Mobile Applications

Army's Direction and Our Challenges

AFCEA
LUNCHEON

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APEO for Customer Support

Purpose

- **Who are the major players in the Army for Digital Applications?**

- **What are the major players doing to advance the development and fielding of Digital Applications?**

- **What are the challenges the Army is having in getting Digital Applications out into the hands of Soldiers and leaders?**

- **What should Industry be doing to move the Army along?**
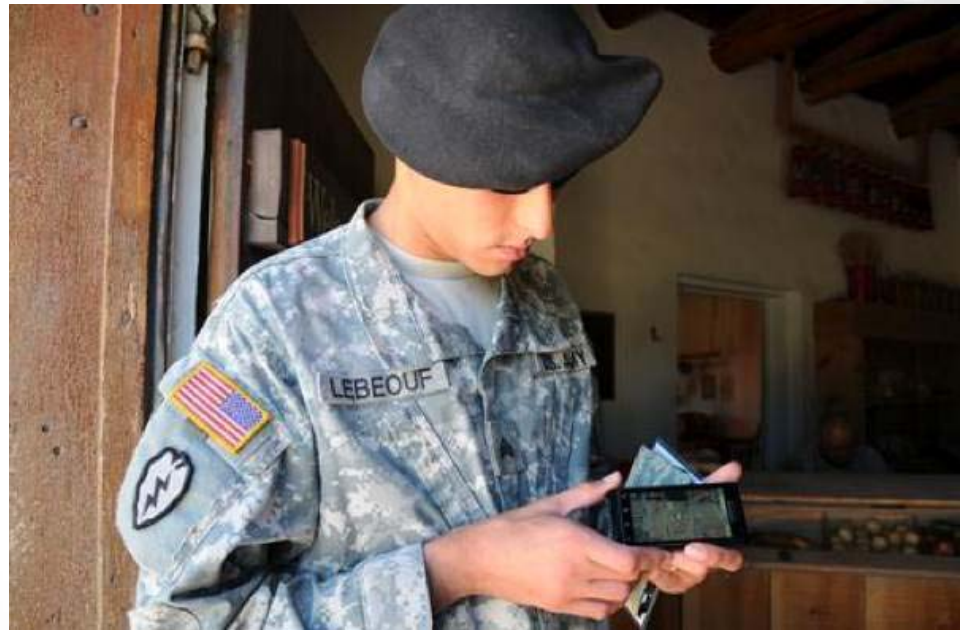
Why is this woman so happy?

Statement of Fact

- **The use of Digital/Mobile Applications for training will be prolific across the Army in support of both combat and non-combat operations.**

Vision

- **The Army will issue every Soldier a smart phone and an AKO account with their Dog Tags upon enlisting in the Army.**

Major Players

- **Training and Doctrine Command**
  - ARCIC – Connecting Soldiers to Digital Applications
  - Signal Center of Excellence – Proponent
- **CIO/G6**
  - Army Enterprise Network
  - Army Common Operating Environment
- **ASA(ALT)**
  - PEO EIS – Host on AKO and Manage Content
  - PEO STRI – Training Development
  - Other PEOs – Focused on System Support

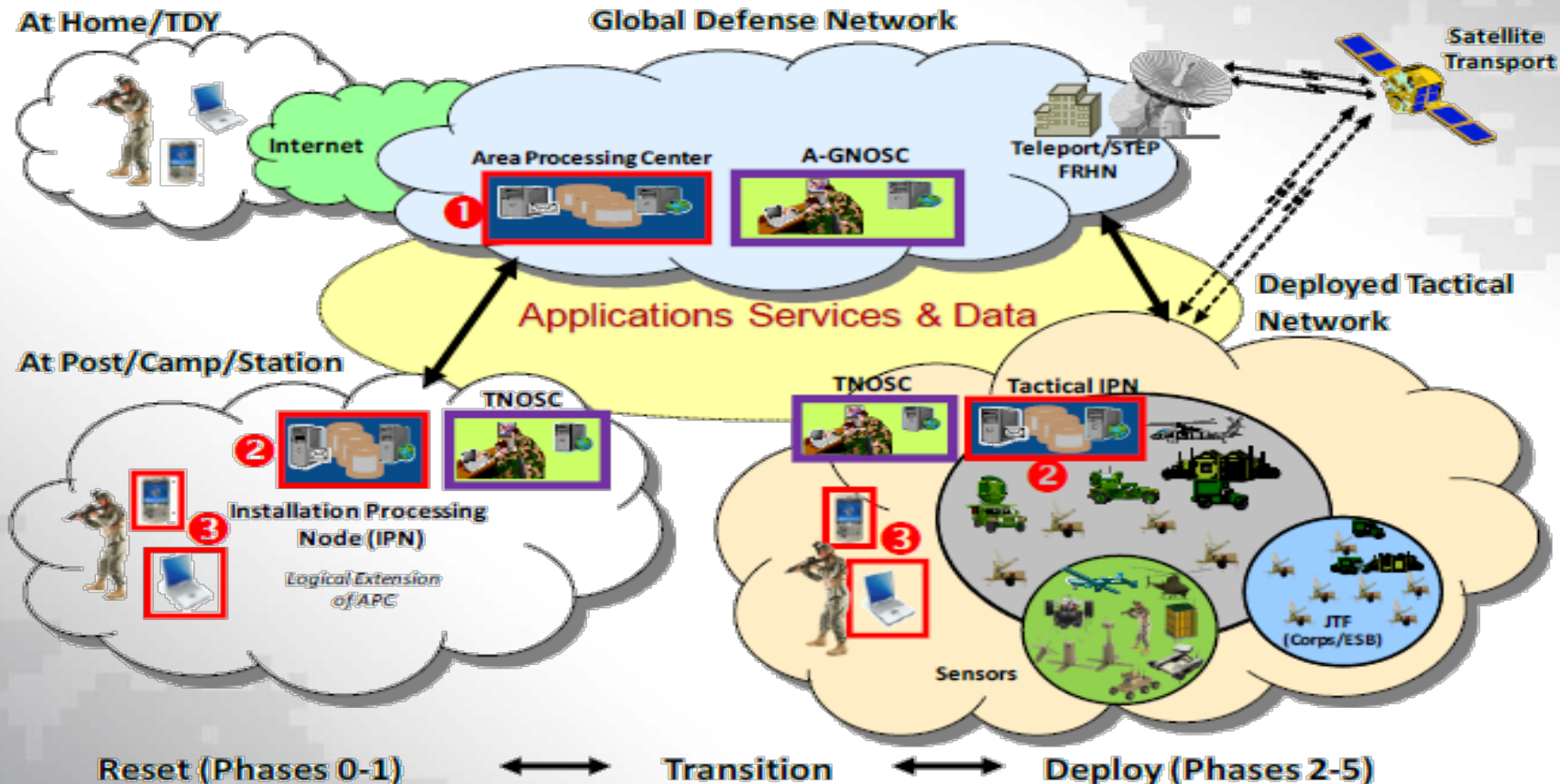# TRADOC Concept for Developing Digital Applications

- **Near Term**
    - Execute within existing resources
    - Organic school staff developer teams; self taught or have the requisite skills
    - Some app development templates/limited training provided by Sig COE SMEs
    - Limited contractor support
- **Far Term**
    - Reorganize the training development function to incorporate mobile technology skills within the work force
    - Development by multifunctional team of experts in subject content, educational theory, instructional systems design and media development
    - Develop digitized learning content to incorporate reconfigurable modules of video, game-based scenarios, digital tutors and assessments tailored to learners
    - Develop complex, interactive, multimedia modules at an enterprise level that harnesses specialized educational media development experts
    - Establish <u>Program of Record</u> to sustain digital applications over time

At Home/TDY

Global Defense Network

Satellite Transport

Internet

Area Processing Center

➊

A-GNOSC

Teleport/STEP FRHN

Applications Services & Data

Deployed Tactical Network

At Post/Camp/Station

➋

TNOSC

TNOSC

Tactical IPN

➋

Installation Processing Node (IPN)

Logical Extension of APC

➌

➌

Sensors

JTF (Corps/ESB)

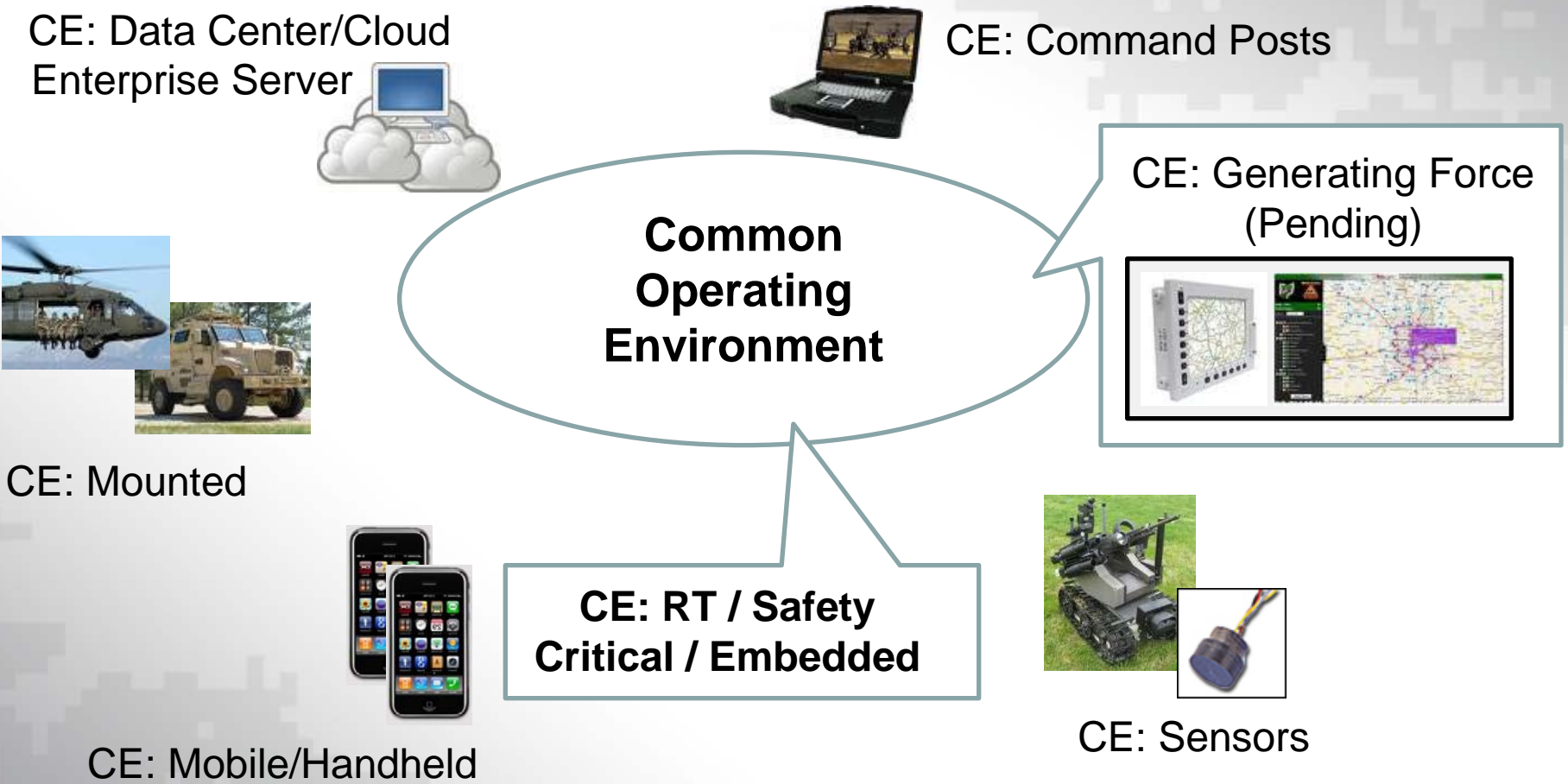**Reset (Phases 0-1)** ⟷ **Transition** ⟷ **Deploy (Phases 2-5)**

➌ **End-User IT Devices for Operational Forces:** Tactical and non-tactical end-user IT devices include mobile devices and client computers.

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- **COE Implementation Plan**
  - Categorize the 7 computing environments based on mission requirements (e.g. SWaP, mobility, bandwidth)
  - Select foundational architecture (HW and SW) for each computing environment
  - Configure each computing environment to interoperate with each other and form the COE
  - Execute transition in a phased approach, over the next 5 years
- **Standing up a COE Governance Forum**

COE Computing Environments

CE: Data Center/Cloud Enterprise Server

CE: Command Posts

CE: Generating Force (Pending)

Common Operating Environment

CE: Mounted

CE: RT / Safety Critical / Embedded

CE: Sensors

CE: Mobile/Handheld

- Mobile/Hand held: Provides operating and run-time system, native and common applications and services, software development kits (SDK), and standards and technologies for hand-held/wearable devices.

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PEO EIS Concept for Developing Digital Applications

- **Near Term**

  - Standing up new PM Office - PM Secure Go Mobile

  - Establish an acquisition strategy to support the development, fielding, sustainment and management of Mobile Applications

  - Develop the supporting infrastructure that can rapidly develop, field, test and sustain mobile applications

- **Far Term**

  - Key member of TRADOC and CIO G6's multifunctional team of experts in subject content, educational theory, instructional systems design and media development

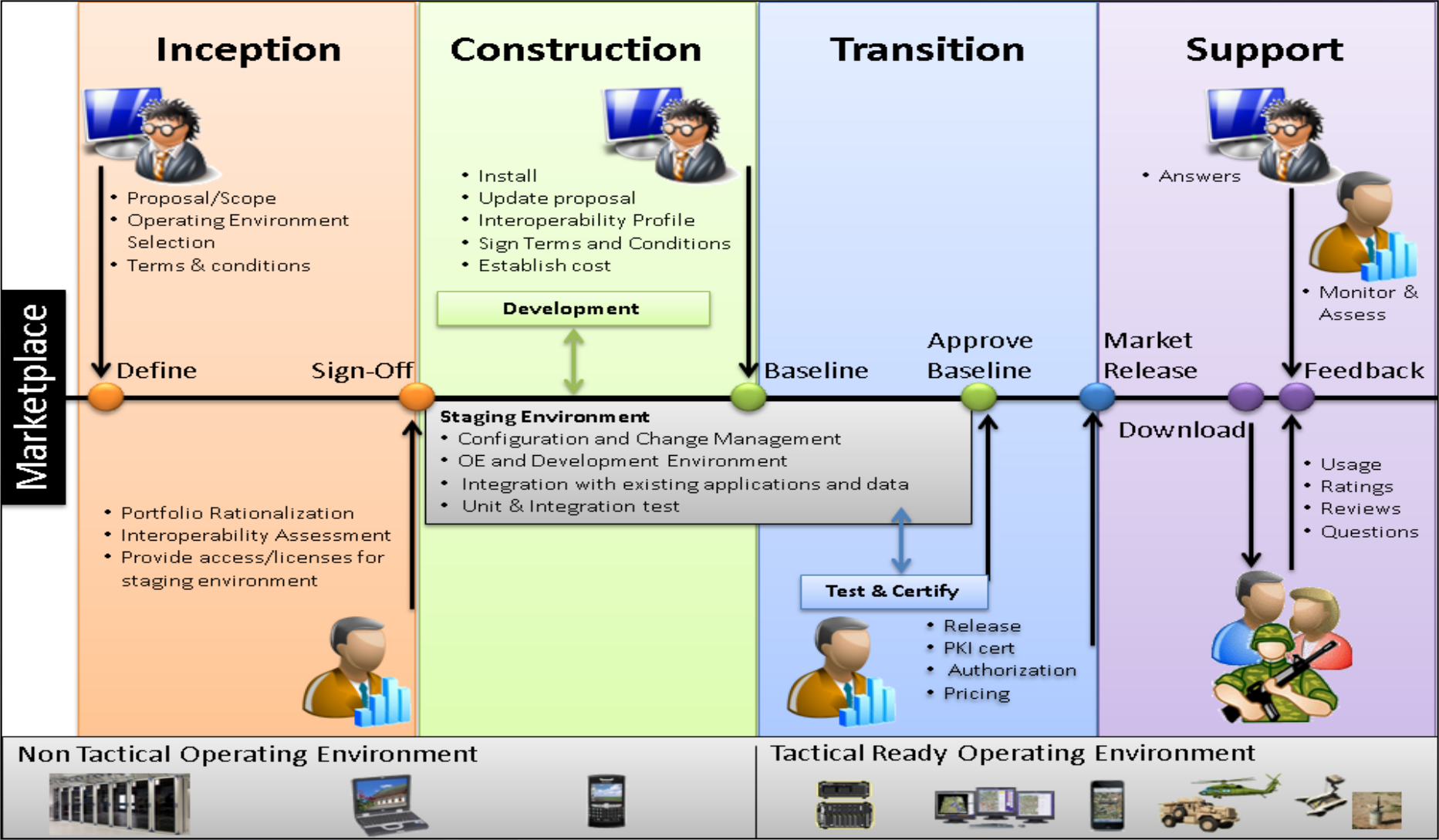# PEO STRI Concept for Developing Digital Applications

- **Near Term**
  - Add Digital/Mobile App requirements to any new IMI or TADSS effort
  - Establish an acquisition strategy to support the development, fielding, sustainment and management of Mobile Applications
  - Develop the infrastructure organizationally and contractually to have the right industry partners on contract that can rapidly develop, field, test and sustain mobile applications

- **Far Term**
  - Be both an active Governance Authority over interoperability and software engineering standards and an exploiter of technological innovation in the Mobile and Digital Applications arena
  - Key member of TRADOC and CIO G6's multifunctional team of experts in subject content, educational theory, instructional systems design and media development
  - Supplier of complex, digitized learning content to incorporate reconfigurable modules of video, game-based scenarios, simulations, digital tutors and assessments tailored to learners
  - Develop complex, interactive, multimedia modules at an enterprise level that harness specialized educational media development experts.

- **Connecting Soldiers to Digital Apps (CSDA)**

  - Hosted two Army Digital Application Workshops (TSIS, I/ITSEC); 3rd scheduled for GAMETECH 2011

  - TRADOC Tasking Order issued 1 February 2011 – Transition Working Group – Decision Brief to the CG TRADOC 14 March 2011

- **CIO G6**

  - Participated in the 1st Table Top discussion on Army Software Transformation (AST) as a ASA(ALT) Material Developer Representative

  - ASA(ALT) responsible for Common Operating Environment (COE) Implementation Plan to support the AST

Army Software Marketplace

Marketplace

Inception
- Proposal/Scope
- Operating Environment Selection
- Terms & conditions

Define — **Sign-Off**

- Portfolio Rationalization
- Interoperability Assessment
- Provide access/licenses for staging environment

Construction
- Install
- Update proposal
- Interoperability Profile
- Sign Terms and Conditions
- Establish cost

Development

Staging Environment
- Configuration and Change Management
- OE and Development Environment
- Integration with existing applications and data
- Unit & Integration test

Transition

Baseline — **Approve Baseline** — **Market Release**

Download

Test & Certify
- Release
- PKI cert
- Authorization
- Pricing

Support
- Answers
- Monitor & Assess

Feedback
- Usage
- Ratings
- Reviews
- Questions

Non Tactical Operating Environment

Tactical Ready Operating Environment

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Challenges - Inception

- **Government** -
  - Assumption is "most Apps should cost less than $100K." If so, is there a business model that will encourage anyone other than small businesses to pursue solutions?
  - How do we address "unsolicited" Apps, especially from Soldiers?
  - Do we take a "push" or "pull" approach?
- **Industry** -
  - Does ROI constrain App development?
  - Will large businesses "play" - how does the Government encourage them?
- **Common** -
  - How do we keep App concurrence with rapid commercial HW/SW evolution?
  - How do we leverage commercially available mobile platform functionality?
  - How does the Government set standards for "cross-platform" requirements?
  - Who owns the data rights to Apps?

Challenges - Construction

- **Government -**
  - Is there a short supply of mobile application developers?
  - Is the Business Model pay upfront or pay per download?
  - How do we "tweak" an "almost right" App?
  - How do we synch Apps with the Army's Learning Management System?
- **Industry -**
  - How do you solve the security concerns with data at rest and data in transit?
  - Is there a standard architecture or specification for DoD Mobile App development?
- **Common -**
  - How do we apply the "default" standard for Information Assurance (IA) for "pulled" Apps?
  - How do we ensure Apps conform to current tactics, techniques and procedures?
  - How do we test for functionality?

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Challenges - Transition

- **Government -**
  - How do we "publicize" the instructions for "pulled" Apps?
  - How do we distribute approved Apps?
  - How do we manage "unapproved" Apps?
- **Industry -**
  - How will the Government manage App fielding?
  - What is the role for Industry in "transition?"
  - Is this a Government-Owned, Contractor-Operated (GOCO) operation?
- **Common -**
  - How do we manage user feedback?
  - What metrics do we use to manage App use and effectiveness?

Challenges - Support

- **Government -**
  - How do we structure Post Production Software Support?
  - Is there a HELP DESK?
  - How do we manage configuration control of Apps?

- **Industry -**
  - Is there a warranty requirement?
  - How do we make changes in fielded Apps?

- **Common -**
  - How do we keep Apps current with emerging tactics, techniques and procedures?
  - How do we manage obsolescence?
  - How do we mange HW/SW evolutions to ensure backward compatibility?

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Government Issues and Challenges

- **Potential of using Mobile Apps to help solve some training and operational issues**

- **Some ideas about the objectives**

- **Some ideas about the requirements**

- **Number of known "unknowns"**

- **Concern is a number of unknown "unknowns"**

- **PEO STRI needs input from Industry to help give focus to the known "unknowns" and help in indentifying the unknown "unknowns"**

Industry Way Ahead

- **Do some research – understand the business opportunity**
  - Mobile Apps integral to the Army's COE: combat and non-combat operations
  - Expands Army's LVC training vision – persistent learning
  - Future TADSS developments will include Mobile Apps
- **Help PEO STRI shape the future – need your input now on:**
  - Acquisition and Sustainment Strategies
  - Potential Business/Pricing Models
  - Potential Distribution Infrastructures
  - Best Practices/Lessons Learned

Authoritative Sources

Common Operating Environment Architecture – CIO G6 1 Oct 2010

❑ http://ciog6.army.mil/ArmyEnterpriseNetworkVision/tabid/79/Default.aspx

DOD Instruction 8410 – NetOps for the Global Information Grid (GIG)

❑ http://www.dtic.mil/whs/directives/corres/pdf/841002p.pdf

Mission Command Essential Capabilities (MCEC) Initial Capabilities Document (ICD)

Federal Information Processing Standards Publications FIPS 140-2 Security Requirements for Cryptographic Modules

❑ http://www.itl.nist.gov/fipspubs/by-num.htm

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Email or contact Mike with your suggestions.

Back Up Slides

COE Computing Environments

Data Center/Cloud CE: Service-based infrastructure for hosting and accessing enterprise-wide software applications, services and data. Common services and standard applications for use by a large number of users over wide area networks.

Command Post CE: Client and server software and hardware, as well as common services (i.e. network management, collaboration, synchronization, planning, analysis) to implement mission command capabilities.

Mounted CE: Provides operating and run-time systems, native and common applications and services, software development kits (SDK), and standards and technologies to implement mission command.

Mobile/Handheld CE: Provides operating and run-time system, native and common applications and services, software development kits (SDK), and standards and technologies for hand held/wearable devices.

Sensor CE: Provides a common interoperability layer, implementing standards and technology for data services, NetOps, and security for specialized, human-controlled or unattended sensors. The Sensor CE does not specify specific hardware and software for the sensors.

Real-Time/Safety Critical/Embedded CE: Provides the real-time infrastructure that allows the development of telemetry(i.e. avionics and vetronics) as well as the integration of vehicle health sensors. This CE will include an abstraction layer to reduce the burden of integrating C2, Comm and Sensor systems to the real-time platform.
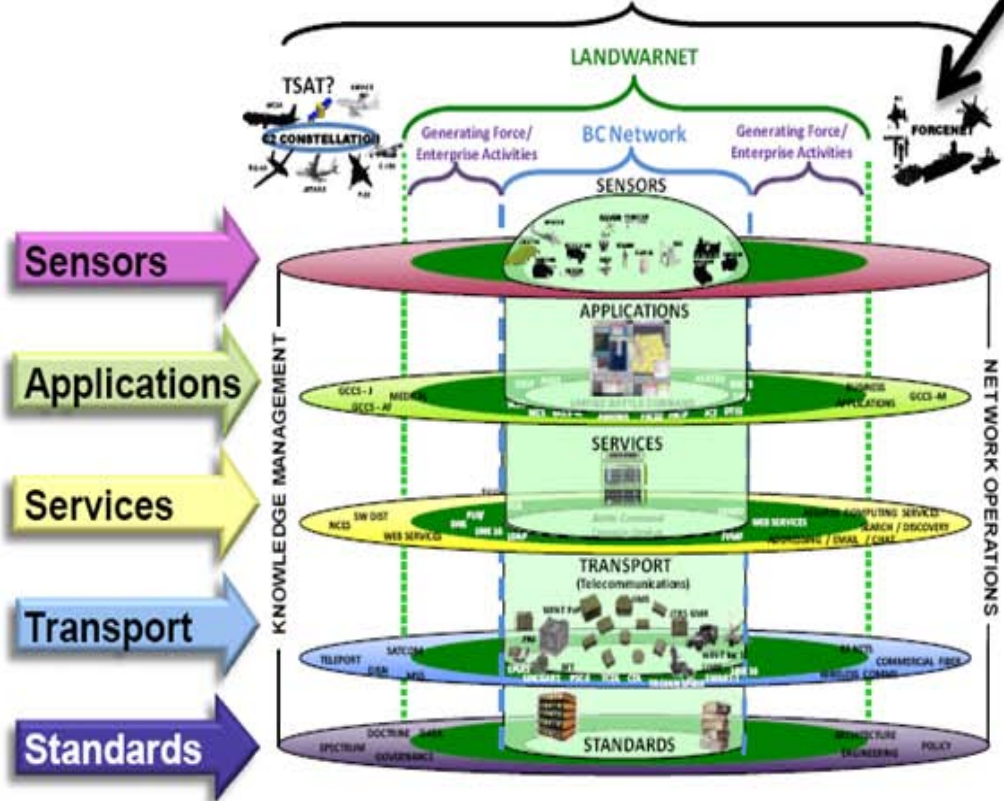
Generating Force (Pending) CE: Business systems span all Computing Environments and include Post, Camps and Stations, and the Operating Force. This also includes the Army's Enterprise Resources Planning (ERP) systems.

Army Enterprise Network – Enterprise View

Army Enterprise Network Vision:

Army Soldiers, Civilians, and mission partners have the right information at the right time at the right place.

Global Information Grid (GIG)

- Sensors
- Applications
- Services
- Transport
- Standards

App Dev Complexity Matrix

	Simple	Low	Medium	High
Dollar Value	$5K - $25K	$25K - $ 50K	$50K - $100K	$100K +
Technical	Porting PDFs Text to Smart Phone	Video-Based Inst Digital Field Manuals	Interactive Inst Geo/Map-Based Training	3D Graphic Sys Constructive Sim Augmented Reality
Example	Military Rank/Insignias	Educational Games (flash card, quiz)	Basic Mission Planning	Mission Planning Rehearsal, AAR
Example	O&M Manual	O&M Videos	Remove and Replace Parts	Interactive Dialogue, Tool Selection, Repair, Reach Back
Example	PT Info/ BMI Calculator	Send PT Results to Someone, Progress Graph	Personal Training Plan, Targeted Inst	Avatar would morph into a new you based on progress
Contract Type	Simplified Acquisition Procedures (SAP)		Multiple Award ID/IQ	