

**GSAW
2006**

**Information Assurance
in Government Space
Systems:**

From Art to Engineering

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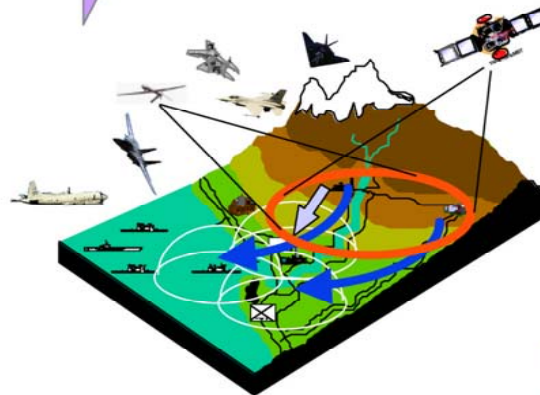
Toward the Global Information Grid and Net-Centric Operations

Past Traditional Stove-Pipe Operation



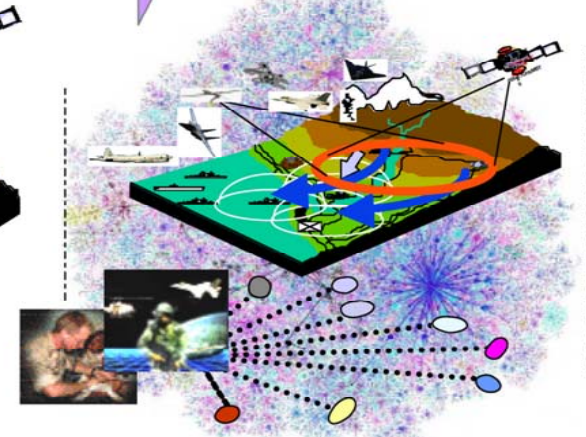
Islands of Joint situational awareness primarily composed of Red and Blue force location information with various latencies.

FY03-FY10 Interoperable Transformation



Systems, units or forces provide **pre-engineered services** to and accept services from other systems, units or forces ...

FY06-FY20 Net-centric Operation



People throughout the **trusted, dependable and ubiquitous network** are empowered by their ability to access information.

Graphics developed by DISA

Information Assurance is in Transition

- **The Global Information Grid concept is changing the computing landscape**
- **DoD security policy and processes are changing**
 - Requirements (DoDI 8500.2)
 - Certification and Accreditation
 - Boundary Protection (Cross Domain Solutions)
 - DoD IA for Space policy signed
 - AFSPC/LC designated accreditor
 - NSA changes (Space SPO)
- **NSS Acquisition Management process has changed**
 - DoD 5000.2 → NSS 03-01
- **NSS Engineering has evolved**
 - Systems Engineering
 - Software Engineering

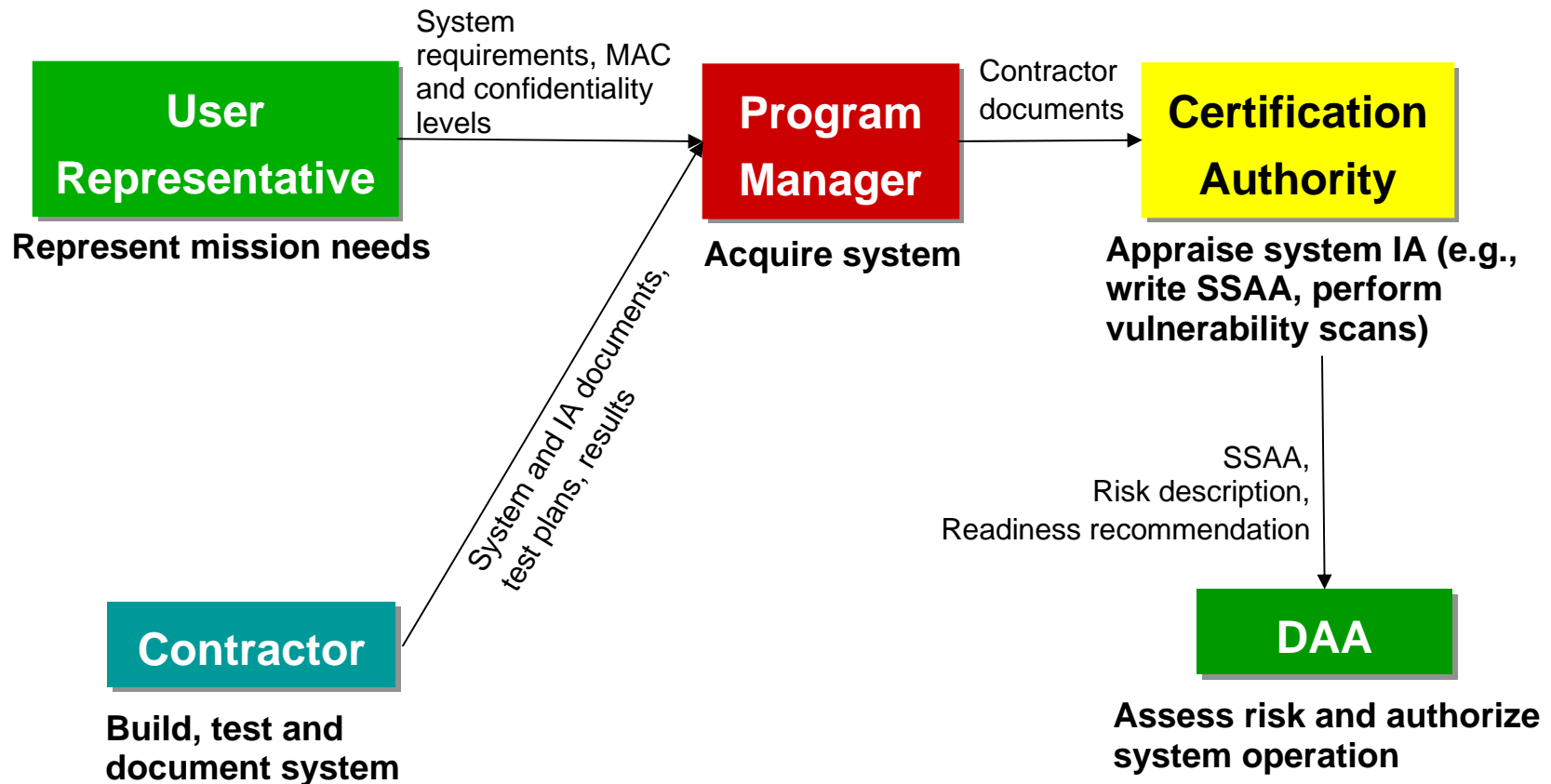
Moving NSS IA From Art to Engineering

- **What do we need to have:**
 - Well-defined role in system acquisition processes
 - Well-defined role in system engineering processes
 - Consistent Certification and Accreditation process
 - Identify Capabilities
 - Reasonable cost models
 - Understandable Requirements
 - Express Architecture in system perspective
 - Agreed to verification procedures
 - Well-defined roles and responsibilities
 - Contracting mechanisms to support engineering
 - Research to support future directions
 - Appropriate training and expertise

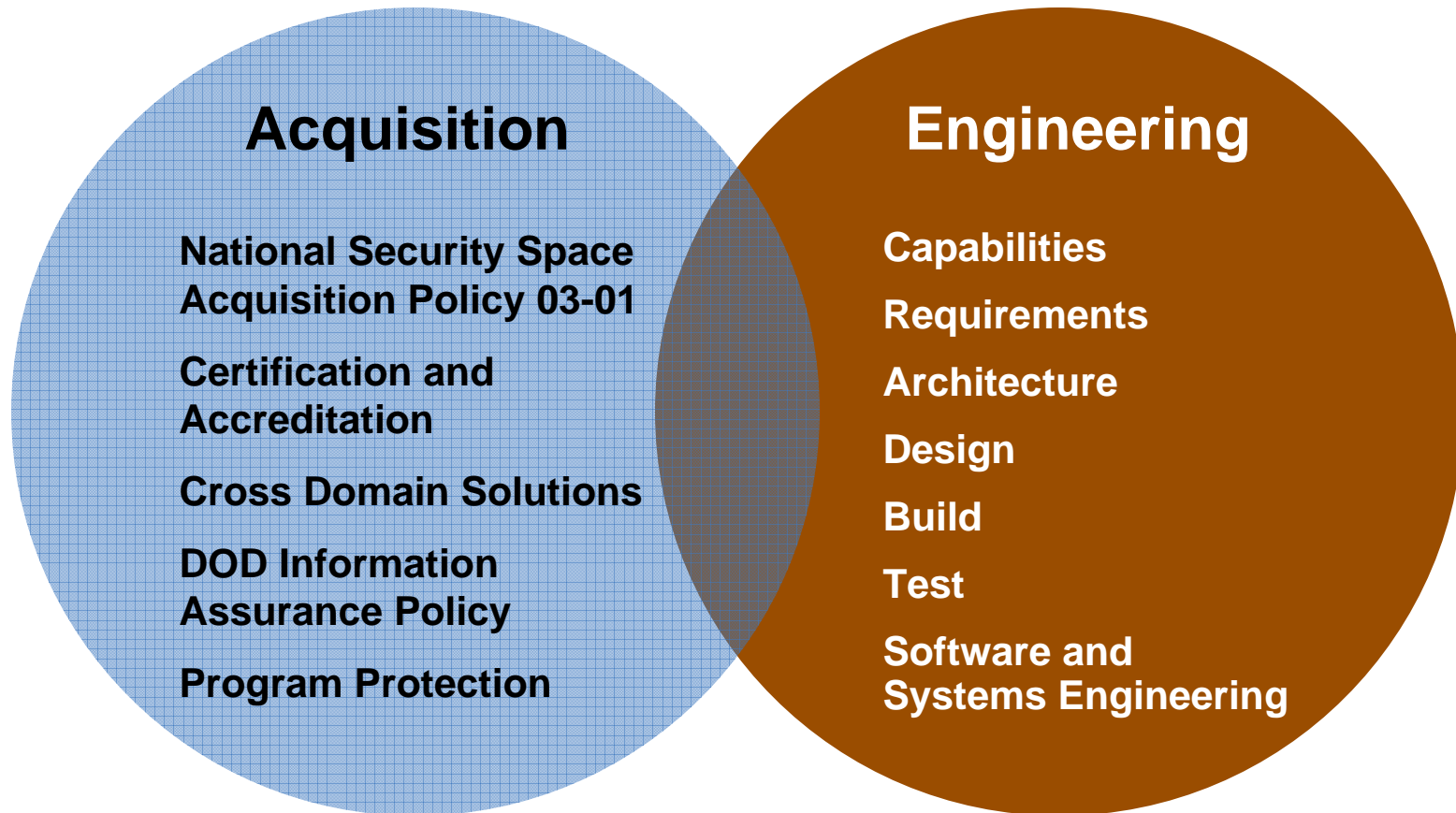
Topics Discussed at IA Workshop

- **Roles And Responsibilities**
- **Contracting for IA**
- **IA Research Directions**
- **IA Cost Modeling**
- **Key Management Architectures**
- **IA Requirements Interpretations**

C & A Roles, Responsibilities, and Relationships



IA Acquisition and Engineering in National Security Space Systems



Research Challenges

- **Software Assurance**
- **Dynamic “Communities of Interest”**
 - Cross-organization
- **Network and system administration**
 - Dynamic, federated systems
 - Trust management
- **High assurance**
 - Higher assurance mechanisms needed for highly connected systems
- **Security agility**
 - Respond to failures/attacks
- **Confidentiality and integrity protection for data**
 - In transit and at rest
- **Information availability**

Network Security – At What Cost?

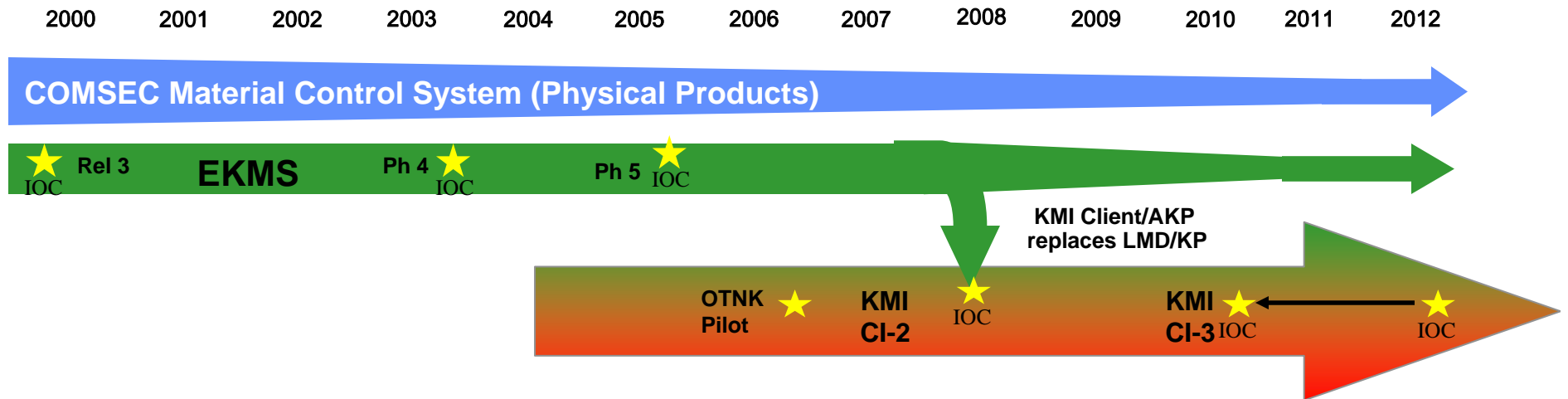
- **Establishing network defenses**

- How much should you budget?
 - Acquisitions?
 - Labor?
 - Licenses?
 - Support?
- What are the cost tradeoffs?
- What would you do if you did not get enough money?

- **Maintaining network defenses**

- How much does it take to maintain your defenses?
 - Acquisitions?
 - Labor?
 - Licenses?
 - Support?
- How do you justify these costs in the POM?
- What would you do if you were short changed?

Key Management Infrastructure (KMI) Support for GIG



- **Transform Key Provisioning from human intensive operations to Net-Centric operations**
 - Support infrastructure changes to enable direct delivery of keying material to End Cryptographic Units.
 - Support network management of key provisioning services via the net.
- **Support new Crypto Modernization Algorithm Suite (JTRS, WIN-T, TC, etc)**
- **Provide Seamless Foreign Interoperability and Releasability to enable Cross Domain Solutions and Allied and Coalition sharing.**

Backup Charts

Security is Policy driven

