System of Systems Common Operating Environment (SOSCOE) Support to Net Centricity

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Command BCT system elements are commonly developed to integrate FCS platforms into a larger geographically dispersed yet Functionally integrated machine

Battle Command incorporates C2, Intelligence, Surveillance, and Reconnaissance (ISR), Embedded Training, and Sustainment

Net ready information management element of service based architecture - SOSCOE

Heterogeneous transport layer enables robustness

Networked battle command, embedded training, and supportability developed Technical View (TV-1) integrated into SoS level TV-1 standards supporting integration
NCES (Increment 1): High-bandwidth Reliable Network

- NCES focused on providing enterprise services running within a **high bandwidth reliable network infrastructure**
  - Capabilities are **server-based**
  - Leverages **centralized computing paradigm**
  - Emphasis on ‘shared spaces’ **presumes uninterrupted access** to those spaces
- Acquisition Strategy
  - Adopt before Buy, Buy before Create
  - Acquire via Managed Service Providers

SOSCOE: Low-bandwidth Ad Hoc Network

- SOSCOE focused on providing reusable software infrastructure components for Platform and Battle Command Applications on a **Bandwidth Constrained Ad Hoc Network**
  - SOSCOE must support decentralized **real-time and safety-critical applications**
  - Emphasis on managing **QoS over radio networks**
  - SOSCOE makes wide use of “Proxy” notion for maintaining **seamless communications** with the GIG at WIN-T POPs
SOSCOE Architectural Concept

• SOSCOE is a “toolset” of Infrastructure Services that provide a Service Oriented Architecture operating environment for FCS Applications

• Although each Edition may require unique implementations, the Application Interfaces (APIs) will conform to a set standard

Standard Edition

Real Time Edition

Micro Edition

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FCS Battle Command Compose-able Architecture Drives the Use of TINEX

TINEX is a “workflow engine” that leverages the Discovery and Dissemination to Minimize network traffic and software execution flexibility

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Task Integrated Network (TIN) “Thread” Application Services to create desired Effects

TIN Formation
Apply Knowledge, Judgment, and Analysis to Understand the Situation

TINs provide adaptable “script” to efficiently implement services

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SOSCOE is Incrementally being Developed And Fielded

Software Development Builds

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SOSCOE 2 Year Build Cycle

Software Development Methodology is based on IEEE 12207.2 Evolutionary Model

SOSCOE Releases Software on a yearly cycle

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Summary

• SOSCOE provides the Infrastructure for the Tactical Domain supporting Net Centric Operations paradigms
• SOSCOE is being Developed by a Team of Boeing, SAIC and 34 other companies
• SOSCOE Development Cycle is 2 years with yearly Releases
• SOSCOE is available via Distribution Agreement and SLA under Government Purpose Rights (GPR)
• SOSCOE Build 1.8 consists of 95% COTS/Open Source or a Total of 78 products
  – 14.7M SLOCS delivered

SOSCOE is based on a set of Standardized APIs and based on COTS/Open Source, modified and developed software

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