADOCS
  – SBIRS

• Since 2005: over 20 test events; includes 4 major events per year
Battlefield Airborne Communications Node (BACN)

- Provides a solution to the net-centric warfare challenges
  - Voice/data links improving command and control (C2)
  - Interoperability
  - Situational awareness (SA)
  - Information access

- Provides a beyond line-of-sight communications relay, bridge, and range extension for ground forces and supporting aircraft

- Payload supports
  - MIL-STD 6016/7
  - MIL-STD 6020
  - MIL-STD 3011

- BACN JUON
  - Test connected live platform with Eglin, Edwards and China Lake
  - Live-fly DT and AFOTEC-sponsored Operational Utility Evaluation
Distributed Test Example

DTF Assets
• Test Control Center
• F-16 OPFAC
• F-15E OPFAC
• BOSS

Datalinks Test Facility
Eglin (Bldg 85)

SDREN / JMETC

China Lake, CA

F-16 OPFAC

Link 16

BACN Platform

F-15E OPFAC

BOSS

Edwards AFB, CA

Pt Mugu, CA

Tinker Assets
• AWACS SIL

Tinker AFB, OK

Distributed Test Example
Future
Distributive Interoperability Testing

• Anticipated large scale events such as BQ/EW/JEFX/AGILE Fire to continue

• Emphasis on mainstreaming Distributive Integrated Testing (DT/OT/CT – AFSIT/JITC)
  – Conserve resources / reduce cost / more responsive
  – Offers a more robust (realistic) test environment
  – Instrumented systems that enables thorough analysis

• 46 TS to remain disciplined, independent gov’t SME
  – Partnerships with all Services (USAF, USN, USMC, USA)

• Distributed test potential benefits:
  – Early HWIL/SWIL testing = Early ID of problems
  – Augment live test with distributed Live and HWIL systems
Distributive Testing with HWIL/SWIL will increase and is the Future of Joint Interoperability Testing
Questions