Presentation to AFCEA

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CERDEC’s Mission Remains the Same

TRADOC

AMC

CERDEC

ASA(ALT)

ADCON

OPCON

Approved for Public Release
CERDEC Organization

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• Mission Command
• Soldier Power & Tactical Micro-
  Grids
• Positioning, Navigation & Timing
• Prototyping, Integration & Testing

• Systems Engineering Analysis & Modeling and Simulation
• Cyber Security & Information Assurance
• SATCOM
• Radio Frequency Communication
• Tactical Communication Division
• CERDEC Ground Activity

• Science and Technology
• Countermine
• Modeling and Simulation
• Ground Combat Systems
• Special Projects & Prototyping
• Air Systems

• Cyber & Offensive Operations
• Electronic Warfare & Air/Ground Survivability
• Intel Systems & Processing
• Exploit, Analysis & Response
• RADAR / Combat Identification
• SIGINT/ Quick Reaction
• CERDEC Flight Activity

• IEW Support
• Avionics & Force Protection Software Support
• Tactical Communications
• Satellite & Management Sys
• Cyber Security & Data Standards
• Battlespace Command Solutions
• Fire Support

• Manufacturing/Production Engineering
• Maintenance Concept Engineering
• Sustainment Supportability Engineering
• Product/Technical Data Management
• Quality Engineering & Product Assurance
Major Programs and Initiatives

BY ASAALT S&T PORTFOLIOS

C3I:
- Cyber (Offensive And Defensive)
- Secure, Reliable Communications / Adaptive Networking
- Threat Detection, Classification And Countermeasure Technologies And Architectures
- Big Data Analytics / Processing, Exploitation, And Dissemination
- Scalable Architectures To Support Next Generation, Multi-mission Sensors and Sensor Processing Capabilities (ISR, Communications, Cyber & EW)
- Positioning, Navigation & Timing
- Augmented Reality Capabilities For Holistic Sensor Situational Awareness for Tactical Platforms

GROUND:
- Explosive Hazard Threat Detection
- Active Protection Sensor Technologies
- Technologies That Mitigate Counter-Maneuver Capabilities of Near-peer states

AIR:
- Degraded Visual Environment Mitigation Improvements and Mission Equipment Packages Concepts For Future Vertical Lift
- Universal Aircraft Survivability/Active Protection

SOLDIER/SQUAD:
- Asymmetric Threat Detection For Soldiers
- Soldier Power
CERDEC Core
Major Technology Focus Areas

Converged EW/OC/SIGINT Operations

(U) Equip Army Cyber/EW assets positioned around the battlefield with multi-function capabilities that enable them to sense, assess and coordinate a response to any type of RF threat and/or threat activity in near real time to effect the greatest tactical advantage.

Uninterrupted Communications

Ensure robust, reliable and secure access to critical communications and information links across a multi-domain architecture of terrestrial and satellite communication networks in austere, congested and hostile electromagnetic environments.

Networking to Improve Maneuver /Expeditionary Operations

Facilitate initial entry and sustaining operations with rapid network set-up, extending communications range to the tactical edge and enhancing network agility, robustness, scalability of the network to maintaining freedom of movement of troops within the battlespace.

Advanced Platform Protection

Future survivability systems will implement a layered approach that makes use of multiple survivability technologies, acting in coordination, to detect and defeat advanced threats, known and unknown, to provide the maximum protection for the platform.
Tactical Situational Understanding
Resilient, scalable processing and dissemination framework that linking tactical platforms with Home Station elements for shared ISR collection and processing assets, data synchronization and effective and timely decision making at the point of need.

Advanced Sensors for Army Platforms and Dismounted Soldiers
Enable real-time, long-range, fused target detection, identification and handoff in complex environments, day/night, image sharing, flexible operating modes, reduced SWaP, bandwidth.

Scalable, Survivable, Multi-function Radio-frequency Sensing
Advance multi-function RF hardware/software to support requirements for SWaP-C compliant, multi-function ISR sensor suites and to support the development of intelligent automation and exploitation algorithms, sensor protection techniques, such as passive modes of collection, for operation in hostile environments.

Warfighter Augmented Reality
Integrate sensor imagery, geolocation data, accurate situational understanding and command and control information into an integrated mounted and dismounted tactical Augmented Reality (AR) capability for all operational environments.
CERDEC Core
Major Technology Focus Areas

Decisions at the Speed of Battle
Enable an expeditionary force through increased tactical decision-making effectiveness and provide an intuitive commander’s toolset across echelons while reducing infrastructure.

Expeditionary Command & Maneuver
Capability to rapidly deploy, scale and reconfigure command nodes to seize, retain, and exploit the initiative in a dynamic operational environment while maintaining freedom of maneuver.

Assured Positioning, Navigation & Timing
Ensure operations in GPS denied or disrupted conditions by providing accurate and trusted PNT information for dismounted and mounted Soldiers.
Cyber Blitz I

**CURRENT BCT MAIN CP**

- CP
- IO
- S6
- FIRES
- S2
- EW

**INTERIM BCT MAIN CP**

- CP
- IO
- S6
- FIRES
- S2
- CYBER
- EW

**PURPOSE**

Converge cyber electromagnetic activities across multiple warfighting functions within current operations to inform and synchronize:

- Science & Technology
- Acquisition
- DOTMLPF-P
- and Operational Forces, and to demonstrate assured electromagnetic ops while denying that to a regional-peer adversary.

**TRADOC**

- Improved understanding on integration of current / emerging CEMA capabilities and threats
- Informed what is possible, probable and desirable

**ASA(ALT)**

- Reduced risk for technology and transitions

**CERDEC**

- Informed current/planned S&T Investments to address Near, Mid and Far architecture needs
- Improved Field-Based Risk Reduction process
- Expanded engineering workforce understanding of command post operations

**25th Infantry Division & Cyber Protection Brigade**

- Trained and engage integrated, regional-peer adversaries in CEMA environment
- Developed, executed and refined new battle drills incorporating CEMA staff
Cyber Blitz II Timeline:
Sep 2016: OCO-EW Tabletop Discussion
Oct 2016: DCO Tabletop Discussion
Nov 2016: DODIN Tabletop Discussion
Dec 2016: Technical Network Rehearsal
Schedule three planning meetings
17-28 April 2017 Cyber Blitz II Experiment

Cyber Blitz II: Strategic Objectives
• Focus on Objective Converged CP
• Expand CEMA collaboration partnerships
• Integrate Command Post Computing Environment (CP-CE)
• Converge staff functions (organization) and information systems (data sharing) for planning, situational understanding, and response actions
• Consolidate ARCYBER NTC CSCB advances & inform DA EXORD 198-16 (CSCB)

Cyber Blitz II Experimentation Strategy:
• Cyber-EW System-of-Systems Focused (not indiv. SUEs)
• DATE Scenario
• TS/SCI Command Post with JWICS and NSANet
• Develop and explore CSCB gap learning demands for EW, DODIN, DCO/RA, and OCO
• Expand HICON and LOCON roles with strategic and operational forces
• Standardize staff data products and processes to inform doctrine, organization, and materiel system requirements
• Integrate emitters and sensors for DCSGS-A and EW system processing

Cyber Blitz I Key Players:
• Cyber, MC, Intel, Fires, and Maneuver Centers of Excellence
• 25th ID, CPB
• ARCYBER
• ASA/ALT PEOs and PMS

Cyber Blitz II Additional Key Players
• PdM IW
• Enhanced ARCYBER CSCB Role
• 782nd MI (OCO)
• CPB: Cyber Defense
• NSA: Strategic support to CSCB
• FORSCOM CSCB and forces support (1/1 BCT?)

Purpose:
Converge cyber electromagnetic activities across multiple warfighting functions within current operations to inform and synchronize
- Science & Technology
- Acquisition
- DOTMLPF-P
- and Operational Forces,
and to demonstrate assured electromagnetic ops while denying same to a regional-peer adversary.
Drivers
- Reduce CP Footprint
- Increase CP Agility

Focus Areas
- CP Support Vehicles
- Mobile CP Nodes
- CP Equipment Packages
- CP Server/Services Infrastructure

Products / Demonstrators
- Light Mobile Cmd Post
- Cmd Post Platform - Improved
- CAB Mobile TAC CP
- Ultra-Light Cmd Post Node
- MRZR4-D Cmd Post Node
- Display Viewer Application
- Unified Voice Management System
- CPCE Tactical Services Infrastructure v2

Expeditionary Command Post Capabilities

Expeditionary CP

Drivers
- Reduce setup/teardown time
- Simplify CP Architecture

Focus Areas
- Initial Entry Operations
- Mobile TAC CPs

Products / Demonstrators
- Expeditionary CP
- Unified Voice Management System
Unit Engagements

CAB Mobile TAC CP
- NIE 16.1 w/1-6 CAB
- Expeditionary CP
- NIE 16.1 w/1-1 CAV
- FY16 w/ 1-1 CAV DIV MRX

Light Mobile Cmd Post
- NIE 16.1 w/1-1 CAV
- FY17 w/ 1/101st ABN DIV

Ultra-Light Cmd Post Node
- FY16-17 w/ 1/82nd ABN

Display Viewer Application
- Cyber Blitz w/ 25th ID

MRZR4-D Cmd Post Node
- FY17 w/ 1/82nd ABN

Inform Future CP Concepts and Requirements

Obtain feedback on materiel solutions prior to transitions with POR
CERDEC Summary

- **Synchronizing** Requirements, Strategies and Programs
- **Expanding** Advanced Prototyping for Rapid and Deliberate Capability Delivery
- **Leveraging** Enhanced Mutual Reliance to Increase Efficiency, Interoperability and Deliver More Capability
- **Growing** the Next Generation of Scientists and Engineers
Submit Your Technical Interchange Meeting (TIM) Request Here:

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