



**TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.**

## **DoD Executive Panel: NDIA Systems Engineering Conference 2016**

U.S. Army Systems Engineering Accomplishments and Challenges

25 OCT 2016

**Mr. Jyuji Hewitt**  
SES, Executive Deputy to the Commanding General  
*U.S. Army Research Development and Engineering  
Command (RDECOM)*



# Army ... How We Fit



**GEN David G. Perkins,**  
CG TRADOC



Training & Doctrine Command

**Requirements**

**RDECOM Mission**

Provide innovative research, development and engineering to produce capabilities that provide decisive overmatch to the Army against the complexities of the current and future operating environments in support of the Joint Warfighter and the Nation.

**GEN Gustave F. Perna,**  
CG AMC



Army Materiel Command

**Mission Command**

**MG Cedric T. Wins,**  
CG RDECOM



**Ms. Katrina McFarland,**  
ASA(ALT)



Assistant Secretary of the  
Army for Acquisition,  
Logistics, and Technology

**Programs**

**RDECOM Vision**

To be the Army's enabling command in the development and delivery of capabilities that unburden, empower, and protect the Warfighter.

**Army Systems Engineering: Integrating Capabilities Efficiently**

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# What I Want to Leave You With



- **Engineering Competency Workforce Development**
  - “DoD cannot effectively support the Warfighter nor retain its technological superiority without a competent and innovative organic engineering workforce, both military and civilian.”\*  
*\*Better Buying Power 3.0 Guidance*
  - “The Army has identified 277 technical competencies; spanning the all discipline engineering and special skillset needed by Program Executive Offices and laboratories.”\*\*  
*\*\*Better Buying Power 3.0, Strengthen Organic Engineering Capabilities Initiative Summary Report*
- **Enterprise Product Data Management/Lifecycle Product Data Management**
  - Enterprise Product Data Management - RDECOM is working to provide a single authoritative engineering data source for Army weapon systems to enable technical data sharing & collaboration across the Army enterprise.
  - Lifecycle Product Data Management will increase synergy between engineering and logistics across the lifecycle using common data formats & processes.
- **Systems Engineering (SE) in Cyber Resilient Weapon Systems**
  - SE has a key role - systems engineering must ensure that security and resilience needs are identified, evaluated, and implemented across all acquisition phases.
  - RDECOM is working with the Assistant Secretary of the Army (Acquisition, Logistics and Technology) System of Systems Engineering & Integration to address the cyber resiliency needs of Program Managers utilizing systems engineers and cyber Subject Matter Experts.

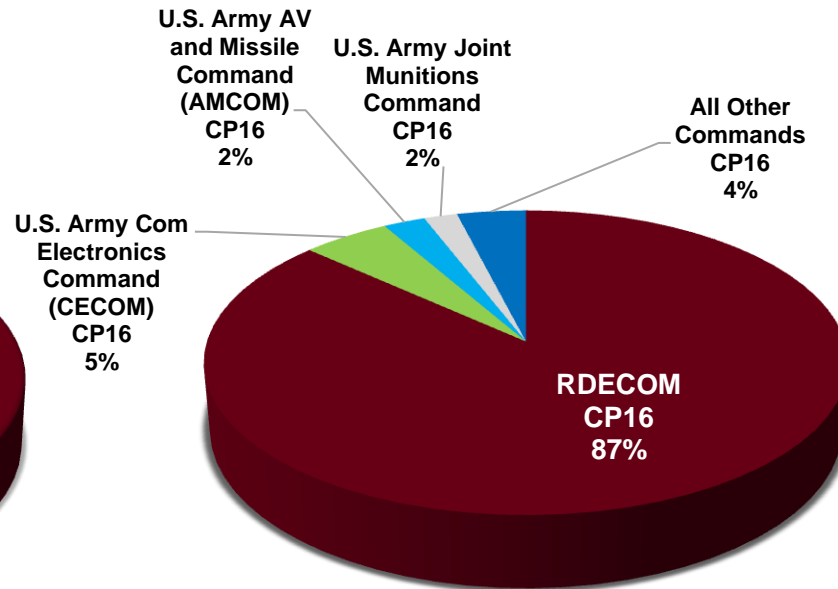
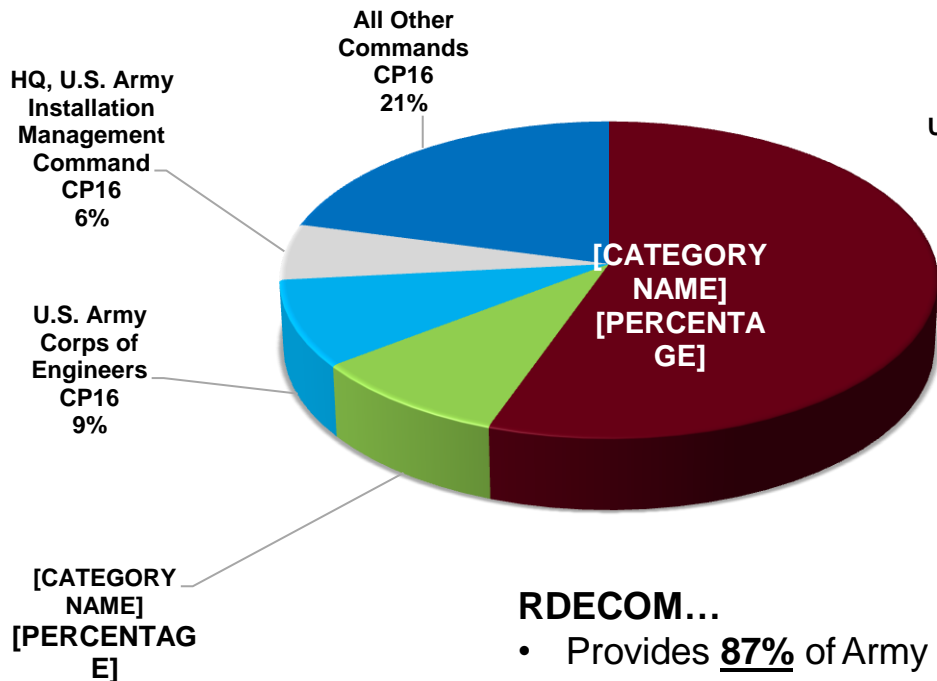


# Army Engineers and Scientists Workforce Composition



Army's CP16 Strength by Command

AMC's CP16 Strength by Command



## RDECOM...

- Provides **87%** of Army Materiel Command's (AMC's) engineering workforce, representing over **67%** of the Army's civilian engineering workforce
- Employs **8,460** Government Engineers
- Provides an integrated cradle-to-grave engineering resources for the development of new systems and the life extension of legacy systems

## Career Program (CP) 16 – Non-construction Engineers and Scientists

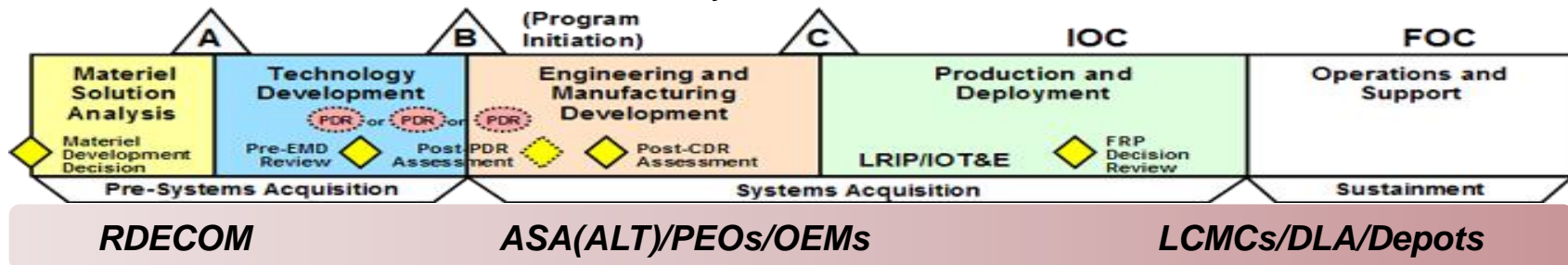


# Product Data Management (PDM)



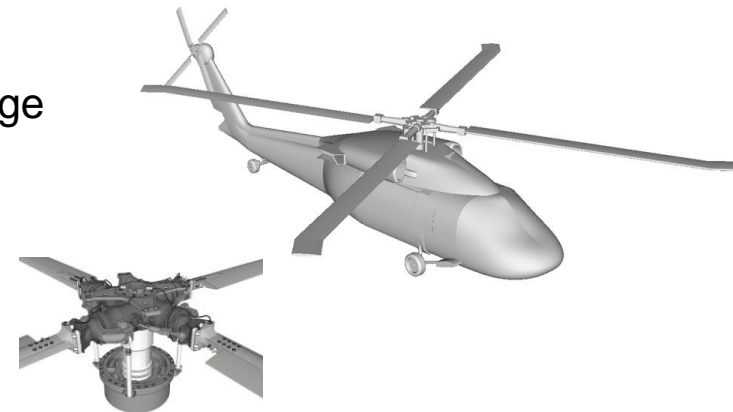
- **Lifecycle Product Data Management (LPDM)**

- LPDM is an End-to-End (E2E) integrated capability to manage Army weapon system engineering and logistics data throughout the lifecycle
- Increase collaboration across the lifecycle stakeholders



- **enterprise Product Data Management (ePDM)**

- RDECOM is implementing enterprise Product Data Management (ePDM) to provide one source for authoritative engineering data
- Pilot for ePDM scheduled for February 2017
  - Demonstrates Cloud-Based Commodity Data Storage
- Key Stakeholders:
  - RDECOM Engineering
  - Program Executive Offices (PEOs)
  - Original Equipment Manufacturers (OEMs)
  - Lifecycle Management Commands (LCMCs)
  - Defense Logistics Agency (DLA)



**Enables the Digitization of Program Data Supporting Concurrent Engineering**

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# Engineering Cyber Resilient Weapon Systems



## • Army Strategy

- Cyber Vision: Develop a robust Systems Engineering process to lower cyber-risk and enhance resiliency of weapon systems
  - Develop a weapons cyber resiliency architecture using Systems Engineering principles/tools to support PMs
  - Bring together acquisition ‘cyber’ entities across the Army:
    - Science & Technology
    - Acquisition
    - Software Developers
    - Sustainment



## • Army Approach

- Cyber Team Mission: Develop architecture that allows flexibility and best practices from each domain to be used in support of Weapon Systems development
  - Establish cross domain team of SE and Cyber SMEs
  - Leverage existing Cyber/SE tools
    - Cyber Dashboard: Program Manager Tool to monitor program cyber compliance
    - Integrated Systems Engineering Framework: Systems of Systems approach
    - Lifecycle Product Data Management: Capability to manage Army weapon systems

**Implementation of Cyber Resilient Weapon Systems protects the future Warfighter**

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# Summary

- **Army Systems Engineering continues to emphasize efforts on:**
  - A System of Systems Engineering approach to enable interoperability and collaboration across the Enterprise.
  - Integrating SE practices to decrease acquisition lifecycle cost, technical and operational risk.
  - Researching innovative SE methods, processes and tools.
  - Informing/training/energizing the workforce to be fluent in SE.
  - Fostering communications, relationships and partnerships with OSD, other government agencies, industry and academia as a trusted agent on SE.



**Army SE Efforts & Initiatives Support the Warfighter**

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