



# DASN (RDT&E)

Deputy Assistant Secretary of Navy,  
Research Development Test and Evaluation

## National Defense Industrial Association 15<sup>th</sup> Annual Systems Engineering Conference, San Diego, CA

### “Engineering Complex Systems”

Ricardo Cabrera

23 October 2012

# Naval Systems

NDIA 15<sup>th</sup> Annual Systems Engineering Conference



SHIPS AND AIRCRAFTCARRIERS



SUBMARINES



AIRCRAFT



C4ISR SYSTEMS



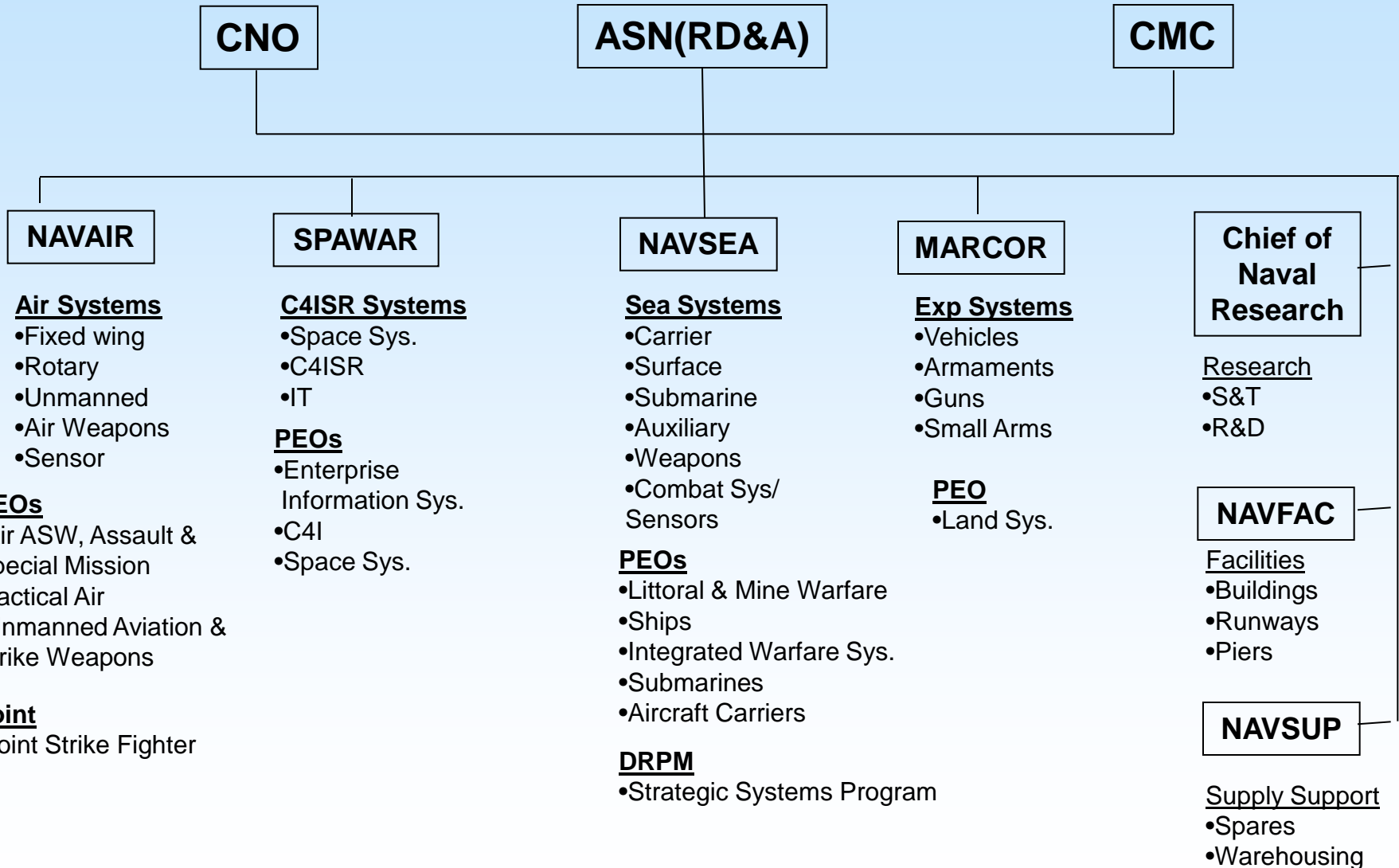
WEAPON SYSTEMS



LAND COMBAT SYSTEMS

# Department of the Navy - Acquisition Organization

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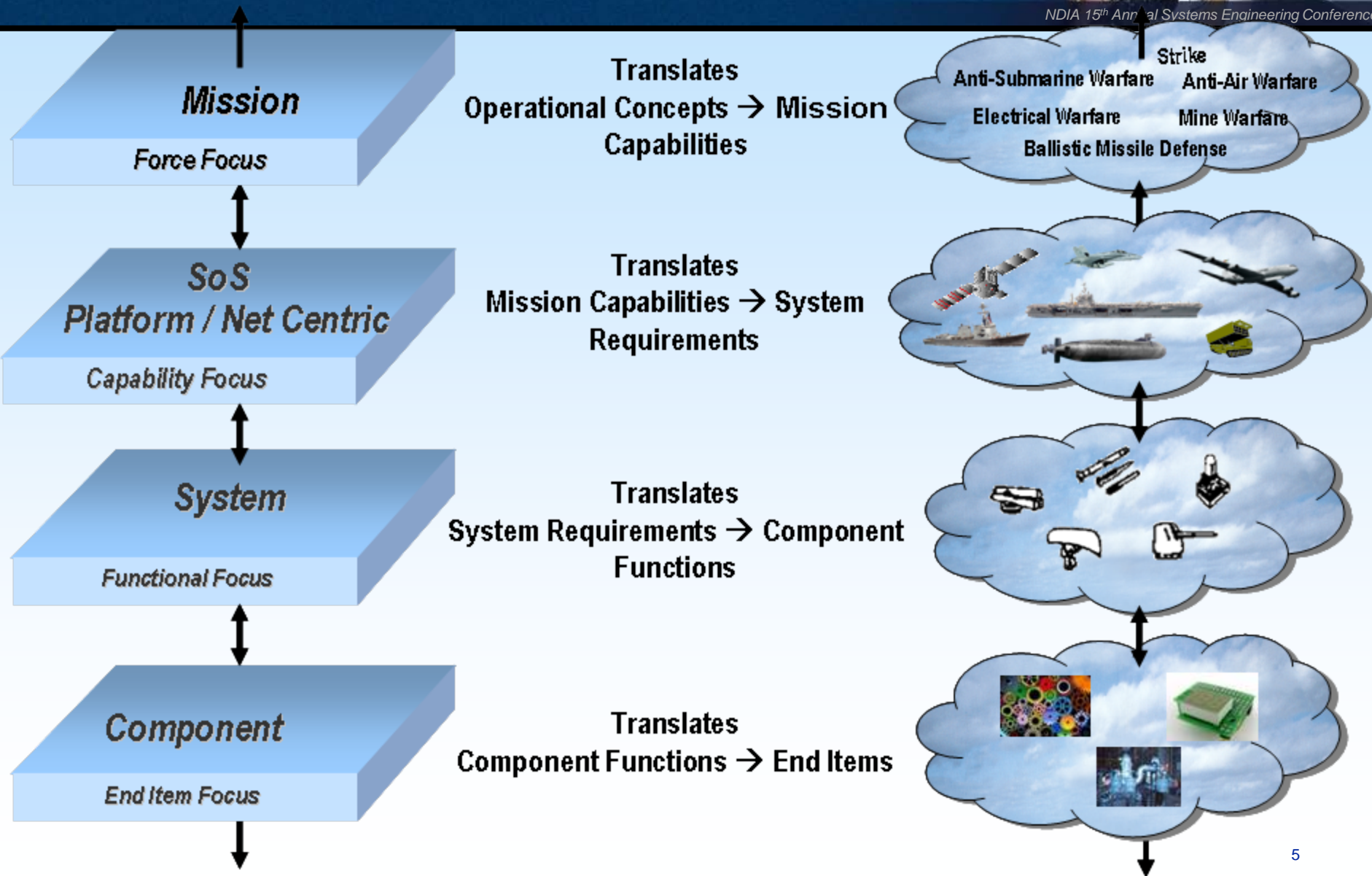
# ASN (RD&A) Engineering

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- ◆ **ASN (RD&A) Priorities**
  - Getting the requirements right
  - Making every dollar count
  - Performing to plan
  - Minding the health of the industrial base
  - Strengthening the acquisition workforce
  
- ◆ **Key Focus Areas for Systems Engineering**
  - Systems engineering at the mission level
  - Growing a competent technical workforce

# DON Systems Engineering Hierarchy

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# Growing a Competent Technical Workforce

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Operations  
Analyst / Research

Mission Engineering

Systems Analysis

Platform

Net Centric

Component  
Engineering

Systems  
Engineering

Technical Domain  
Expert

Mid  
Level

System  
Engineering  
Management

Project / Program  
Management

Engineering and  
Technical Practices

Entry

Software Programmers

Electrical Engineering

Nuclear Engineering

Mechanical Engineering

Chemistry

Chemical Engineering

Physics

Civil Engineering

Naval Architecture

Math

Aeronautical / Aerospace Engineering



# Discussion



# Additional Slides



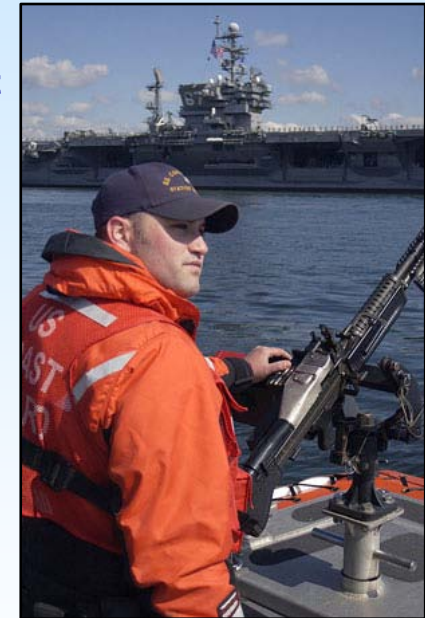
# Implementing Mission Engineering

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- **DOTMLPF Experimentation**
- **Authoritative mission-level architectures & mission threads**
- **Alternative trades recommendations developed by mission engineers in collaboration with requirements and program offices**
- **Trades reviewed by Fleet - HQ - Providers Leadership**
- **Mission-based Testing to answer “Does the System support Mission Critical Operational Issues?”**
- **Fleet Introduction of New Capabilities**

**Impact of Mission Engineering includes support for:**

- **CONOPS**
- **Capability Needs**
- **Operator IPLs**
- **JCIDS**
- **P3I to existing PoRs**
- **PPBE**
- **Gate Reviews**
- **R&D Investments**
- **Training**
- **Manpower**
- **Facilities**
- **Policy**

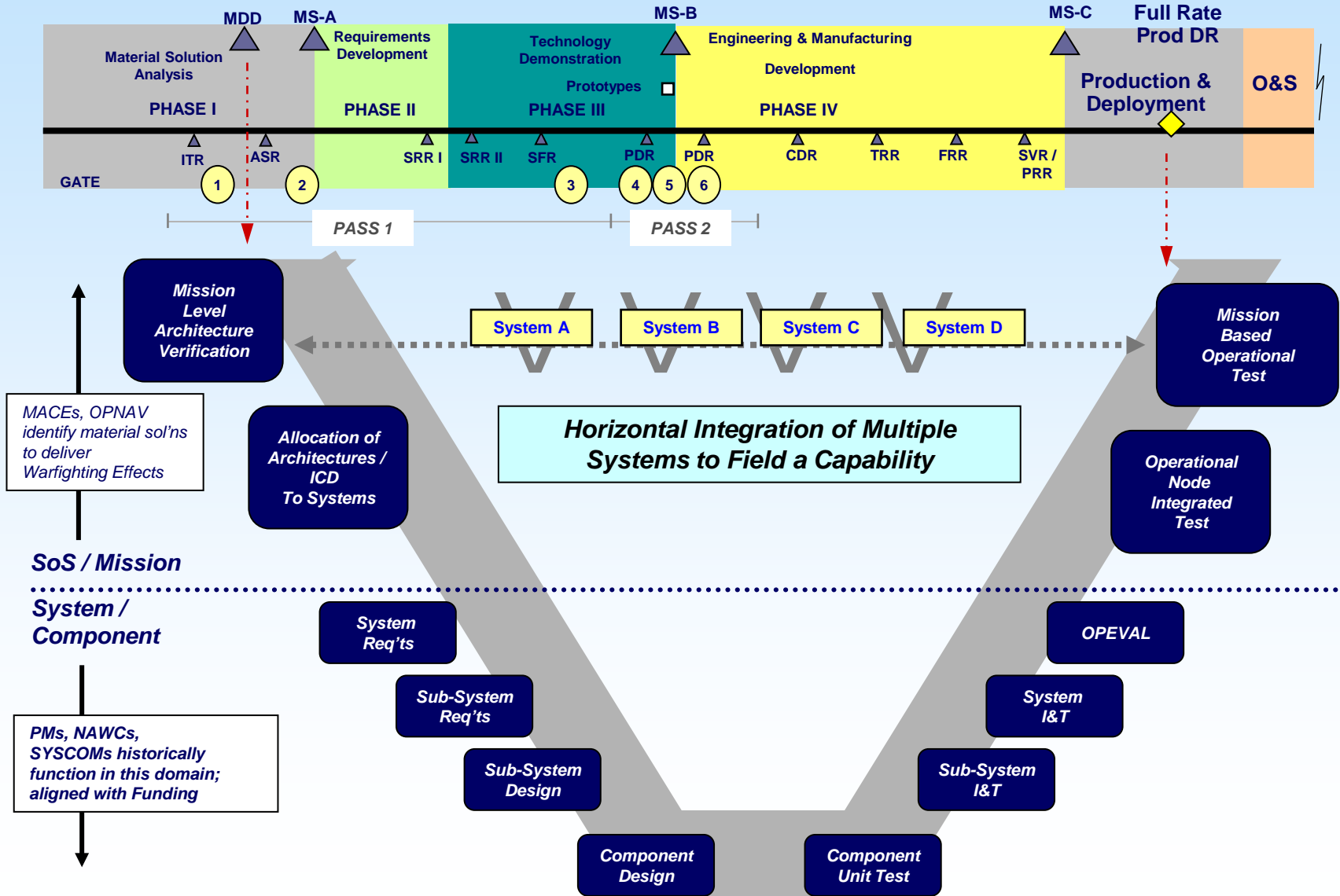


Mission Engineering supports DoN in... “regaining ownership of the technical / requirements / cost trade space.” *Jim Thomsen, PCD ASN RDA, 18 Oct 2010*

# Capability Acquisition Management

## Engineering Mission Capability

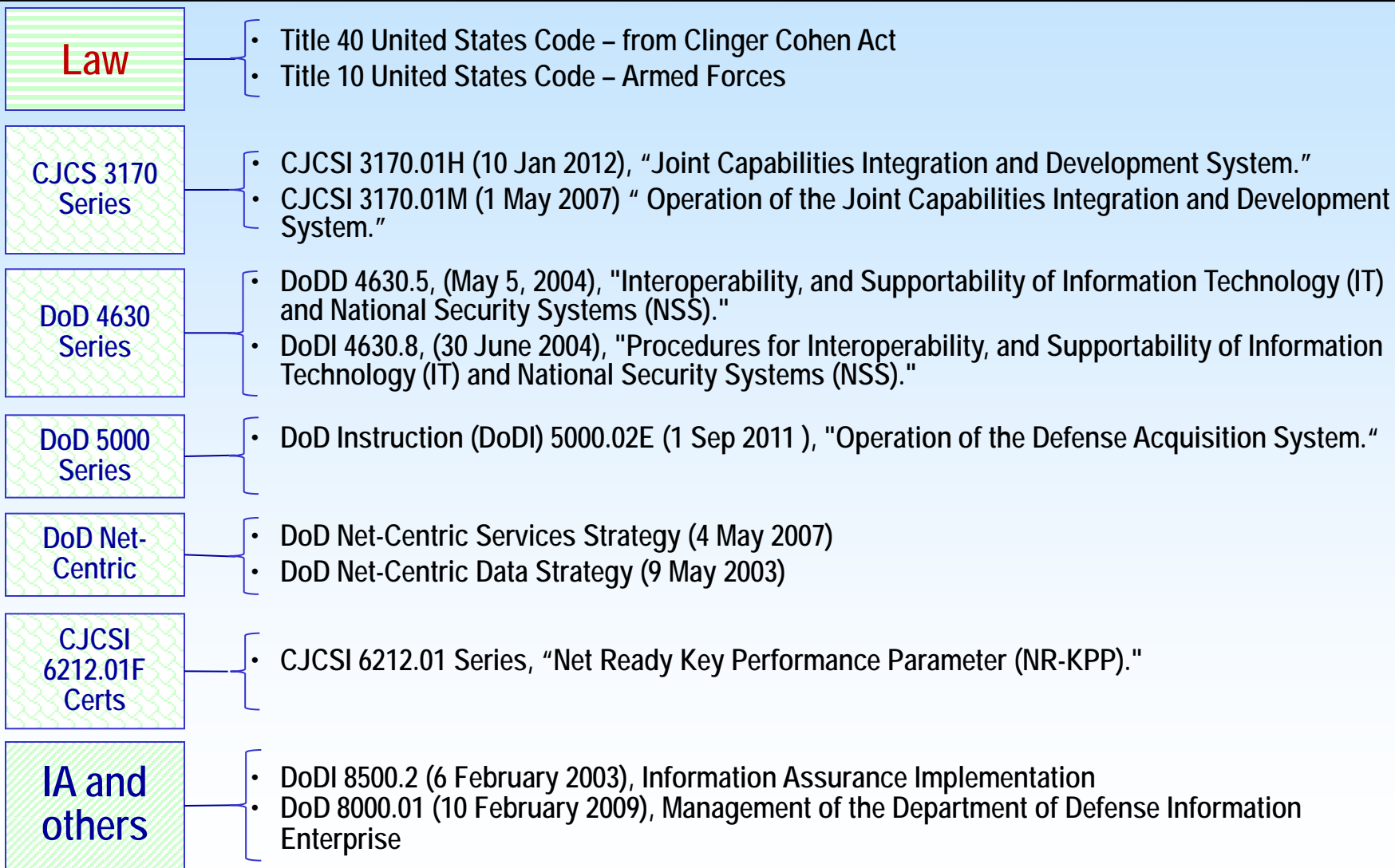
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# Interoperability

## Today's Law and Primary Joint and DoD Policy

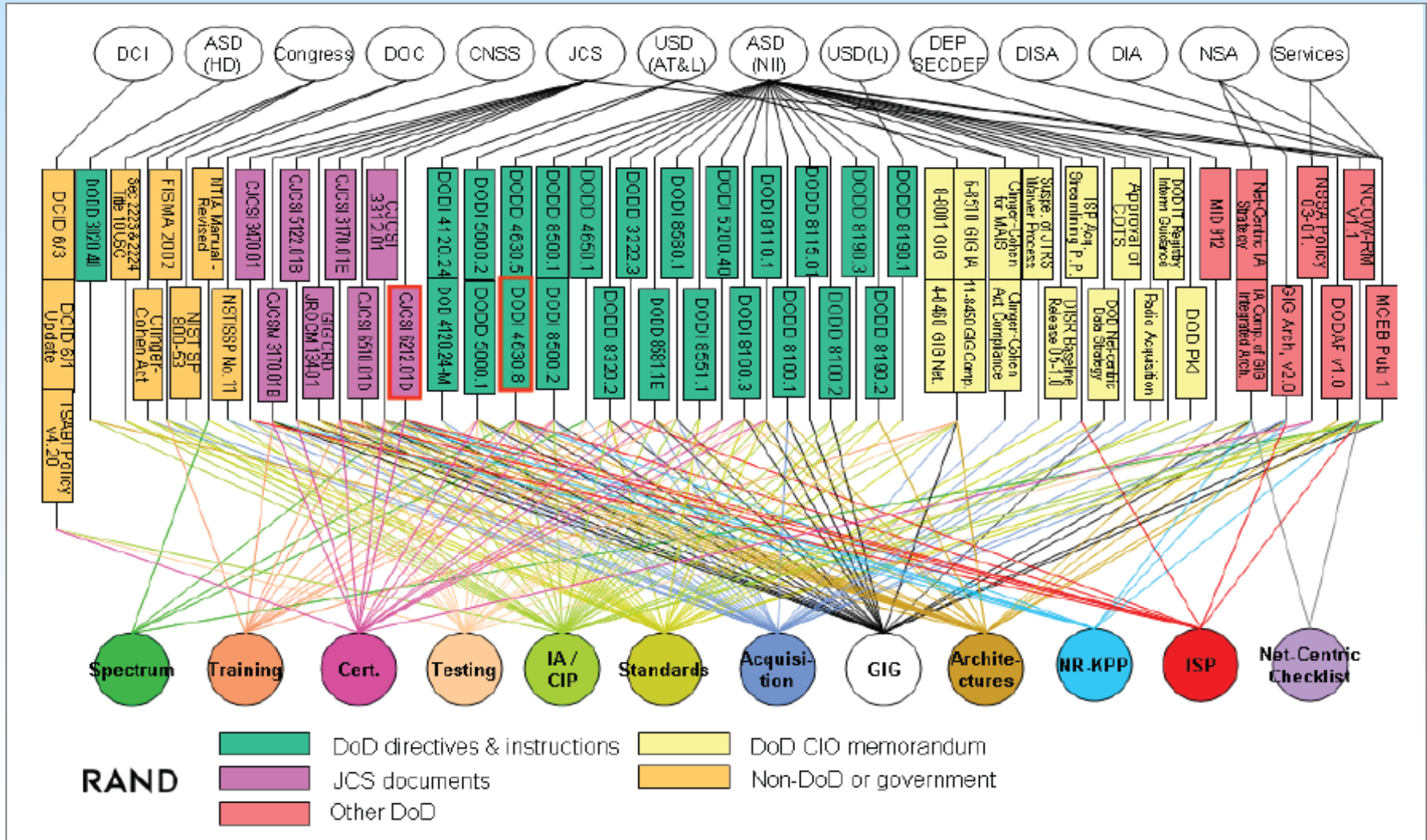
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# Interoperability Related Policy

## Multiple Policy Owners Responsible for Interoperability

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20 May 2008