

# Standards Certification, Evaluation and Regression Test (CERT) Tool

*Combat Air Forces Distributed Mission Operations*



**C**ombat Air Forces (CAF) Distributed Mission Operations (DMO) is the foundation for revolutionizing training for the U.S. Air Force.

As the operations and integration contractor, Northrop Grumman is implementing a standards-based architecture that supports distributed, daily training among CAF DMO training centers. This global architecture facilitates inter-team training for more than 30 high-fidelity centers (e.g., F-15C, F-16CJ, E-3, E-8).

The CAF DMO training system is continually evolving to include new training platforms, sites and system capabilities needed to support inter-team training requirements.

Before new training systems can be integrated into the CAF DMO environment and its network, their compliance with platform standards must be verified. As part of this process, Northrop Grumman and training system providers work together to verify and document the systems' level of compliance with CAF DMO standards. This process, while effective, does not scale to meet the integration efficiencies required for this diverse training solution.

To meet CAF DMO's aggressive integration requirements, a new integration paradigm is needed.

### **Standards Certification, Evaluation and Regression Test (CERT) Tool**

The CAF DMO certification process includes rigorous, comprehensive verification of training system capabilities to ensure interoperability of training partners on the DMO Network (DMON).

To further improve integration efficiency and expedite system verification, Northrop Grumman has devel-

oped the Standards CERT Tool. This tool allows Northrop Grumman and training system providers to perform automated, objective and repeatable analysis when assessing compliance with CAF DMO standards. The Standards CERT Tool also enables real-time inter-site integration and event analysis to troubleshoot and monitor data compliance.

### **Capabilities**

The Standards CERT Tool replaces several test verification methods that typically require manual inspection, analysis and confirmation of data to ensure conformance to the CAF DMO interoperability standards.

The Standards CERT Tool automates analysis of DIS 1278 PDU-level data. The tool supports interactive sequencing of complex test and verification scenarios. It performs standardized, repeatable test verification across all training systems.

Supporting all CAF DMO requirements, the Standards CERT Tool operates with unclassified and secure systems. The tool supports test execution across multiple sessions, systems and sites. Its exact and detailed reports specify non-compliant data. Further, the Standards CERT Tool facilitates tracking and closure of system problem reports.

### **Future Applications**

The Standards CERT Tool is readily expandable to support a variety of functional areas. It can be integrated seamlessly into many training processes:

- Pre-training configuration analysis for mission setup
- Real-time notification of non-compliance during training
- Error detection in CAF DMO system problem reporting
- Enhanced analysis and verification of IEEE 1278-specified standards data
- New user protocols and interfaces (e.g. HLA, TENA)

### **System Requirements**

- MS Windows 2000, XP, Server 2003, Vista, or Server 2008 OS
- Microsoft.NET framework (included)

### **Standards CERT Tool Benefits**

The Standards CERT Tool offers many important benefits:

- Reduces the time, cost and effort required for approval of systems to train on the CAF DMON
- Serves as an objective, verification reference for all training systems
- Reduces the cost of integration for system-wide upgrades
- Simplifies the process of verifying training systems
- Shortens the timeline for system integration of DMON training
- Identifies unexpected changes in the MTC configuration or interface
- Supports regression testing of current and earlier CAF DMO standards criteria
- Supports the evaluation of joint service systems and models
- Mitigates the need for security accreditation before system verification

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