FUTURE COMBAT SYSTEMS



One Team-The Army/Defense/Industry

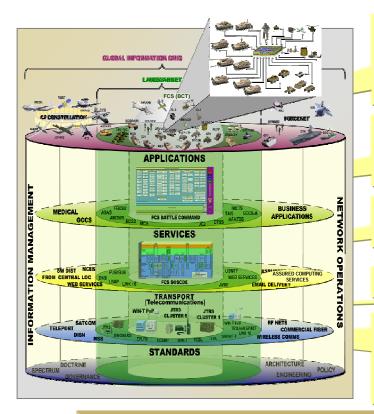
System of Systems Common Operating Environment (SOSCOE) Support to Net Centricity

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FCS Layered, Networked Architecture



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

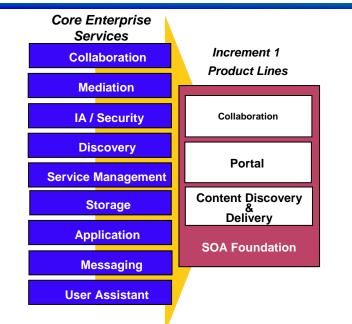
Networked battle command, embedded training, and supportability developed Technical View (TV-1) integrated into SoS level TV-1 standards supporting integration

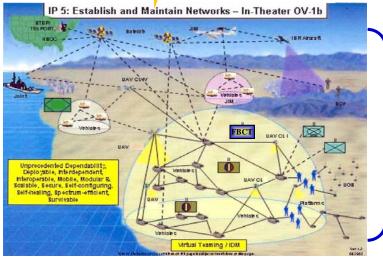
Integrated Architecture Provides Design-Phase Flexibility and Tactical Adaptability For The Networked FCS (BCT) Approved for Public Release, Distribution Unlimited, TACOM 01 Mar 2007, case 07-090

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SOSCOE & NCES - Different Environments







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

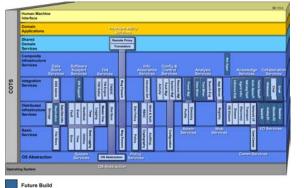
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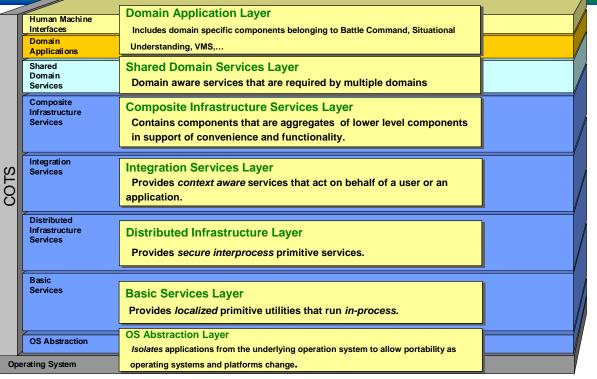
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•SOSCOE is a "toolset" of Infrastructure Services that provide a Service Oriented Architecture operating environment for FCS Applications

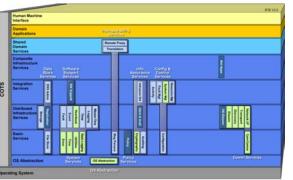
•Although each Edition may require unique implementations, the Application Interfaces (APIs) will conform to a set standard

Standard Edition

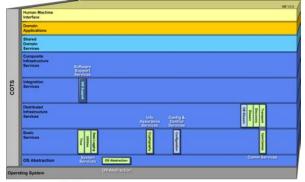




Real Time Edition







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



					Warfighter I	Machine Inter	rface				
WMI Services		LDSS		Planning & Preparation		Mission Execution		PS-MRS		Network Management	
Presentation Builder	Visualizer	Maintenance Manager	Maintenance Planner	Airspace Planner	Plan Assessor	Incoming Order	Action Requestor	FPSIM	Consumption	Network Planning	Configuration Manager
Presentation Tailor Presentation Manager	Core APIs Collaboration WMI	Supply Manager Distribution Manager	Supply & Distribution Planner	COA Planner Sensor Planner	Ground Space Planner	Processor Policy Editor Order	Task Organizer Notification	Reasoner Maintenance Reasoner	Reasoner LRU Interface	Policy Manager Spectrum Manager	Integrated Event Correlation Fault
Logon Manager Role	Primitives Translation Interface Report	Force Health Protection Manager	Force Health Protection Planner Human	Objective Planner Maneuver	Fires & Effects Planner Comms	Report & Authorizer MGV Remote	Unmanned Payloads Control UAV Control	Anomaly Detector Soldier Interface	Data Collection Service	Performance Manager Key	Monitor Accounting Manager
Manager Agent Authorizer Terminal	Generator QOS Manager Window	Human Resources Planner C2 Common	Resources Manager Commander/ Soldier	Planner Survivability Planner Terrain	Network Planner Security Planner	Operations Unattended Munitions Control	UGV Control UGS Control	Decision Consumption Model Generator	Accuracy Simulated Fault Generator	Management Interface Adapter Management	
Emulators Operator/ Account Manager	Control Interface Intelligent Operator	Readiness	Support Inderstanding Situation	Analyzer Rehearsal Services Simulation	Air Defense Planner AAR Services	Airspace Control Fires & Effects	Ground Space Control	Data Management Decision Accuracy	FPSIM Generator	System Picture Sensor Data Management SDM Kernel (External Control, Sensor Arbitration	
D/S Interface Monitor		Monitor Weather Service	Refinement Threat			Control Control		Evaluation Simulator		SDM Sensor Framework (Plug-in Control, Monitoring	
Training Common Components		SU Toolset Fusion/	Refinement SU Presentation			Fusion Engine	Distributed Fusion Manager			Sensor Plug-ins	Non-Organic Sensor Plug-ins
		Process Refinement Battle State Assessor	Battlespace Object Priority Manager			Exploitat	ion Tools			SDM	Utilities
				Ta	sk Integratio	n Network					
					SOSC	OE					

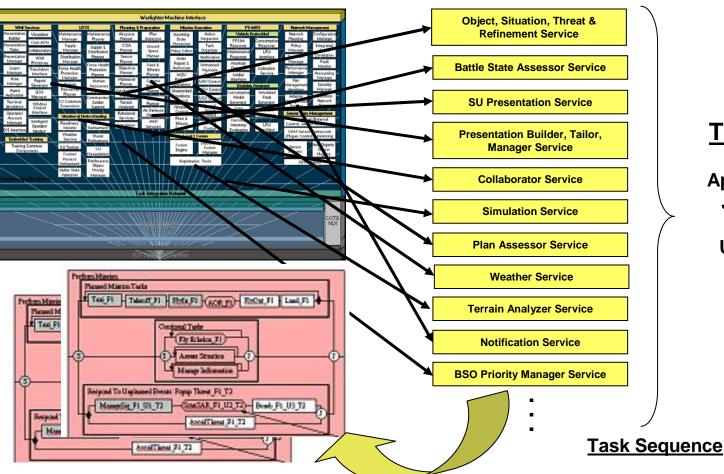
TINEX is a "workflow engine" that leverages the Discovery and Dissemination to Minimize network traffic and software execution flexibility

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





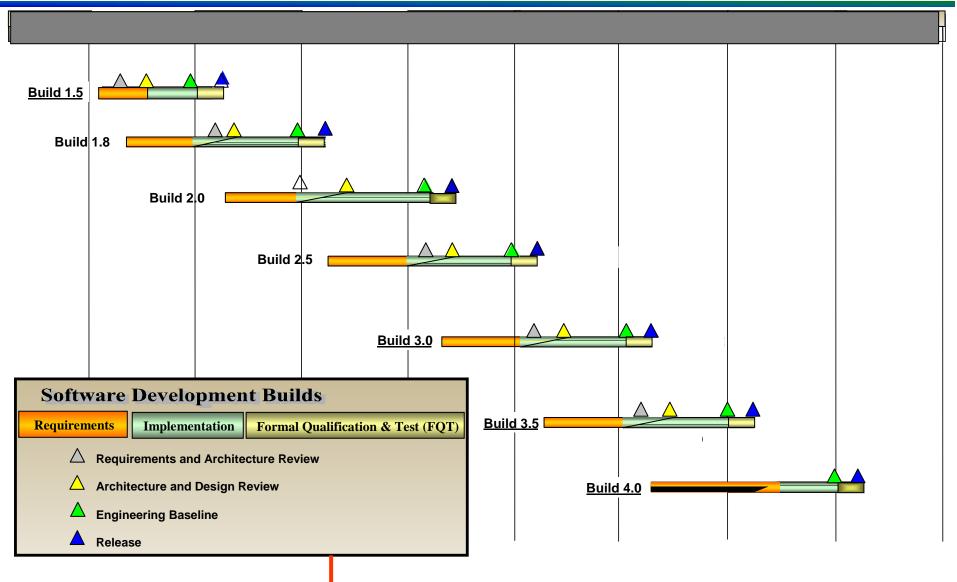
TIN Formation

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



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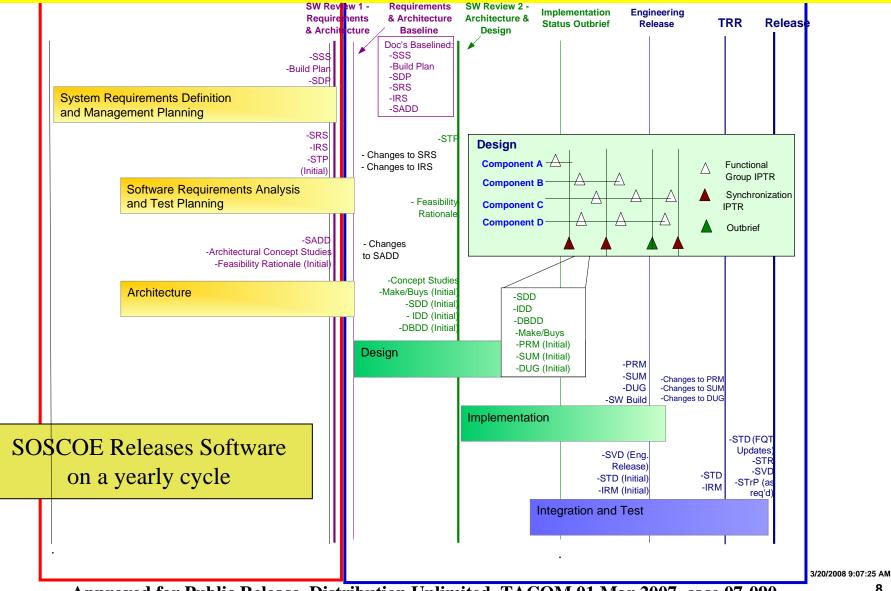
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SOSCOE 2 Year Build Cycle

Software Development Methodology is based on IEEE 12207.2 Evolutionary Model





- •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