



Architecting for Resiliency

Army's Common Operating Environment (COE)

SERC

5 October 2011

Mr. Terry Edwards

Director, ASA(ALT) Office of the Chief Systems Engineer (OCSE)

(703) 614-4540

terry.edwards@us.army.mil



Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE 05 OCT 2011		2. REPORT TYPE		3. DATES COVERED 00-00-2011 to 00-00-2011	
4. TITLE AND SUBTITLE Architecting for Resiliency: Army's Common Operating Environment (COE)				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Ofc of the Asst Sec of the Army Acquisition, Logistics, & Technology (ASA(ALT)), Office of the Chief Systems Engineer (OCSE), Washington, DC, 20310				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES 3rd Annual SERC Research Review (ASRR 2011), 5-6 Oct, Hyattsville, MD					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



Operating Environment

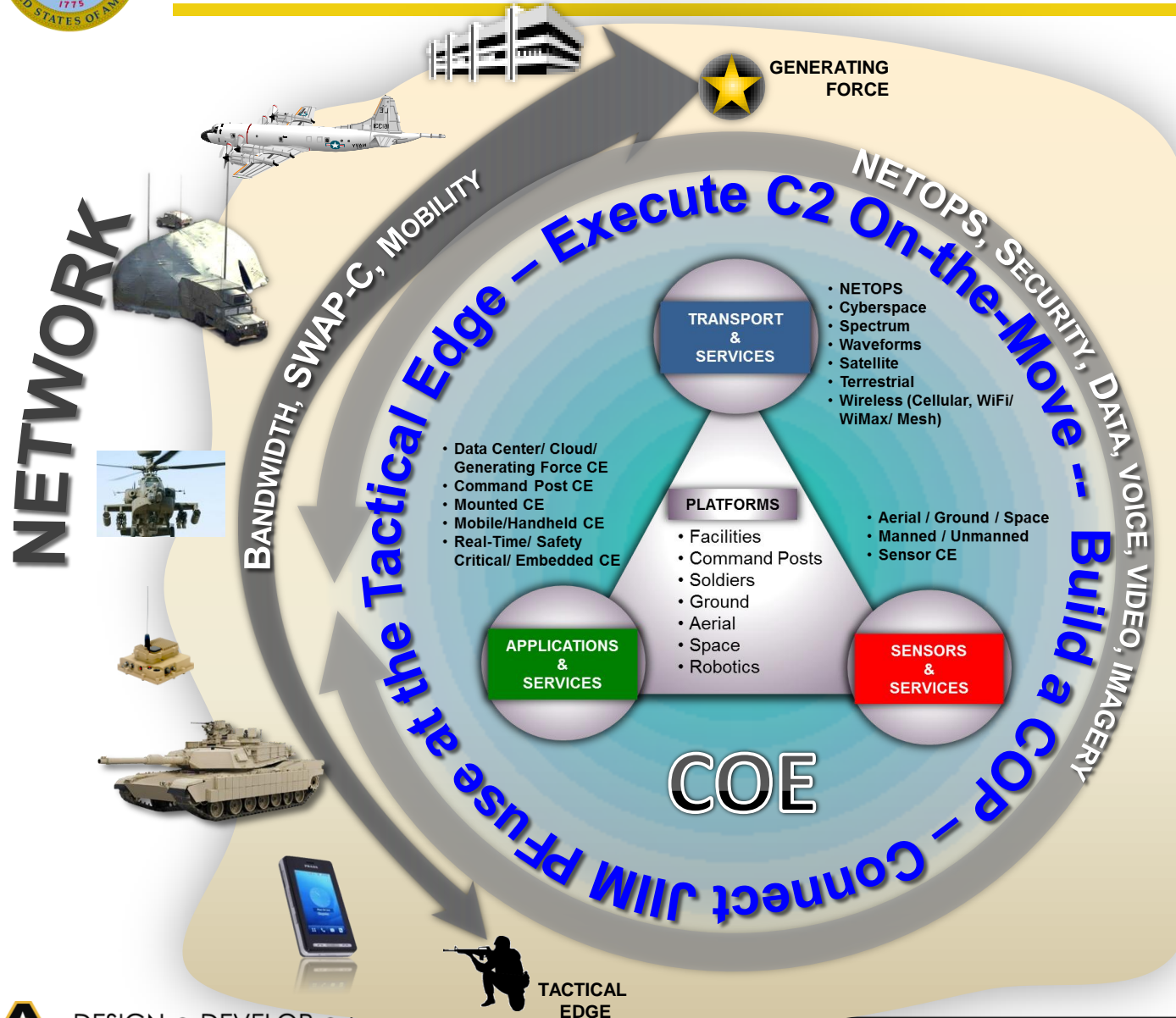


- Uncertain futures & threats outpace our ability to create & field affordable, effective systems
 - Change happens – we need to design for it
 - Adaptability, trustability and affordability must be considered
 - Need to have agility in dealing with requirements change
 - Long design times – exacerbate uncertain future problems, overload designs, and lock out new technologies





Common Operating Environment For the NETWORK



*COE is an approved set of **computing technologies and standards** that enable secure and interoperable applications to be rapidly developed and executed across a variety of Computing Environments*

*Source: Army CIO/G6
COE App C*





COE Implementation Goals



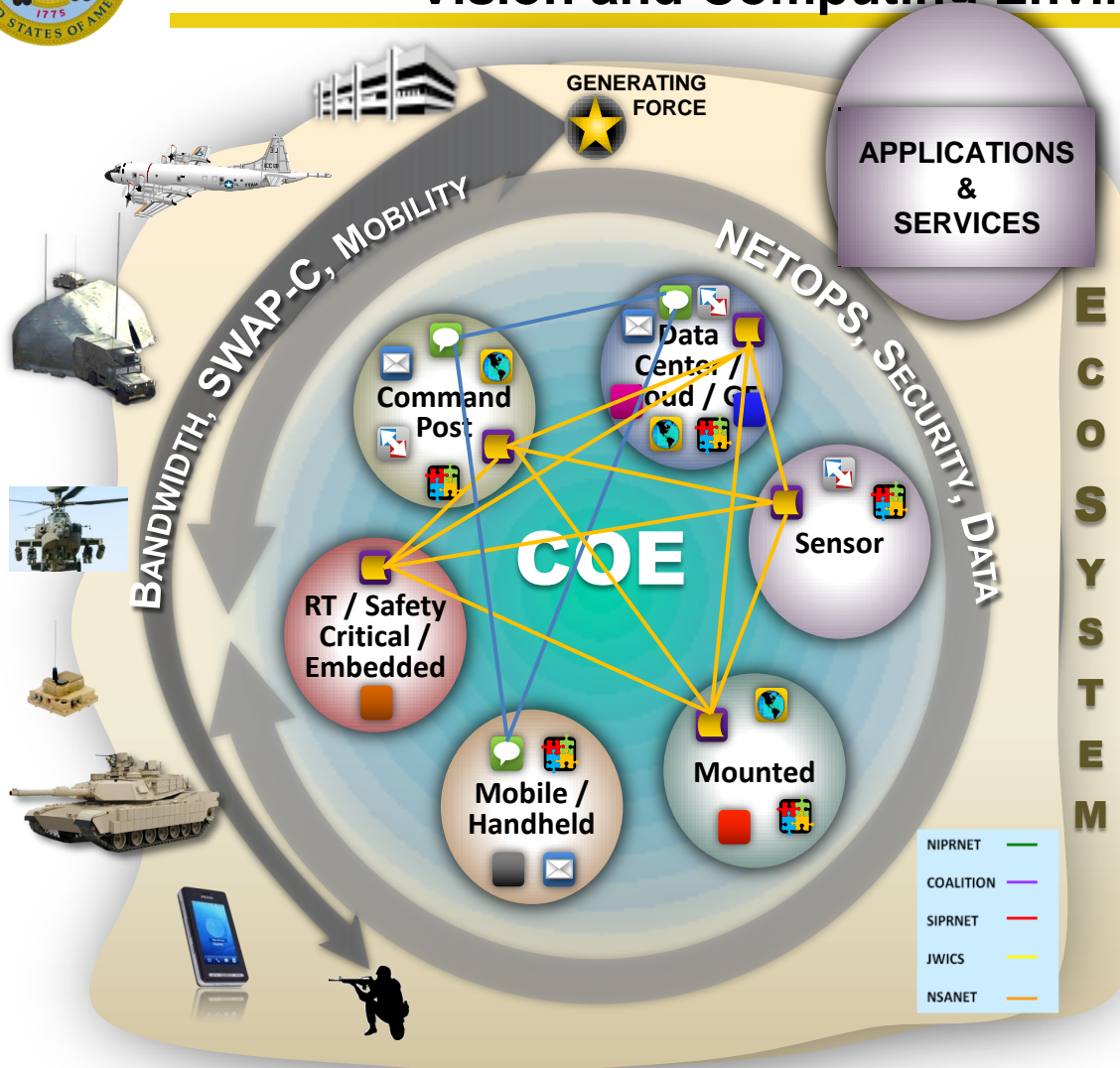
- Standards-based / Industry-driven solutions IAW the CIO/G6 Technical Architecture
- Single Foundation within a Computing Environment (CE)
 - Strategic approach to software re-use
- Abstract software applications from HW/SW infrastructure
 - Reduce lifecycle cost improve supportability
- Foster an agile environment that enables 3rd party development
 - Direct user involvement in Apps development
- Reduce testing and certification timelines
 - Improve speed to market
- Leverage government labs/support structures to fullest extent

Promote innovation and aggressively pursue efficiencies





Apps & Services COE Building Blocks: Vision and Computing Environments



Organize Computing Environments

- Scope of COE implementation requires systematic and manageable approach
- Clustering similar systems based on mission environments to facilitate implementation

Resilient Architecture Design is essential to our Business





Resilient Design



- Build redundancy, flexibility and adaptability into the architecture
 - Leverage Cloud concepts and capabilities
 - Open architectures
- Build robust foundations that is Cyber hardened and resilient
- Leverage process and technology to take on trustability
 - Attribute based identity management
- Built in smart technologies to continuously gauge the health and state of the network.
- Using real live data to model the deployed network to conduct what-if drills.
- Method to dynamically quarantine, isolate and update capability in a deployed state





Establishing the Environment for Resilient Design



- Establish the environment to conduct design trades and product evaluations
 - C4ISR Center of Excellence – Aberdeen Proving Ground, Maryland
- Methodology to evaluate product designs - especially for COTS products
- Architecture through modeling and simulation
- Benchmark testing of critical components
 - Component Labs across the ARMY R&D community
- Instrumented virtual and live environments
 - Ft. Bliss, TX - Agile Testing & Evaluation environment





Acquisition Objectives – for the COE



The Army's COE Implementation Strategy is ..

not only addressing fixing interoperability within the Force, but also accounts for critical strategic level goals as well

- Achieve agility on how we deliver capabilities to the Warfighter faster *(Vice Chief of Staff, 14 Apr 2011)*
- Reduce the life cycle cost of development and sustainment of our IT systems *(DoD Efficiency Initiatives, 16 Aug 2010)*
- Promote an Open Architecture that is standards based which leverages industries best practices and products while reserving government purpose rights *(Implementation Directive for Better Buying Power, 3 Nov 2010)*
- Build on a foundation that is cyber hardened and secure *(Cyber Command)*

