

MCoE Industry Day

Mission Command Panel



12 April 2017

Columbus, Georgia – Convention and Trade Center



Agenda



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- Welcome/Panel Introductions – COL Bergmann, TCM BCT MC
 - Command Posts (CP)
 - Common Operating Environment
 - CP Computing Environment (CE)
- } LTC Mack, TCM Mission Command/
Command Posts
- Mounted CE – MAJ Clark/Mr. Cherry, TCM BCT MC
 - Mobile Handheld CE – MAJ Highley, TCM Soldier
 - Coalition Interoperability with Tactical Radios – LTC Cannaday, TCM Tactical Radios



Command Posts



Command Post Way Ahead



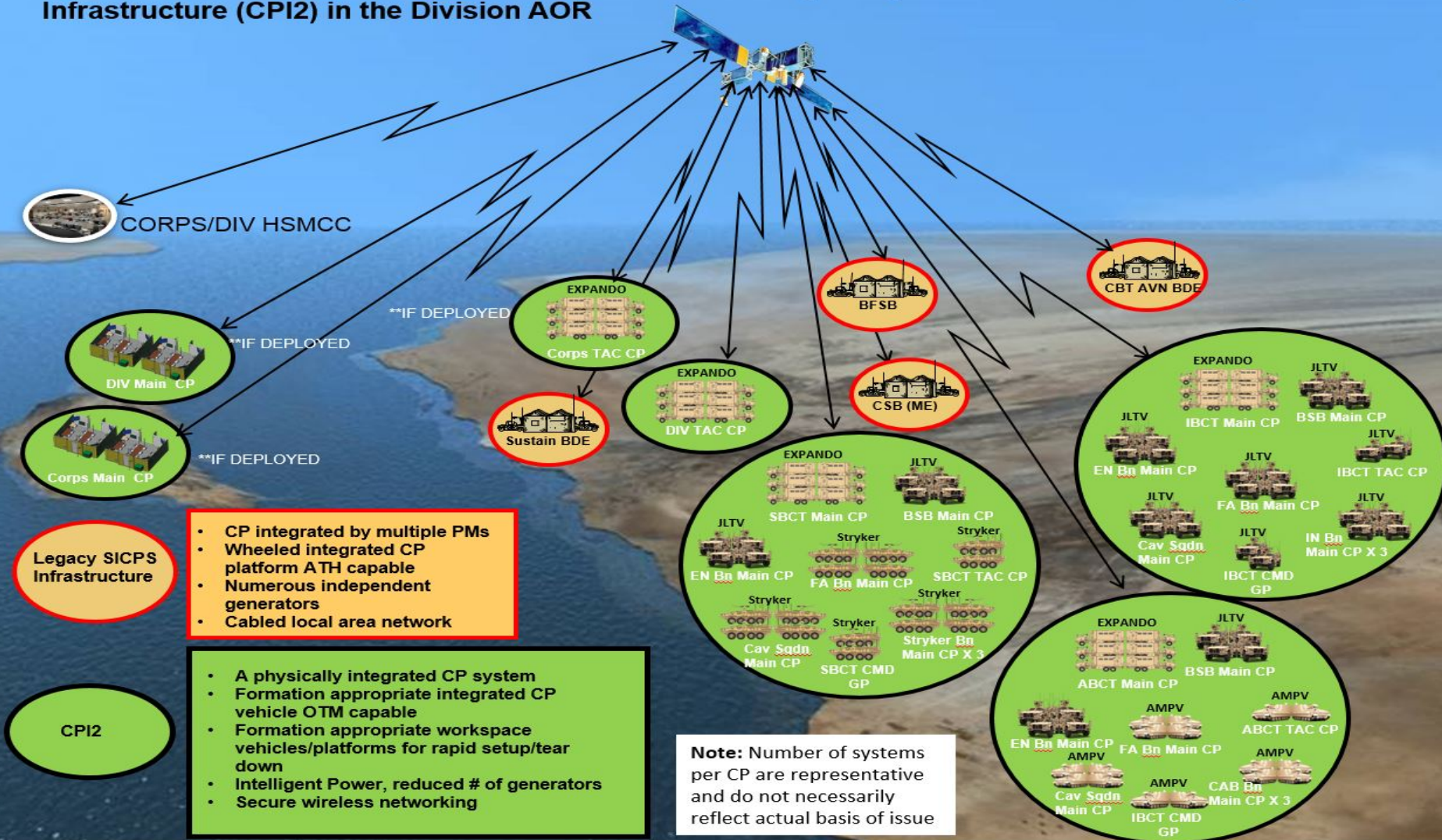
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- Conduct CPI2 CDD CBARB process (MAR-MAY 17)
- HQDA, G-8, draft Directed Requirement (DR) for Command Post Integrated Infrastructure (CPI2), Brigade and Battalion approval pending (S: APR 17 (T))
- ASA (ALT) Milestone Decision Authority (MDA) delegation pending (A/DASM brief: 18 APR 17)
- FORSCOM Command Post Operational Planning Team (CP OPT) to provide CP platform recommendation to HQDA and TRADOC (S: 1 MAY 17)
- Draft CDD and supporting documents (OMS/MP, C-BA, and architecture products) under revision (DR and OPT influence) (S: 1 MAY 17 to begin staffing)
- CPI2 Materiel Development Decision (MDD) (AUG 17 (T))
- HQDA Staffing in JUL/AUG 17 to support a SEP 17 Army Requirements Oversight Council (AROC)

Operational View (OV)-1 –Command Post Integrated Infrastructure (CPI2) in the Division AOR

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Operational View (OV)-1 – High Level Operational Concept Graphic: Command Post Integrated Infrastructure (CPI2) in the Division AOR





CPI2 CDD Program Summary



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- CPI2 will develop, procure, and field mobile, agile, expeditionary command posts at corps, division, brigade combat team (BCT) and battalion to include command groups.
- Centerpiece of CPI2 is the Mission Command Platform (MCP).
 - ❑ Digitally connected workspace on a formation appropriate vehicle or platform to support staffs at the CP as well as command groups at corps/division and BCT.
 - ❑ At the BCT tactical CP and below, MCPs using Joint Light Tactical Vehicle (JLTV), Armored Multi-Purpose Vehicle (AMPV) and the Stryker Vehicle Platforms will blend in with the maneuver formations they support and will enhance survivability through better cover and concealment and rapid displacement.
 - ❑ The BCT main CP and corps and division CPs will use Expando Vans and other expandable shelters to decrease setup and tear down times. MCPs at all echelons will leverage wireless and other technologies to facilitate rapid connectivity and displacement.
- CPI2 will also develop the Command Post Support Vehicle (CPSV).
 - ❑ On a formation appropriate vehicle, the CPSV hosts MC servers, radios, local area network (LAN) systems.
 - ❑ Provides a unified voice management system (intercom) for conferencing, access to tactical voice radio, voice over internet protocol (VOIP) telephone, and radio cross banding.



Selected KPP/KSA/APA



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- **KPP 1 – Enable Mission Command – MCP (Threshold)**
 - ☐ Digitally connected workspace in/on a formation appropriate vehicle or platform.
 - ☐ LAN workspace (SIPR/NIPR) prewired and powered for 10 personnel (ISO shelter, 5-Ton Van), 5 personnel (JLTV) and 4 personnel (Stryker).
 - ☐ Integrate the WIN-T wired/wireless capability for the LAN.
 - ☐ Integrate on selected platforms the WIN-T SATCOM solution.
 - ☐ Integrated systems will be capable of running off supplied vehicle power
- **KPP 2 – Enable Mission Command – CPSV (Threshold)**
 - ☐ CPSV will host MC servers, LAN systems, and radios on a formation appropriate vehicle for the Corps/Division tactical CPs and the BCT and BN CPs.
 - ☐ OTM capable via wireless connection to the accompanying WIN-T network transport platform. This is defined as being able to exchange data through connectivity to MC servers to other servers in the formation and/or other echelons.
 - ☐ Integrate the WIN-T wired/wireless capability for the local area network (LAN).
 - ☐ Setup from cold start (all info systems off) with two personnel in 15 minutes ready to begin system boot and external connectivity



Selected KPP/KSA/APA (cont)



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- **KSA 1 – CPSV Remoting:** Provide the capability to remote systems (servers, LAN systems, and voice communications) into a building for operations external from the CPSV.
- **KSA 2 – Unified Voice Management System (UVMS):** Integrate the Army solution UVMS for use both within the MCP and the CPSV. Capable of access to WIN-T voice over internet protocol (VOIP) telephone, voice radio, software-based voice collaboration from operator positions. Capable of wave form and radio cross banding
- **KSA 3 – Command Post Display System (CPDS) Video Controller:** Integrate into the MCP a multi-output video controller capable of accepting and displaying multiple video and computer application inputs (LAN or other video feeds).
- **KSA 4 – CPDS Large Scale Display (LSD):** Integrate for the MCP a size appropriate high definition LSD (a projector or flat panel).
- **APA 9 – Central Power:** Physically integrate into the command post the Army POR central power and intelligence power management micro-grid solution (T=O).
- **APA 10 – Shelters/Environmental Controls:** Physically integrate into the command post the Army POR soft side shelter (tent) and environmental control unit (ECU) solution (T=O).



Selected KPP/KSA/APA (cont)



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- **APA 1 – MCP/CPSV Power:** The MCP/CPSV will power all on board systems from the vehicle supplied power (exception is the ISO container MCP). Receive power from U.S. military (e.g. Tactical Quiet Generator, Advanced Medium Mobile Power Source) and commercial sources (shore power). Distribute power within the platform needed to run associated integrated systems.
- **APA 2 – MCP/CPSV Extension:** The MCP and CPSV will come with an extension and boot wall capable of complexing with legacy and future Army POR tent systems. For the MCP (Stryker, JLTV only) the extension will be capable of providing useable workspace (100–150 sq ft) for up to five staff personnel.
- **APA 6 – MCP/CPSV Power:** Physically integrate into the command post the Army POR central power and intelligence power management micro-grid solution.
- **APA 7– Shelters/Environmental Controls:** Physically integrate into the command post the Army POR soft side shelter (tent) and environmental control unit (ECU) solution.



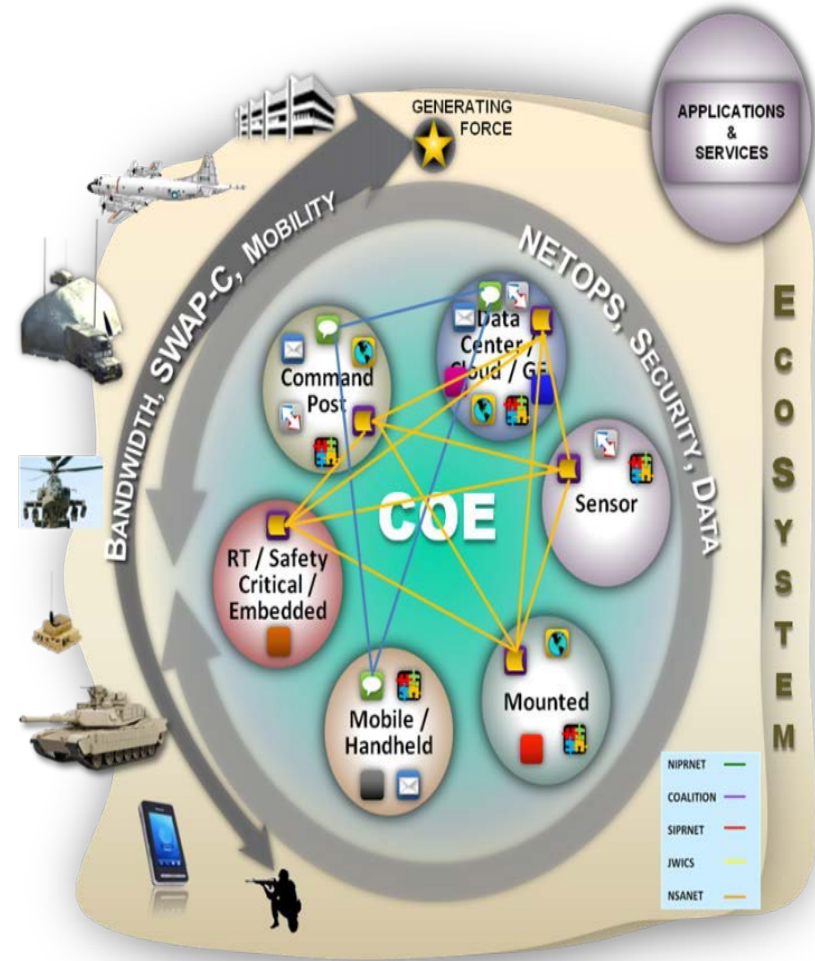
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Common Operating Environment

COE Overview

*What is the COE: an approved set of standards that enable secure and interoperable applications to be rapidly developed and executed across a variety of **Computing Environments (CE)**.*

- Organized into six computing environments, with a PEO to lead each CE :
 - Data Center/Cloud / Generating Force
 - Command Post
 - Mounted
 - Mobile/Handheld
 - Sensor
 - Real-Time/Safety Critical/Embedded (RTSCE)
- PEOs established CE Working Groups (CEWGs)
- PEOs and CEWG members identify and help develop solutions for the Warfighters in each CE



Common Operating Environment (COE) V3

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CURRENT

FROM: Single Purpose HW/SW



Comms



GPS/Location



Weather



Pictures



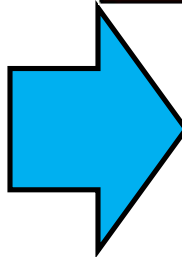
Sharing Data



Sync Matrix



Common Maps



COE V3

TO:

- A Rich Set of Warfighter Apps (Operations, Logistics, Intel, Fires...)
- Common Software Baseline
- Converged onto a Common Suite of HW Devices

Dismounted

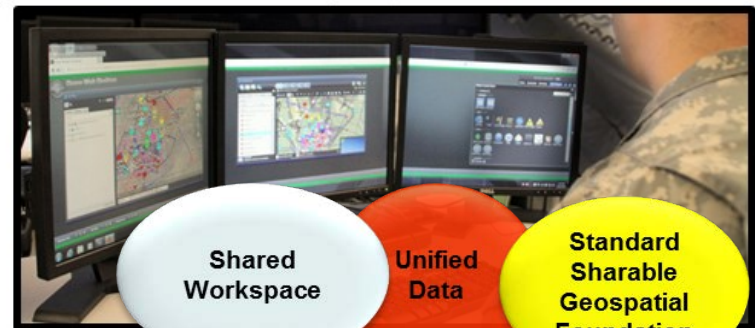


Mounted



Common Look and Feel

Command Post



Shared Workspace

Unified Data

Standard Sharable Geospatial Foundation

Today individual programs meet Warfighter requirements, however, there is a challenge when multiple PoRs are integrated into one unit; COE will resolve this



CP CE, MCE & M/HH CE Operational Benefit Storyboard



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Common mission command services and capabilities

User logs on

Same for every user on every type of MC computer on every network

Selects Map App

Accesses 2D/3D map, and common/consistent UI for mission command

Views COP

Blue, Red and Georef SA, ASCOPE, overlays, etc are common

Messages

Creates, sends, receives, manages messages and email

Documents

Creates, shares, receives, manages word, powerpoint, excel, etc

Collaborates

Invite, join, manage – text chat, whiteboard, mapboard, VOIP

Graphics

Use common graphics palette to create overlay, draw on pics, etc

Route Planning

Analyze terrain and auto create route

Orders Overlays

Create, send, receive, manage orders and overlays

Warfighting

Warfighting

Warfighting
Function

Access other apps for specific functions. For example, apps for intel, fires, engineer, medical, log, NETOPS, sensor control, vehicle status, airspace management, etc.

Role-based access to specific warfighting functions

Network aware
Hardware aware
User aware



Command Post Computing Environment

TSI Server (v1.1)



- Provides Common Infrastructure (from ADSI IS CDD)
 - Core Utilities (Message center, Notifications)
 - Data Model/Data Services
 - Sync Services (syncs data across the systems)
 - Common Services (Chat, Voice, IDaM, Patch Mgmt)
 - Tactical DCO Infrastructure (TDI) convergence (v2.0)

Smart Client



- Uses commodity hardware: MFoCS, laptops, tablets
- Hybrid OS: Linux base + Android User Interface
- Full functionality in D.I.L. environments & Early Entry Ops
- Allows portability (Mounted or 'under-the-arm')
- More prevalent at lower echelons
- Can act as a Web Client when connected to TSI
- Sync when comms available

Web Client



- Uses commodity hardware: Army Golden Master laptops
- Windows OS + standard software
- Connects to Apps on TSI server accessed via browser
- Intended for CP use but allows portability
- More prevalent at higher echelons



Integration of Unified Action (AMUCA) and Command Post of the Future (CPoF) Capabilities within the CPCE



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Foundation

Capability Needs Analysis

MC Essential Capabilities



ADP 3-0
Unified
Land
Operations



ADP 6-0
Mission
Command



Army
Operating
Concept
(AOC)

The Operational Payoff

- ✓ Provides integrated Army MC to the Joint Force Commander
- ✓ Enables Unified Action
- ✓ Seamless Situational Understanding during Unified Land Operations (ULO)
- ✓ Facilitates Planning and Execution (PLEX)

The Strategy

*Requirements Definition Packages (RDPs)
implemented over time, synchronized with POM
cycles*

FY19 - RDP #1

For CPCE Provides...

- COP
- Multiform Collaboration
- Manage SOPs (Inc #1)
- Manage and Visualize Info
- Monitor Situation/Progress of Operation (Inc #1)

For UAP provides...

- COP
- Exchange of Mission Information with UAPs

FY22 - RDP #2

For CPCE Provides...

- Manage & Visualize Information (Inc #2)
- Manage SOP (Inc #2)
- Conduct MDMP (Inc #1)

For UAP provides...

- Force Employment
- Joint Force
- Adaptive Planning (Operational Design)
- Synchronization

FY 25 - RDP #3

For CPCE Provides...

- Conduct MDMP (Inc #2)
- Evaluate Situation/Operation

For UAP provides...

- Total Force Analysis

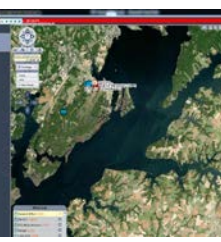
Current

Different User Interfaces, Data Models, and Map Engines
Requires Mediation Services (DDS: Position Reports; C2IVM (VMF Translation))



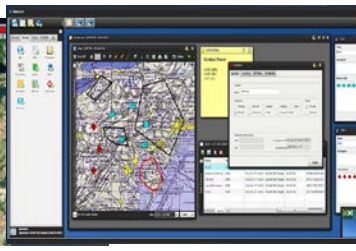
JBC-P

Joint Battle Command – Platform
• Friendly Force Tracking



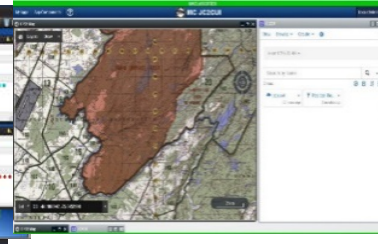
CPOF

Command Post of the Future
• Commanders Situational Awareness



CMD Web

Command Web
• Maneuver Planning
• Obstacles and Hazards
• Engineering Mobility Services



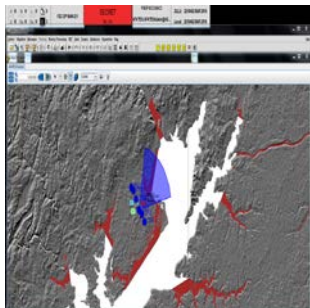
GCCS-A/AMCUA

Global Command and Control System - Army
• Provide critical information and tactical data from GCCS-J



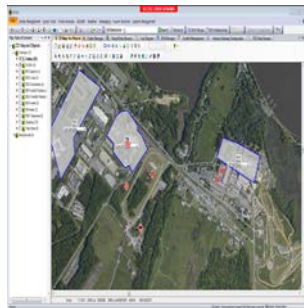
TIGR

Tactical Ground Reporting
• Information Centric Solution
• Collect, Share and Analyze Data



AFATDS

Advanced Field Artillery Tactical Data Systems
• Plan, Coordinate, Control and Execute Fires and Effects



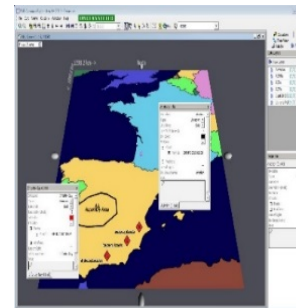
DCGS-A

Distributed Common Ground System – Army
• Army's Intelligence System



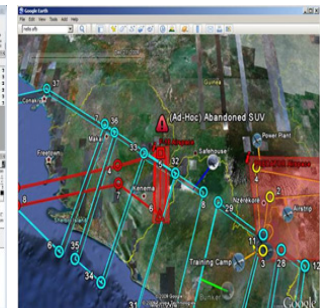
C-RAM

Counter – Rocket, Artillery, Mortar
• ADA and RAM Sense Warn Intercept



TAIS

Tactical Airspace Integration System
• SA of the Army Airspace C2 and Air Traffic



AMPS

Aviation Mission Planning System
• Mission Planning/Battle Sync Tool
• Automates Aviation Mission Planning Tasks

FY19 Objective



**Command Post CE
Web Client**

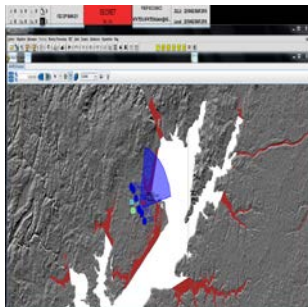
CPCE/MCE Features:

- Simple Common Operating Picture (COP)
- Common Map
- Common Look and Feel
- Reduced training burden
- Ability to integrate new capabilities
- Common Data Services
- Common applications such as Chat/Alerts



**Mounted CE Platform
Smart Client**

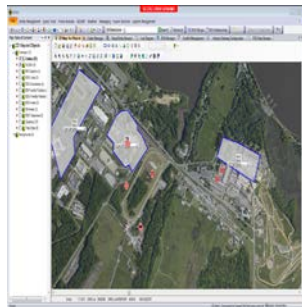
C2IUL provides Backwards Compatibility for systems until they migrate



AFATDS

Advanced Field Artillery Tactical Data Systems

- Plan, Coordinate, Control and Execute Fires and Effects



DCGS-A

Distributed Common Ground System – Army

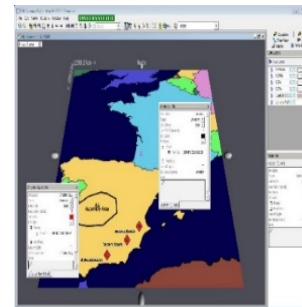
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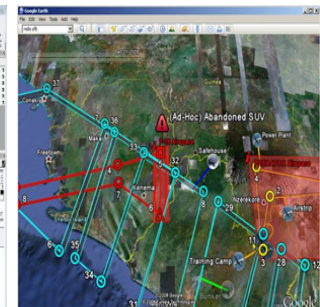
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Questions and Discussion



Mounted Computing Environment and Mission Command



FBCB2 → JCR → JBC-P → MCE

Incremental Modernization



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2003-2010

2011-2016

2015-2020

2019-2028

~103k FBCB2/JCR and ~25k MTS/JCR Log systems fielded



FBCB2 6.4/6.5 & Movement Tracking System (MTS)

Hardware	Software	Comms
EV4 EDM 2/3 IDM 304 MTS/MRT	v6.4/6.5 PASS MTS 5.16	BFT 1 EPLRS
Capabilities		

- Terrestrial & Low Bandwidth SATCOM
- Limited Command & Control (C2) and full Situational Awareness (SA)
- Lacks Joint C2/SA interoperability
- Blue Force Tracker (BFT) network latency = inaccurate blue Position Location Information (PLI) for movers
- UNCLAS Controlled Unclassified Information (CUI) BFT network
- Lacks C2/SA interoperability with Movement Tracking System (MTS) and Land Warrior (LW)
- Fixed, "a priori" database
- Non-standard "Tactical Mapping Tool Kit" TMTK map engine/tool kit



Joint Capabilities Release (JCR) & JCR-Log

Hardware	Software	Comms
JV5 KGV-72 LW EDM3 IDM 304 MRT +	Vehicle JCR-Log NOC TSG Aviation TIGR	BFT 1 & 2 EPLRS SINCGARS

Capabilities

- Terrestrial & SATCOM
- Limited C2 & Full SA
- Initial C2/SA interoperability with USMC & Joint Tactical COP (Common Operating Picture) Work Station (JTCW)
- C2/SA interoperability with MTS & LW
- Database simplification & reduced data products (Self Descriptive SA)
- Initial Commercial Joint Mapping Toolkit (CJMTK) implementation
- BFT 2 network (Type 1) = more 10X improvement over BFT 1
- TIGR (Tactical Ground Reporting system) co-host

~ 99K: all new modernized MFOCS hardware

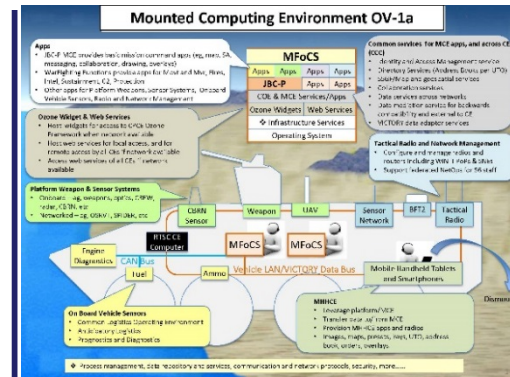


Joint Battle Command - Platform (JBC-P) & JBC-P Log

Hardware	Software	Comms
MFOCS JV5 KGV-72 EDM3 IDM 8	Vehicle JBC-P Log NOC Aviation TIGR	BFT 1 & 2 SRW Radios WNW Radios

Capabilities

- Hybrid Network
- JBC-P Software Products:
 - Vehicle
 - Network Operations Center
 - Handheld Software (Nett Warrior)
 - Collaboration Tools
 - JBC-P Log
- MFOCS Basic (full function computer)
- Faster Map Engine
- Improved User Interface
- Baseline for Mounted Computing Environment
- Integrated ASCOPE



Mounted Computing Environment (MCE)

Leveraging previous investments and providing affordable & interoperable "Brigade and Below" C2/SA capability for the joint force; planned versions v3 FY19, v4 FY22; v5 FY25

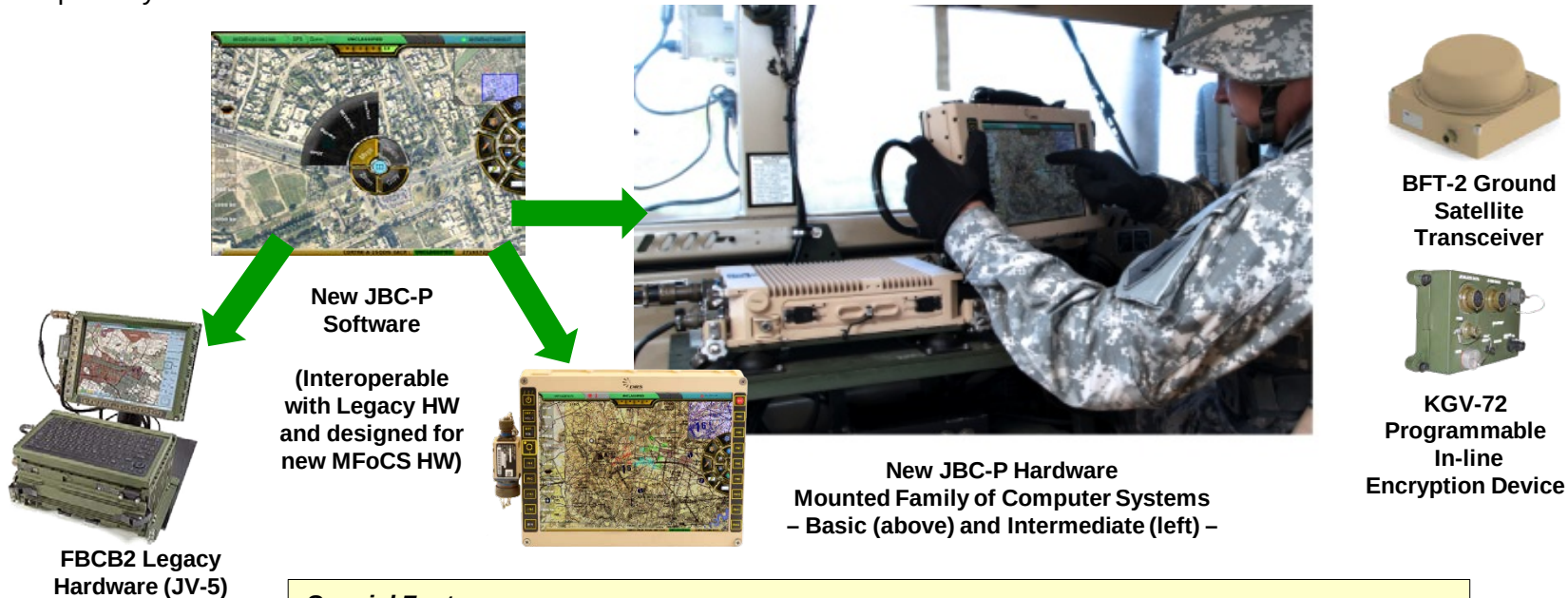
Capabilities

- JBC-P functionality as core C2/SA capability on Mounted CE
- Rapid development of new capability
- Enhanced interoperability with CP CE
- Hybrid network to tactical edge
- Advanced common hardware
- Platform cross domain solution capable
- Enhanced Security & Information Assurance
- Increased competition
- Cost avoidance

Mounted Mission Command - JBC-P

JBC-P is the cornerstone of joint forces digital communications for Command and Control (C2) and Situational Awareness (SA) information.

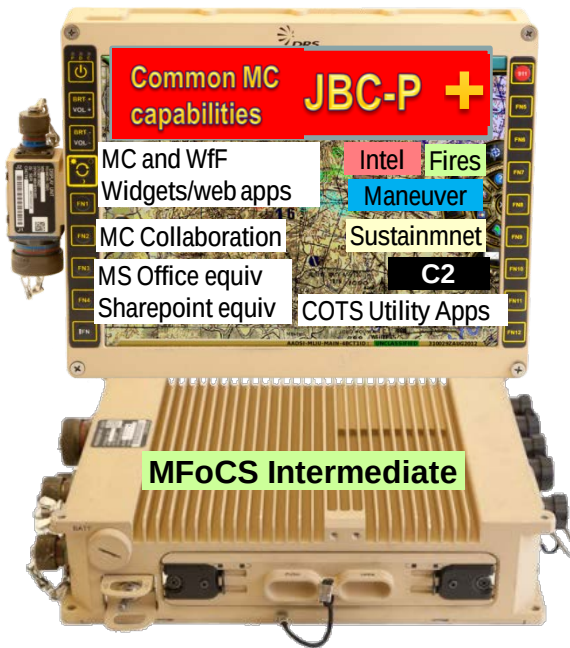
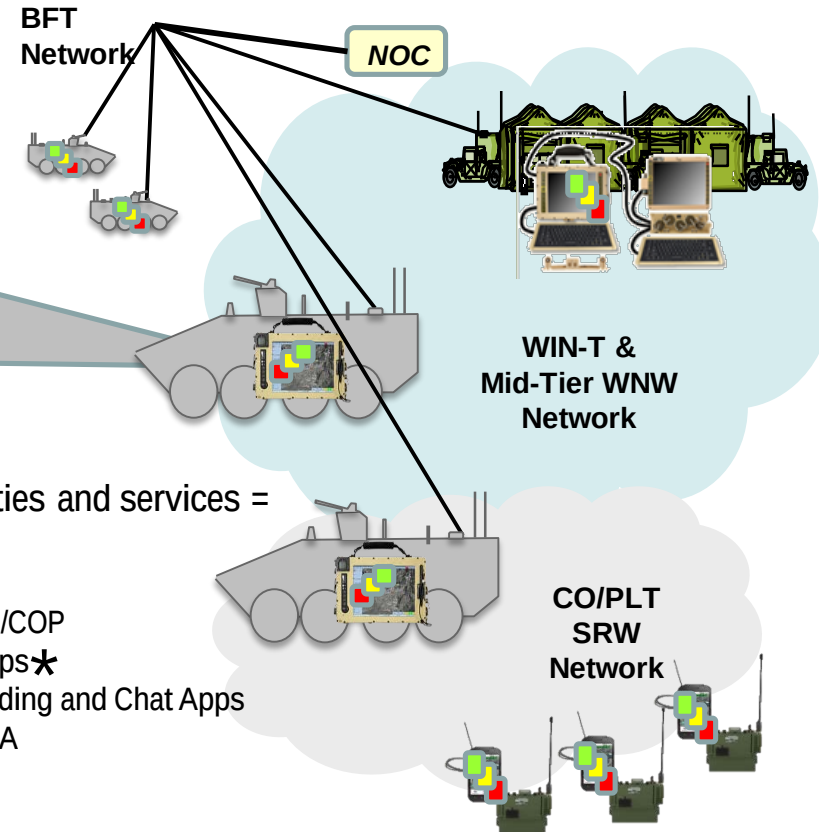
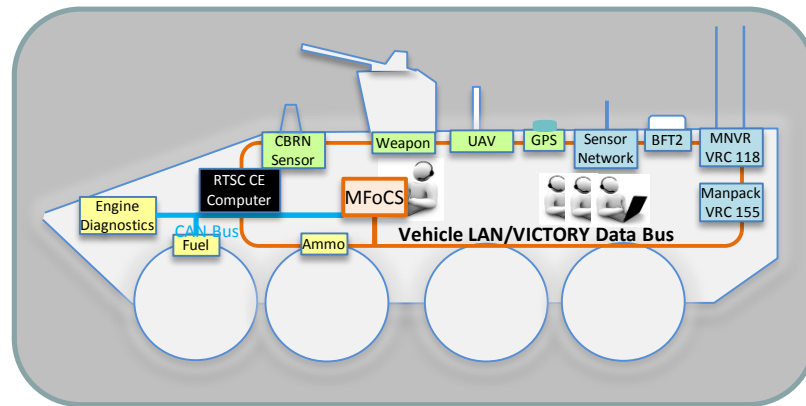
- Provides secure Blue Force Tracking capability in Platforms and Command Posts
- Provides soldiers and commanders a map-based Common Operating Picture of the battlefield
- Assists in fratricide prevention
- Provides Hardware (Vehicle Platform Computer Systems, BFT Satellite Transceivers, Encryption Devices, and ancillary equipment)
- Provides Software capabilities (JBC-P v1.6) in place of existing software (FBCB2 6.5; JCR v1.3)
- Leverages the Army's previous equipment investments by installing the new JBC-P software on new hardware as well as existing legacy computer systems.



Special Features:

- Orders, graphical overlays, friendly, hostile, neutral, unknown, non-combatant SA.
- Free draw, drag and drop icons, touch to zoom maps, group chat, free text and combat messages.
- System tools- line-of-sight (LOS)/circular; digital map/navigation functions; far target locate; sensor integration.
- Designed to be used on the BFT-2 Network.

Mounted Mission Command Mounted CE Snapshot



Provides common MC capabilities and services = equivalent to JBC-P Plus:

- MCOTM/Enhanced MC
 - 3D Map – same as CP Map/COP
 - Select MC widgets/web apps*
 - Collaboration – Whiteboarding and Chat Apps
 - Fires App – based on MHFA
 - Log/Sust Apps
 - Office/Sharepoint Apps
 - Utility Apps eg, Image Management
 - Others.....potentially
- MC Support Apps
 - ODIN for dynamic NetJoin
- Platform Support Apps
 - Platform Status
- Platform/VICTORY services
 - Shared GPS/ PNT Status
 - E-Router & E-Switch

★ Widgets converted to Android web apps that use local Mounted Android Computing Environment maps and go to server for data

- TIGR Widget
- TAIS DACT Widget



Mounted Mission Command

Mounted CE Top Ten



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1. Over the Air capability for data product, software, IA, & COMSEC updates, and upload of new apps
2. Integration of networked sensors on key platforms; to include OSRVT app and Rover 6 (secure) radio for UAS feeds
3. Non-CCI Suite B SW solution to replace the KGV-72 in-line encryption device
4. Next Generation BFT capability for key leaders – 5x more capable than BFT 2
5. Improved C2 interoperability with Joint and Coalition C2 systems
6. Enterprise identity management for role-based access control & continuity of operations from home station to tactical environment
7. Beyond LOS voice communications (SVOIP)
8. Assured PNT in a GPS denied environment
9. Improved hybrid network; user friendly (automatic) ability to connect to & use multiple networks/radios while mounted & dismounted (including BFT, SRW, WNW, 4G/LTE, Wi-Fi & others)
10. Better platform integration with on board communication and sensor systems viewed and controlled from Mounted CE displays



Questions and Discussion



Mobile Handheld Computing Environment and Mission Command



Soldier Division / TCM-Soldier

Dismounted Mission Command

Industry Day
12 April 2017



Soldier Division and TCM-Soldier represent every Soldier in the Army. We are the user representative to the TRADOC Commander. We develop and manage capabilities for everything a Soldier wears, carries or consumes.

Dismounted Mission Command Transition to Mobile HH CE

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Incremental Modernization



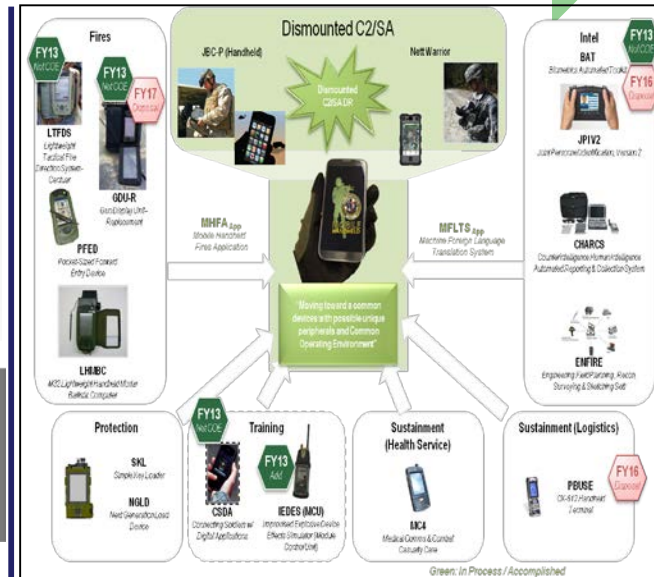
Land Warrior Capabilities

- C2 Interoperability
- User Defined Operational Picture
- Create / Send / Receive Digital Messages
- Voice / SA / C2 to Leader
- Voice / Individual Location for all Soldiers
- Enhanced Mission Planning
- Weight & Space Reductions (10 lbs)
- Power for 24 Hour Operations
- Enhanced Navigation
- Enhanced Night Vision (Fusion Technology)
- Networked Lethality



Nett Warrior Capabilities

- Net Ready: Interoperability w/external sensors, JBC-P, Fires Control Systems (PFED)
- Mission Command & SA
- Digital Voice / SA / C2 to Leader
- Voice/ Individual Location Indicator to all Soldiers
- Ability to create / send / receive digital messages
- Enhanced Mission Planning Capability
- Precision Navigation & Dead Reckoning
- Sustainability: Sufficient Power and system reliability
- Mobility: System Weight Reduction ($\leq$ 3lbs)



Mobile H/H CE Capabilities

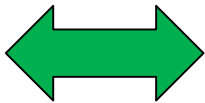
- Nett Warrior as core C2/SA application on Mobile H/H CE
- Standard Graphical User Interface
- Situational Awareness filtering
- Measure Tool and Route Planning/Navigation capability
- 3D Map Views / Zoom capability
- Network Data Exchange with Address Book/Groups
- Enhanced Security & Information Assurance
- Standard, Shareable, Geospatial Foundation
- Common Map Overlay
- Assured-Position, Navigation and Timing
- Interoperable Chat

Dismounted Mission Command Nett Warrior

Description Uses commercial smart devices with tactical applications networked through JTRS to provide dismounted leaders situational awareness (SA) during combat operations

Capabilities

- Provides SA/Understanding to the dismounted leader (Team Leader & above)
- Faster, more accurate decisions in the tactical fight
- Connects the dismounted Soldier to the BCT Network



- Dismounted Situational Awareness/Command & Control
- Digital Chem-lights/markers
- Map overlays and graphics

- Tactical Messaging:
Observation Report
Obstacle Report
Engagement Report
NBC strike Report
MEDEVAC
IED Report

Critical Tactical Capability:
Where am I?
Where are other friendly forces?
Where are enemy forces?
What information do I need?

Networked Leaders
Mission Command thru JCR / JBC-P

Linked to Army Blended Training:
Army Training Network
Army Games for Training



M/HHCE RDP COE v3, 4, 5 Requirements



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- **Situational Awareness**
 - Nett Warrior (NW)
 - Soldier Borne Sensor
 - Robotics (Universal Controller)
 - Soldier Protection System- Integrated Soldier Sensor System (ISSS)
 - Man Portable Radiological Detection System (MRDS)
 - Parachute Navigation System (PARANAVSYS)
 - Radiation Detection System (RDS)
- **Intelligence**
 - Machine Foreign Language Translation (MFLTS)
 - CI and HUMINT Automated Reporting and Collection System (CHARCS)
 - Counter IED
 - Biometrics Automated Tool Kit (BAT/HIDE)
- **Mission Command/Network**
 - Intra Soldier Wireless
- **Fires/Lethality**
 - Light Weight Hand Held Mortar Ballistic Computer (LHMBC)
 - Pocket Sized Forward Entry Device Inc II (PFED II)
 - Small Arms Ballistic Kernel (SABK)
 - Soldier Leader Effects Tool
 - Gun Display Unit Replacement
- **Sustainment**
 - Medical Communications and Combat Casualty Care (MC4)
 - Soldier Water Estimation Tool (SWET)
- **Aviation**
 - eMagnet
 - Medical
- **Cyber**
 - Mobile Device Exploitation, Elimination and Planning (MoDEEP)
 - M Code PNT Puck Application
- **Department of Homeland Security**
 - DHS First Responder Capability



Dismounted Mission Command Mobile Hand Held CE Top Priorities



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1. Robust network transport (multi band, multi channel, multi waveform)
2. Digital Data Link (DDL); EUD to control and share Full Motion Video from Soldier Borne Sensors
3. Air-Ground Integration
4. Assured PNT in a GPS denied environment
5. Horizontal / vertical voice / data route retransmission; BLOS
6. Secure LTE wireless capability for dismounted leaders
7. User friendly ability to connect and use multiple networks (SRW/LTE) securely
8. Hands free, heads up control
9. Over the Air capability for data product, software (plus applications), IA, and COMSEC downloads
10. Intra Soldier Wireless (Cable Free)
11. Ability to filter and differentiate Classified and Unclassified data requirements
12. Cyber/EW Hardening technology
13. Share and Display relevant data from surrounding Mission Command Systems
14. Training Enablers that operate within Synthetic Training Environment



Questions and Discussion



Coalition Interoperability w/Tactical Radios

U.S. Army Cyber Center of Excellence and Fort Gordon



BUILDING A WORLD CLASS CYBER WORKFORCE

TCM Tactical Radios
LTC Robert Cannaday

12 April 2017



Coalition Interoperability Considerations in Tactical Radio Environment



What we have:

- Requirements for Coalition Interoperability: 2 Channel Leaders Radio, Small Airborne Node Radio (SANR), MANPACK Radio, and Mid-Tier Networking Vehicular Radio (MNVR) (OBJ).
- Tactical voice bridge (USAREUR Operational Needs Statement)

What we need:

- Radios with Type 1 or Suite B crypto depending on mission, load appropriate crypto
- Software security architecture that is software based (depending on mission)
- Waveforms that are releasable to Coalition
- Coordination with MCoE to develop echelon and exchange requirements between Coalition and US



Questions and Discussion



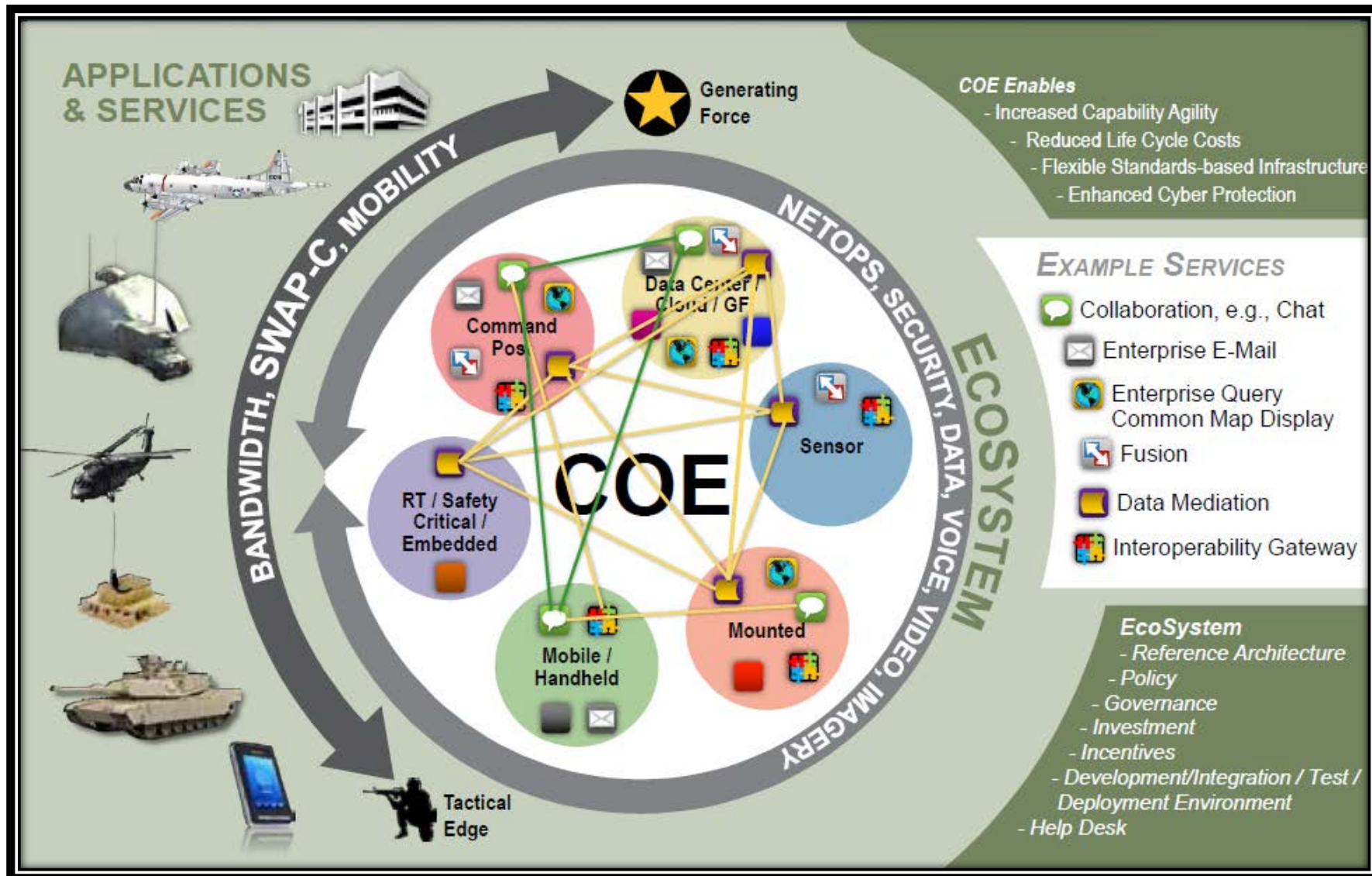
Back Ups

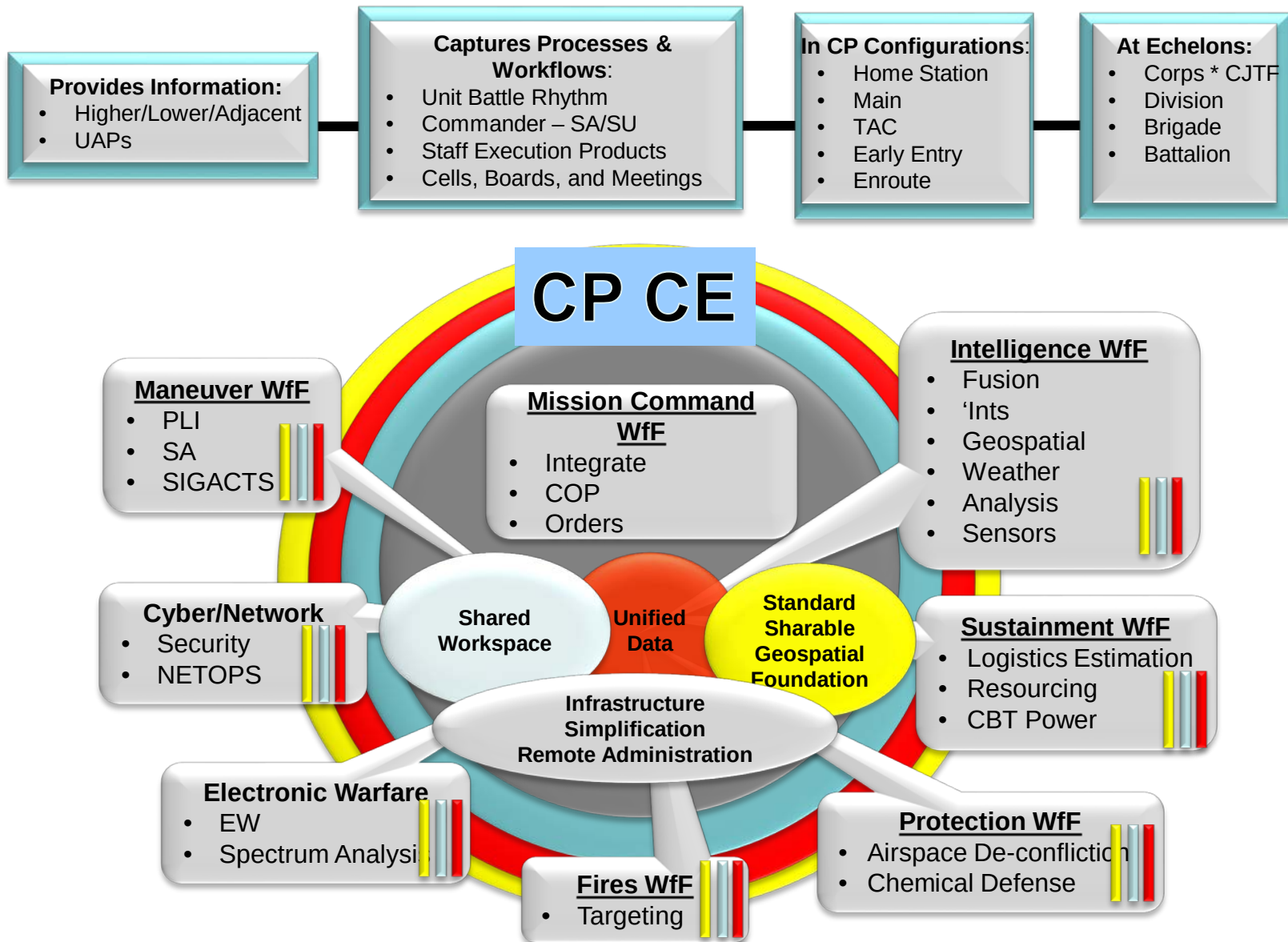


COE and CPCE Back Ups

Common Operating Environment

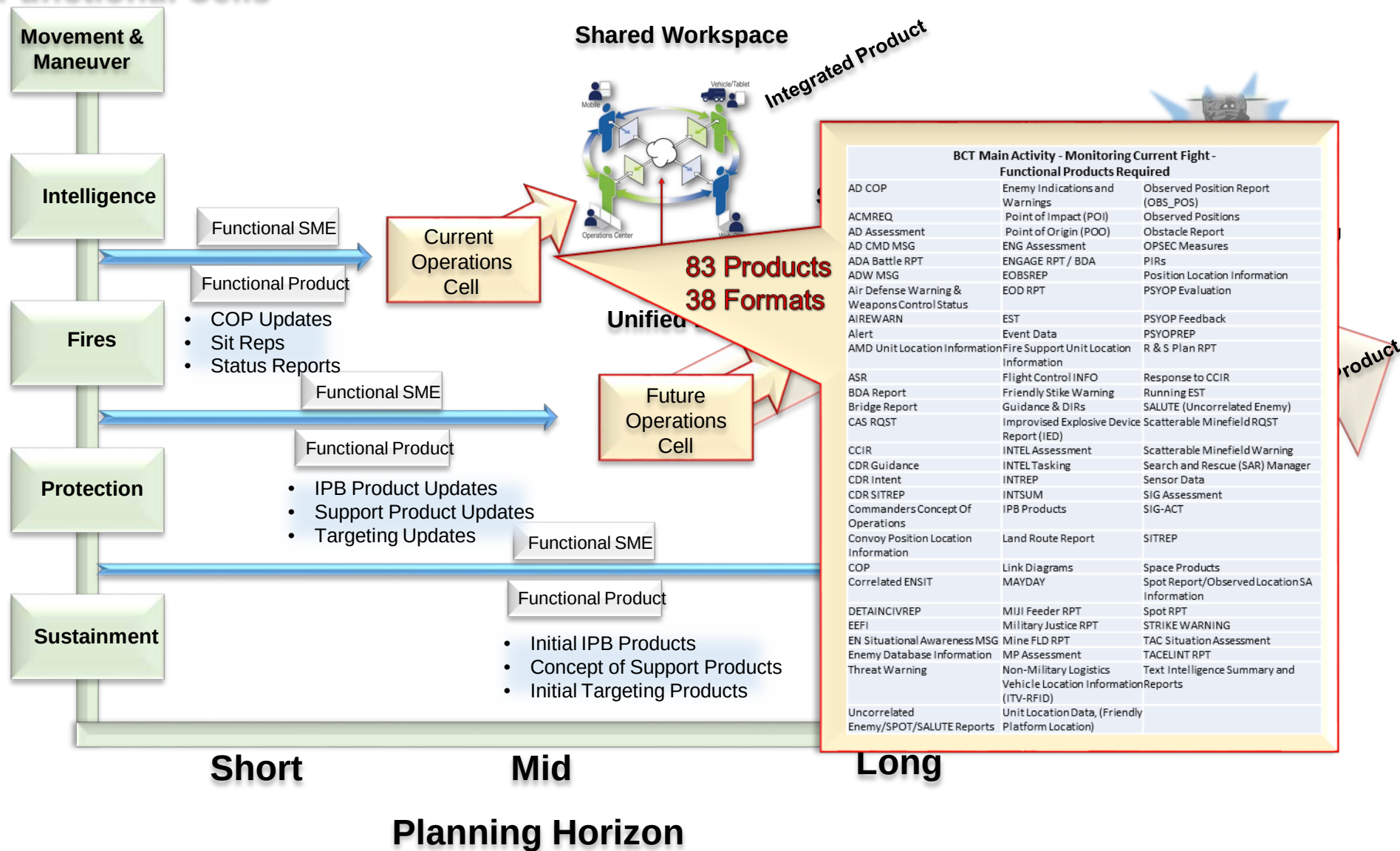
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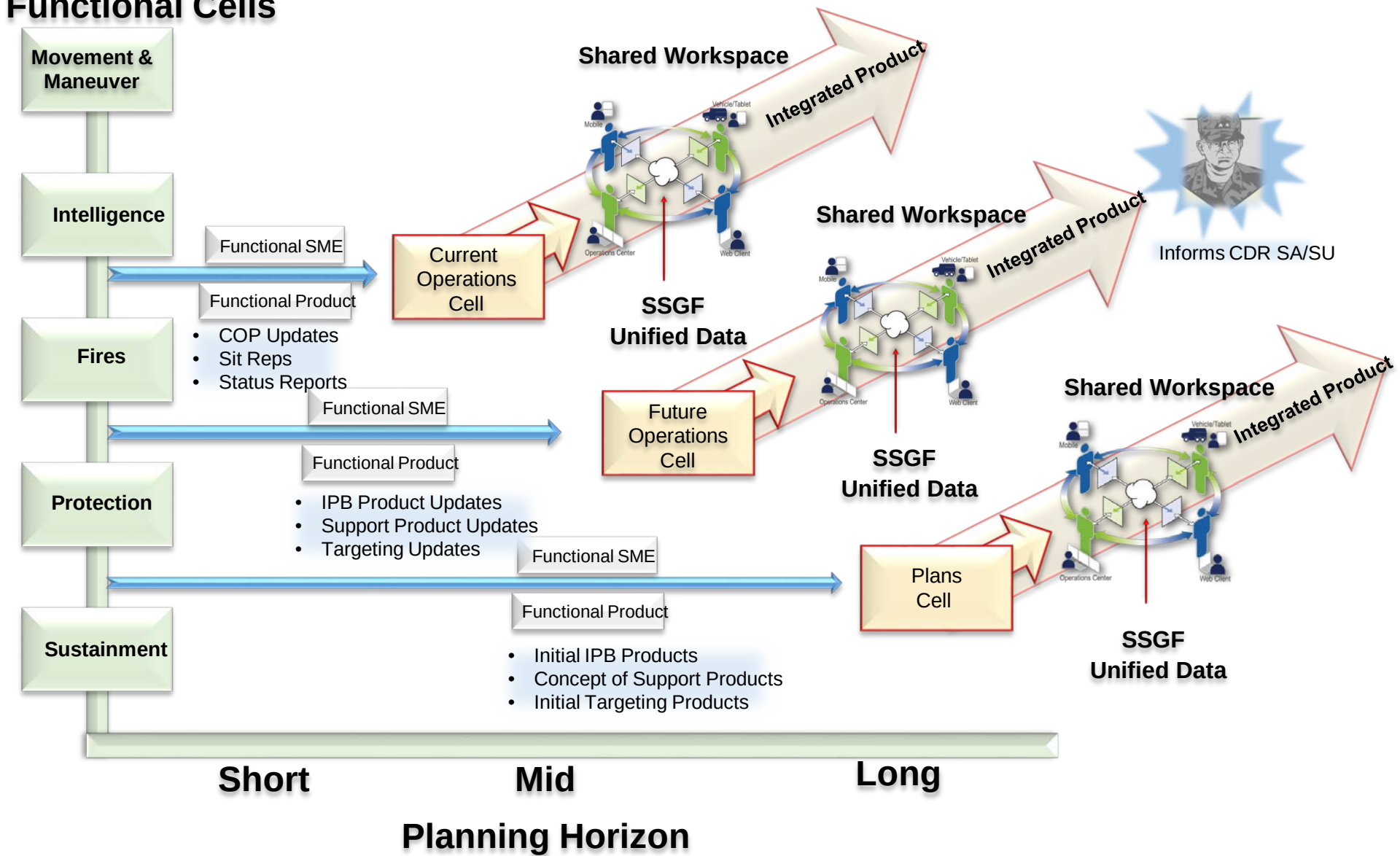
CP CE v3 Capability: Bridging the Integration Gap

Functional Cells



CP CE v3 Capability: Bridging the Integration Gap

Functional Cells





Common Operating Environment



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Mission Command Modernization

- Provides common mission command capabilities, and apps for any other functions
- Modern user experience that is consistent for users on all devices at all echelons on all networks
- Capabilities on smartphones for dismounts tablets for vehicles laptops and servers (CPs)
- Modular design enables mission command within all Computing Environments (CEs):
 - Mobile/Hand Held CE
 - Command Posts CE
 - Mounted CE
 - Sensor CE
 - Data Center/Cloud CE
 - Real Time/Safety Critical CE



M/HH CE Back Ups



M/HH CE CCC Strategy



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CCC	Operations CCCs	M/HHCE RDP's
1	Standard and Shareable Geospatial Foundation	v3, 4, 5
2	Display and Share Relevant Tactical Information	v3, 4, 5
3	Universal Symbology Display	v3, 4, 5
4	Enable Collaboration	v4, 5
5	Chat	v3, 4
6	Unified Voice	v3
7	Unified Data	v3,5
8	Manageable Network Components	v3, 4, 5
9	Shared Workspace Environment	v4,5
10	Common Look and Feel	v3, 4
11	Assured PNT	v4, 5
12	IDAM	v3, 4
13	NETOPS	v3, 4, 5
14	Email	v4, 5
15	Sensor Alert Distribution	v3
16	Common Track Protocol	v4
	Capability Integration*	v3, 4, 5
	*Although a common requirement, Capability Integration is not an official Operational CCC	



Dismounted Mission Command Focus Area



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Connecting Soldiers and Squads to the Network

Description: Use commercial smart devices with tactical applications to provide dismounted leaders situational awareness during combat operations

- **Where We Are Today**
 - Using Commercial off the shelf End User Devices (Keeps pace with technological advances)
 - Technological improvements insertions through annual Capability Steering Boards
 - One Channel Transport (SRW)
- **Where We Are Going**
 - **Future capability integration:**
 - 4G / LTE, data through SINCGARS and other wave-forms
 - Full Motion Video from sensors
 - Control of Soldier Borne Sensors
 - Intra-Soldier Wireless: Enable Soldier-Worn Systems to communicate and share power
 - Two Channel Transport (Leader Radio – SRW, SINCGARS)
 - Diagnose the transport and network from the user interface
 - BLOS
 - Networked Lethality, Air/Ground interoperable



Nett Warrior Active Integration



Current Integration Efforts

- PFED Inc II
- CI and HUMINT Automated Reporting and Collection System (CHARCS)
- Small Arms Ballistic Kernel (SABK)
- Lightweight Handheld Mortar Ballistic Computer (LHMBC)
- CBRN and EOD Apps (20th CBRNE JCACS ATD)
- Integrated Soldier Sensor System (ISSS)
- MRDS – Radiation Detection System
- Counter IED Apps (JIDA - Joint Improvised Threat Defeat Agency)
- Assured Position Navigation & Timing (A-PNT) – Dismounted
- Soldier Leader Effects (Strike/Threat Warning, Fires Thread Messages)
- MC4 – Casualty Treatment Information
- Aviation Integration - eMagnet
- Mobile Device Exploitation, Elimination and Planning (MoDEEP)
- DHS – Department of Homeland Security
- Parachute Navigation System (PARANAVSYS)

Existing 3rd Party Apps/Capabilities

- Machine Foreign Language Translation System (MFLTS)
- Soldier Leader Effects (Range Card, Sector Sketch, Weapons Emplacement Tool, Tasking)
- Afghan Phrases (Trans Apps)
- Afghan Ranks (Trans Apps)
- Black Box (Trans Apps)
- Class IV Calculator (Trans Apps)
- Collect (Trans Apps)
- Green Notebook (Trans Apps)
- Heatmap (Trans Apps)
- Light Data (Trans Apps)
- Pathr Gallery (Trans Apps)
- IFDC (Trans Apps)
- PLI Recorder (Trans Apps)
- AV pDDL
- SEC Symbology Renderer
- Android Tactical Assault Kit (ATAK)
- Harris KDU
- USARIEM Altitude Readiness (ARMS)
- USARIEM Soldier Water Estimate Tool (SWET)
- Persistent Systems Wave Relay
- Persistent Systems Wave Relay Configuration Tool
- Aruba VPN

- High interest (100+ SDK requests)
- Assist other Army programs achieve their requirements
- Increase capability without adding weight

