



CENTRAL TECHNICAL SUPPORT FACILITY

An Approach to Service Level System of Systems Assessment

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Outline



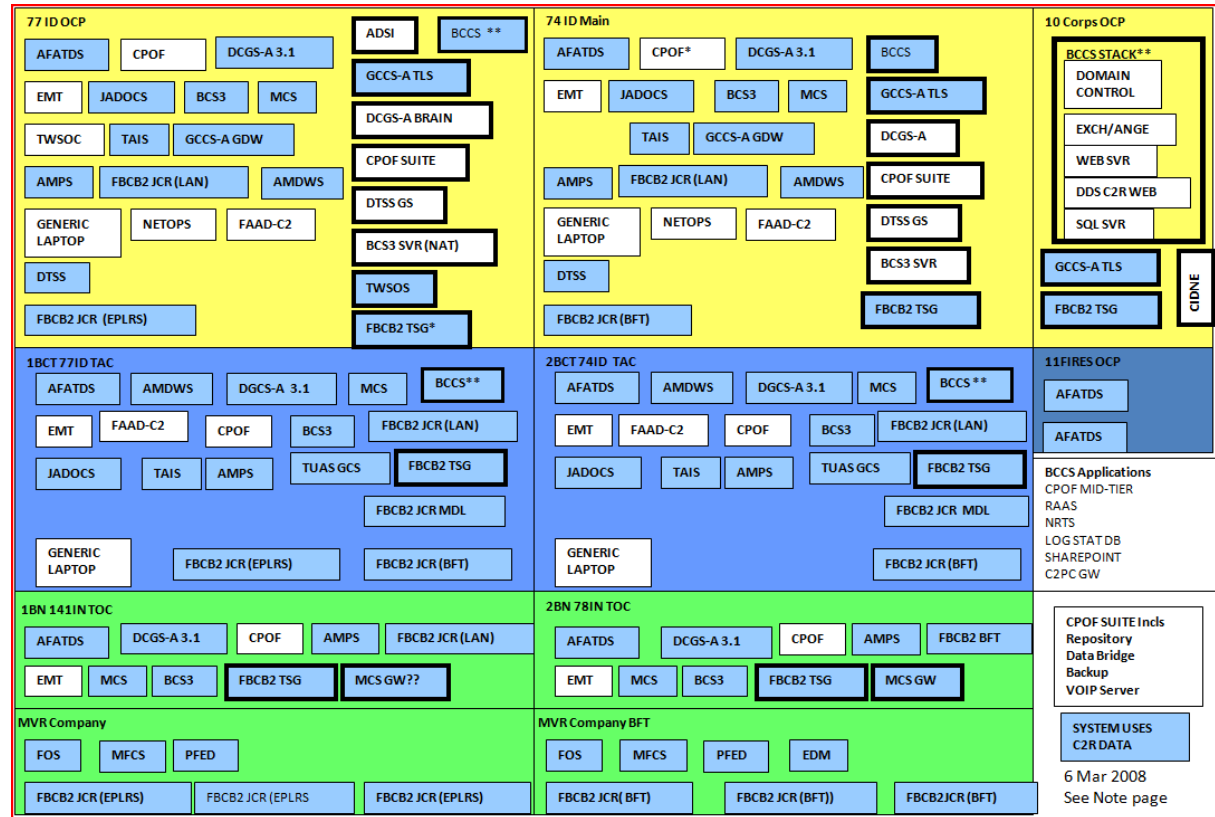
- The Army's tactical System-of-Systems (SoS) challenge
- The CTSF: SoS integration and testing
- Applying System Engineering (SE) to SoS
- CTSF-initiated SoS SE pilot



The Army's Tactical System-of-Systems (SoS) Challenge



- Many individual Program Managers (PMs)
 - Geographically distributed across CONUS
 - Many systems that must interoperate: currently 80+
- Complex tactical network architecture
- Lack of Army-wide SoS engineering
 - Requirements and standards
 - Architecture
 - Documentation



Army cannot afford to defer discovery and remediation of SoS problems to final SoS baseline integration and test!

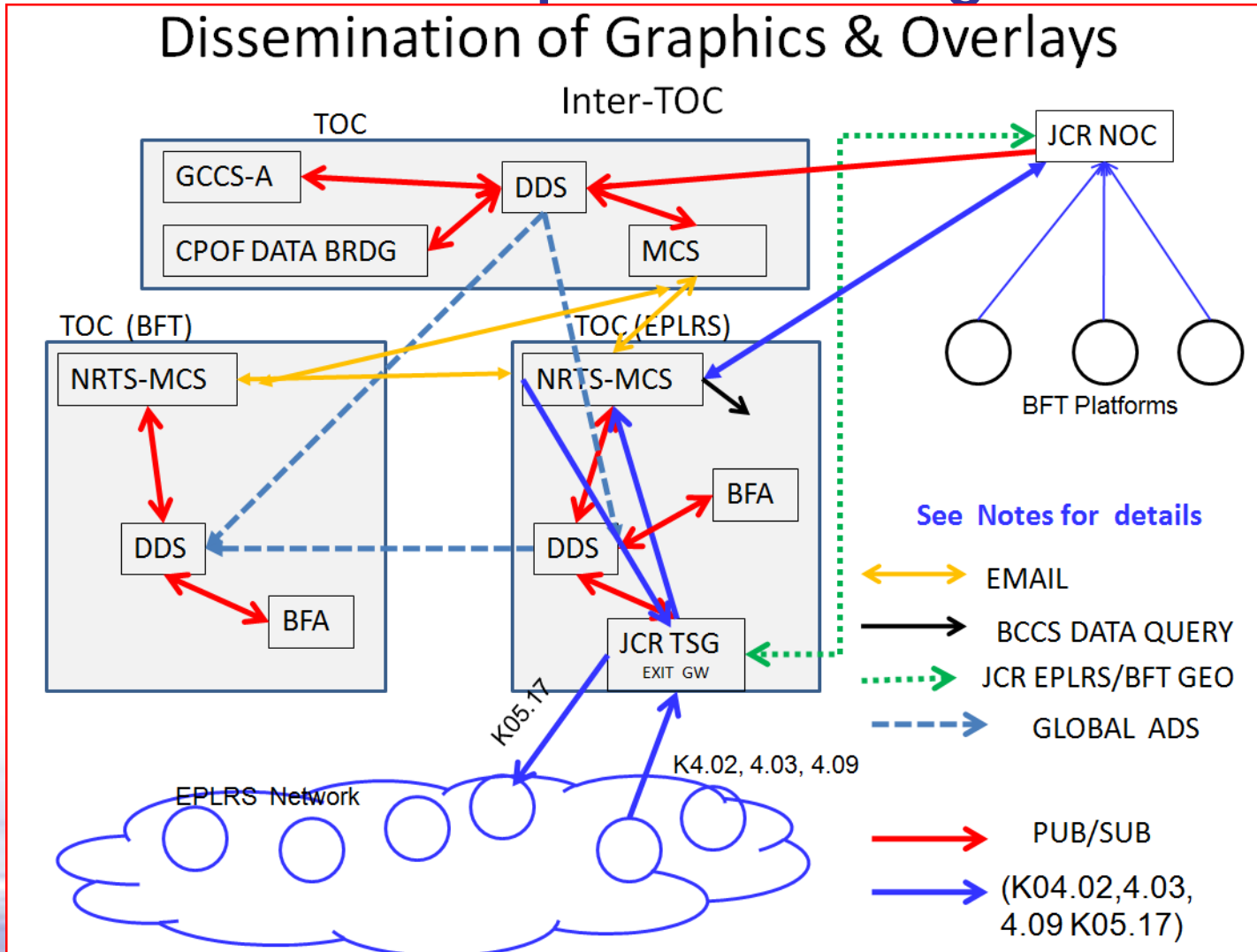


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Testing SoS Interoperability: A Complex Challenge



Dissemination of Graphics & Overlays





CTSF Vision



To become a customer valued organization ensuring the best interoperable net-centric C4I capabilities are available to US Army, Joint and Coalition Warfighters.

CTSF Mission

The CTSF provides a unique scalable environment, with skilled personnel, using qualified processes to support the DoD's net-enabled strategic vision by executing configuration management, systems of systems integration, and interoperability certification testing for Army and Joint C4I providers.



Bottom Line: “Achieving Interoperability for the Army”



SOS Focused CTSF Process



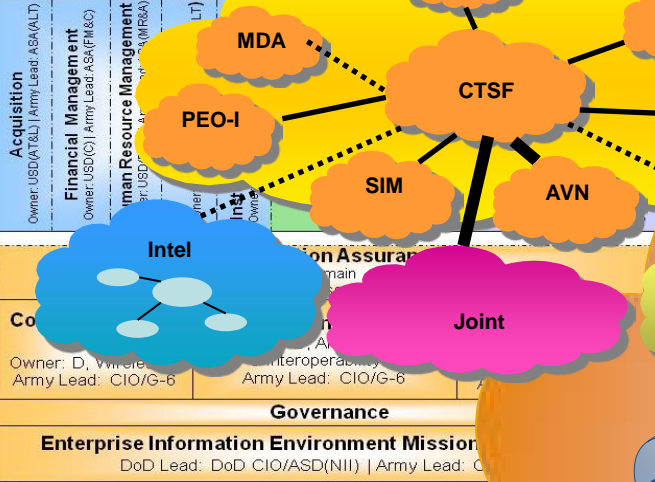
Draft Army Alignment with GIG ES Governance

Business Mission Area (BMA)
DoD Lead: USD(C) | Army Lead: USA

Warfighting Mission Area (WMA)
DoD Lead: USD(I) | Army Lead: G-3/5/7

National Intelligence Mission Area
DoD Lead: USD(I) | Army Lead: G-2

Governance



STAKE HOLDERS/CUSTOMERS

STRONG CONFIGURATION MANAGEMENT

METRICS / ENTRANCE & EXIT CRITERIA

Warfighter Support

Field Support Fielding

Test Report Certification

CRR #1 Test Fix Test

SOS Integration

Developmental Testing & Integration

Capability

CTSF Process

CC LCMC



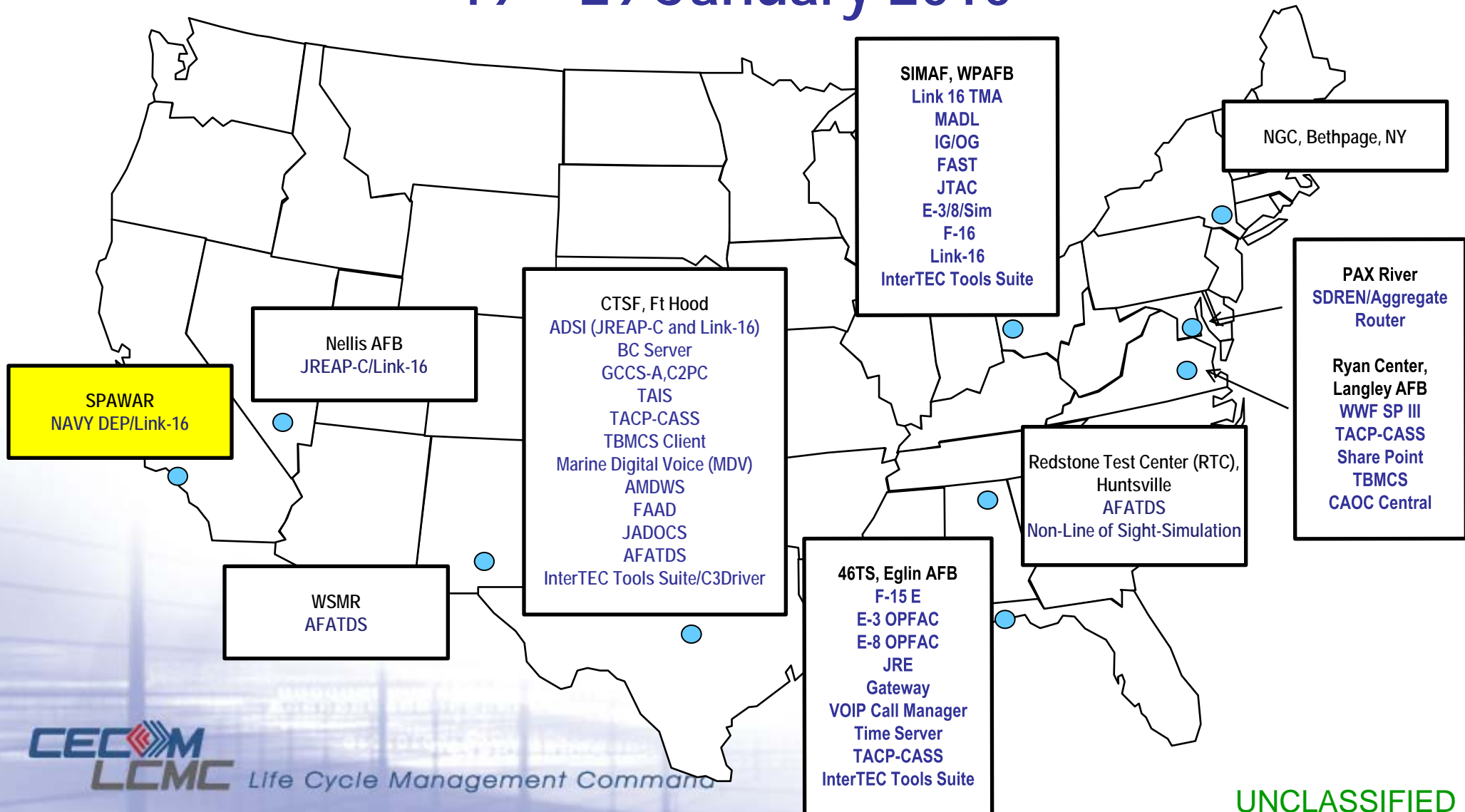
CTSF Core Missions



- Configuration Management
 - Maintains Land Warnet/Battle Command (LWN/BC) SW Baseline
 - Maintains CIO/G6 Certified Baseline
 - Configuration support to Program Managers
 - Standard process and control for distributed integration and testing
- Systems of Systems Integration Support
 - Network Engineering support to training and deployed units
 - Interoperability integration support to PMs SW development
 - Army Digital Interoperability Subject Matter Expertise
 - Current and future LWN/BC SW Integration facilities and labs
- Army Interoperability Certification (AIC) Testing
 - Certification testing of Information Technology/National Security Systems
 - Interoperability Capability & Limitations
 - Deployable Test Teams to customer test locations

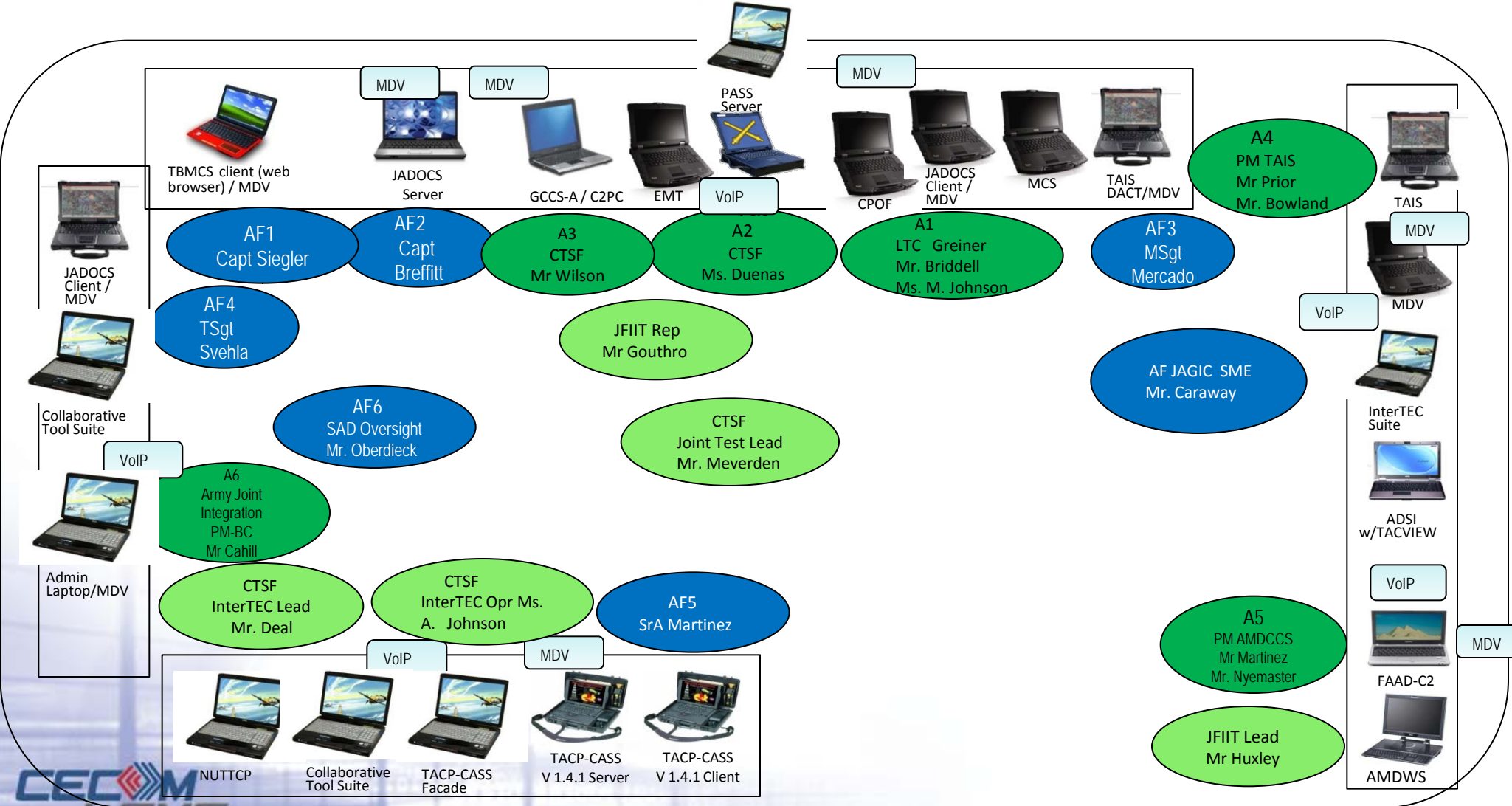


Example: Agile Fires MAINEX Event 19 – 29 January 2010





Example: Agile Fires MAINEX Event CTSF Joint Lab/ JAGIC

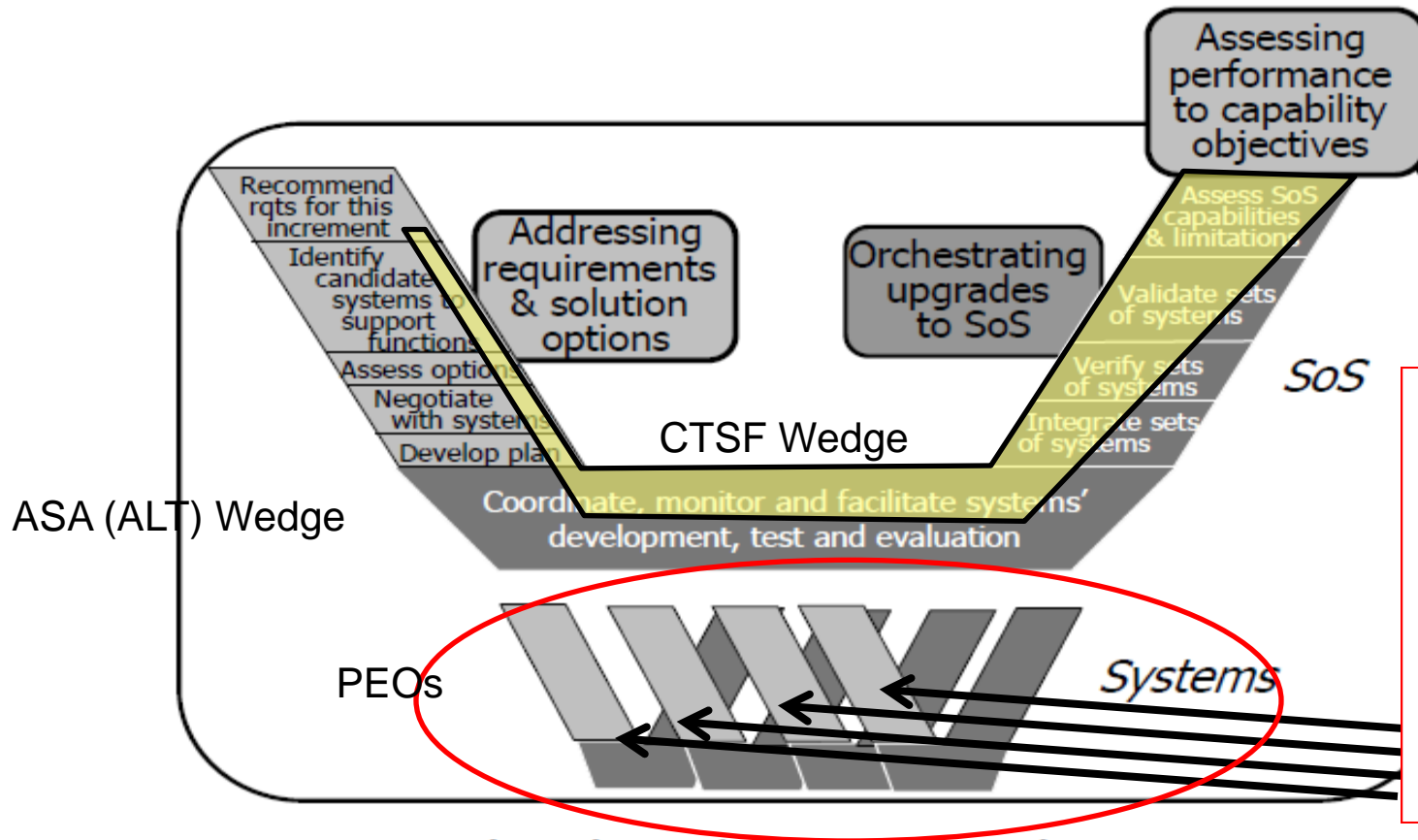




Applying SE to SoS: the SoS SE "V"



Systems Engineering Guide for Systems of Systems



Individual System Eng V

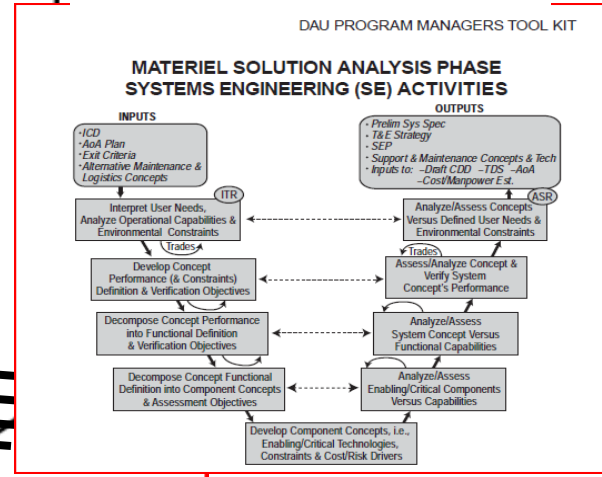


Figure 4-16. The Multi-Level SoS/Systems Implementation Process



CTSF-Initiated SoS SE Process Pilot



- Assess the current tactical system baseline in light of the SoS SE guide:
 - Artifact Gap analysis
 - Process Gap analysis
 - Prototype artifacts for the SoS level
- Develop recommendations for ASA(ALT) and PEO SoS SE efforts
 - How could we improve the development of future SoS baselines?
 - How might CTSF be involved?
- Develop recommendations for refining the SoS SE guide based on the assessment and SoS integration experience



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