



***Global Information Grid
End-to-End
Systems Engineering
Advisory Activity***

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Office of the Assistant Secretary of Defense
(Networks and Information Integration)***

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Introduction

- **Introduction**
 - Brian Robinson, OASD(NII)
- **Overview of GIG End-to-End Systems Engineering**
 - Ken Schmidt, Johns Hopkins University / Applied Physics Lab
- **GIG Evaluation Facilities**
 - Basil Decina, Naval Research Lab

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Introduction

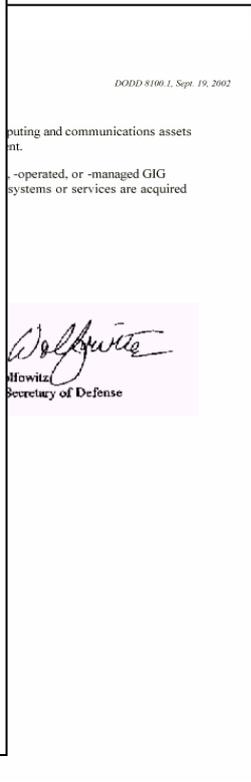
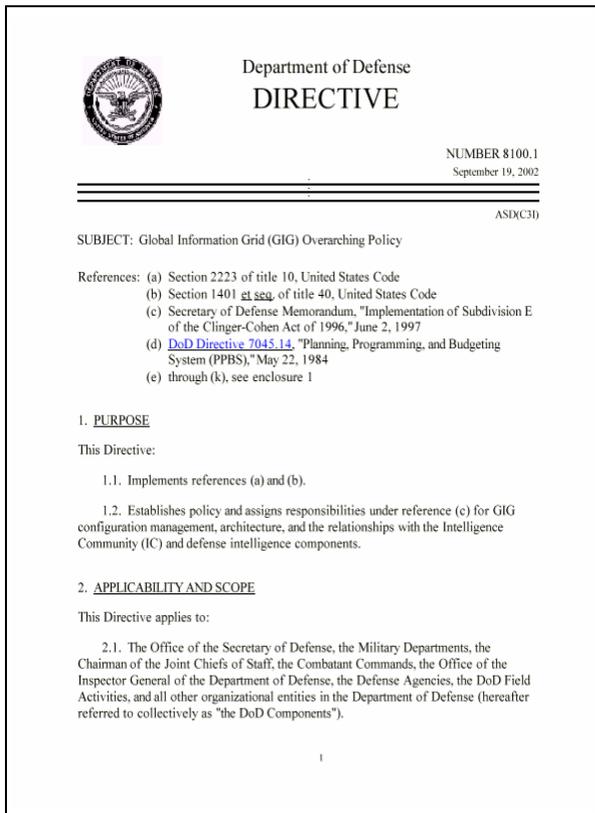
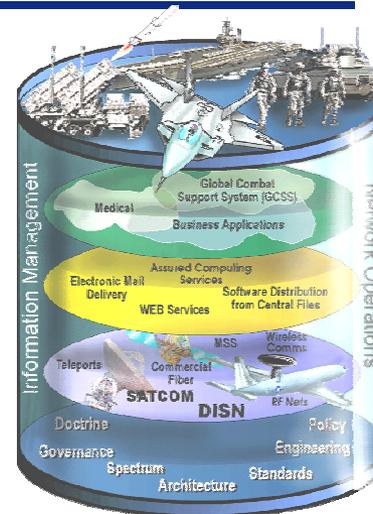
- **The Global Information Grid (GIG)**
- **Scope of GIG End-to-End (E2E) Systems Engineering (SE)**
- **Overall Process**
- **Organization**
- **Summary**

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The Global Information Grid

DoDD 8100.1



The GIG supports all Department of Defense, National Security and related Intelligence Community missions and functions in war and in peace.

The GIG encompasses the globally interconnected, end-to end set of information capabilities, associated processes and personnel for collecting, posting, distributing and managing information on demand by warfighters, policy makers and support personnel.



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GIG E2E Systems Engineering Advisory Activity Scope

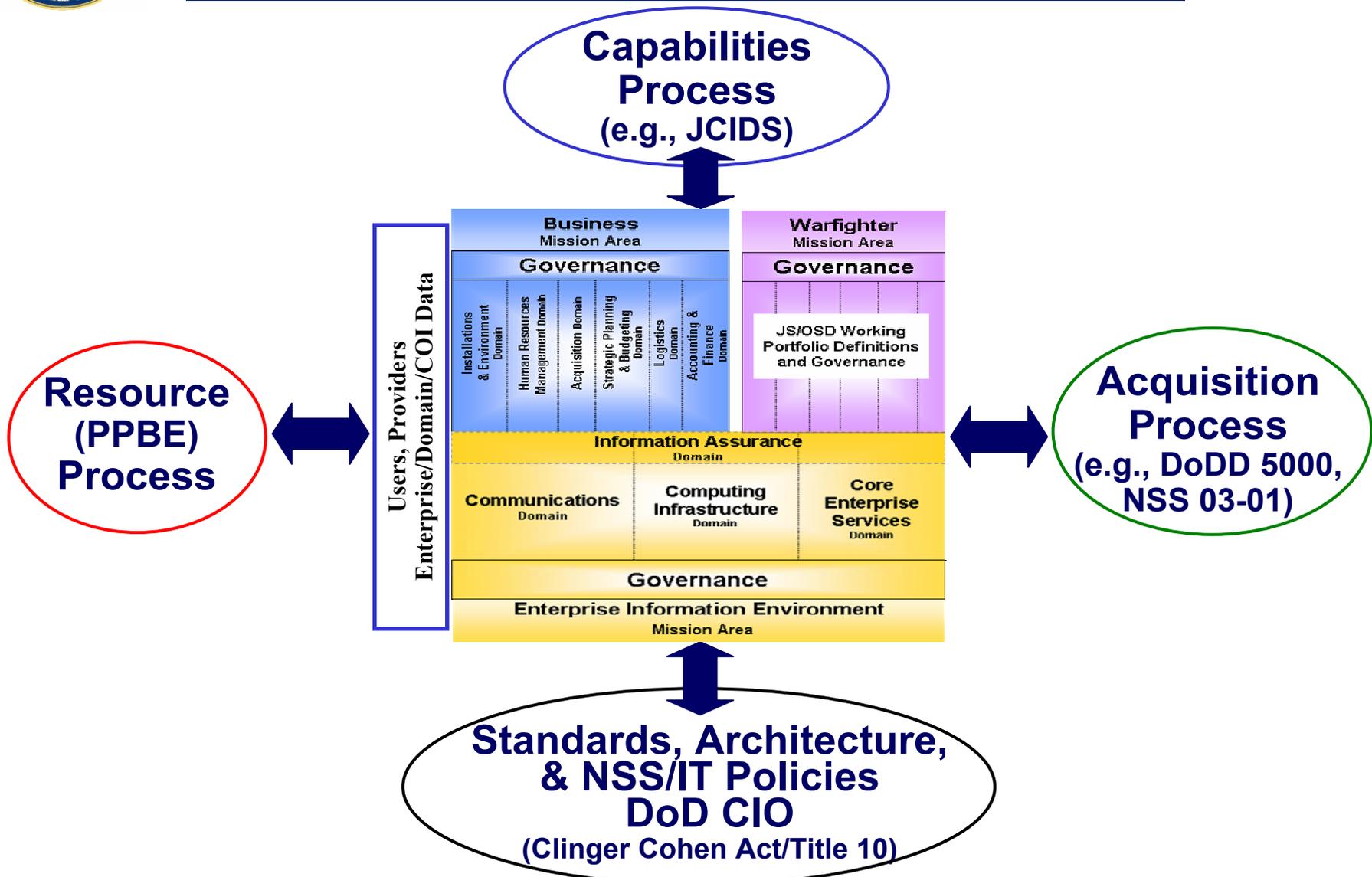
- **Ensure program compliance w/ GIG architecture**
- **Facilitate the GIG's "Internet Engineering Task Force-like" forum**
- **Cross-GIG risk management**
- **Facilitate functional allocation of GIG capabilities across GIG programs**
 - **Coordinate & propose standards required for GIG interoperability**
 - **Monitor/arbitrate inter-system interfaces and protocols**
 - **Rationalize GIG Program Synchronization**
 - **NII/DISA Comm Mgt Plan (CMP), J-6/NII GIG Transport Roadmap (GTR), TCO TCA Roadmap, JFCOM JBMC2 Roadmap, etc.**
- **Coordinate inter-system test plans/monitor interoperability testing**
 - **Coordinate GIG E2E Evaluation Facilities activities**
- **Ensure integration of multiple COCOM/Service/Agency SE efforts**

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GIG End-to-End Systems Engineering Advisory Activity Relationship to Overall GIG Governance

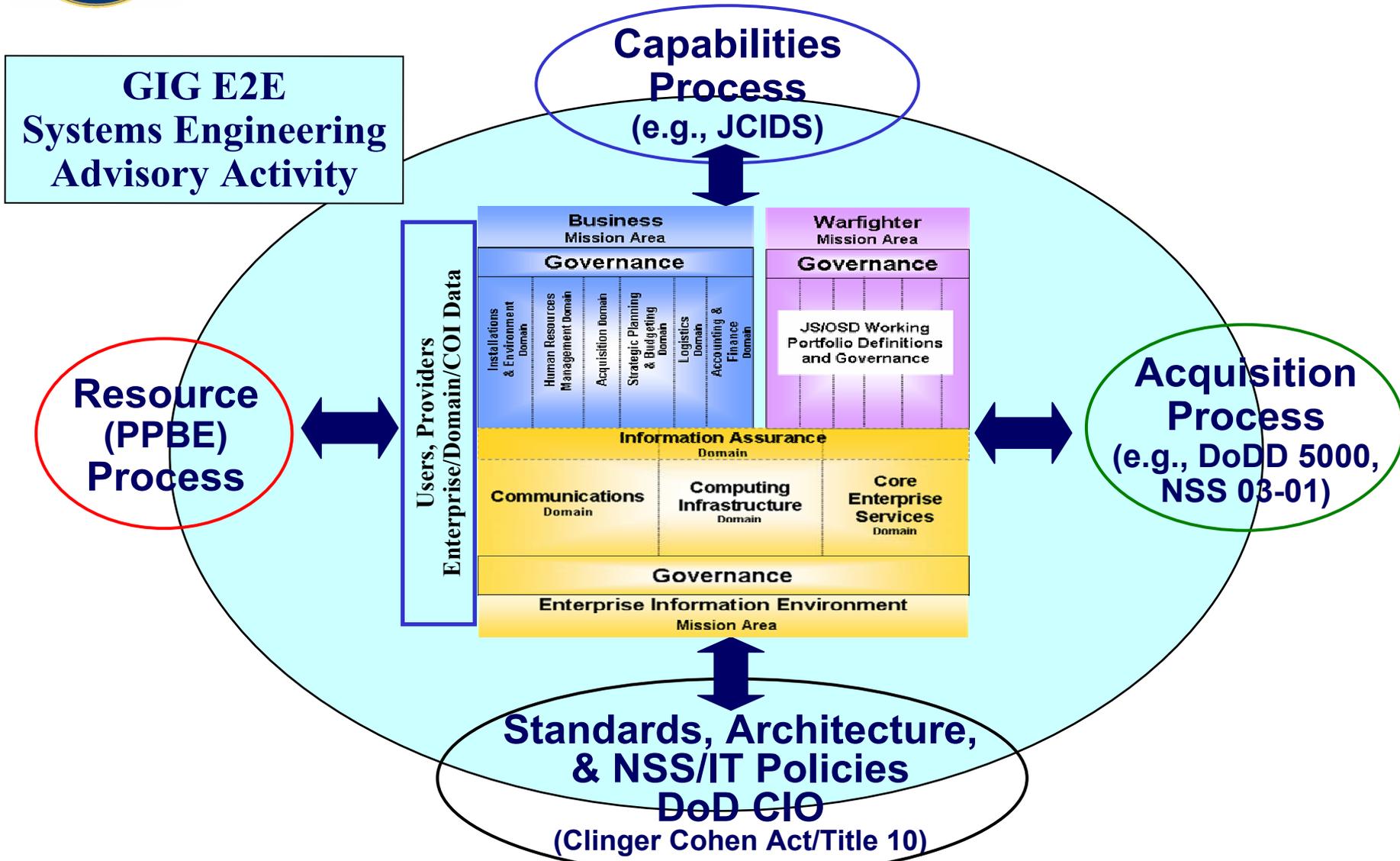


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GIG End-to-End Systems Engineering Advisory Activity Relationship to Overall GIG Governance



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GIG E2E Systems Engineering Advisory Activity (10/14/04)

ASD(NII) / DoD CIO

**Senior GIG
Systems Engineer (NII)
Mr. Mike Kern (NII)**

**Chair: Senior GIG
Systems Engineer (NII)**
**GIG Senior
Systems Engineering
Board**

Basil Decina (NRL)

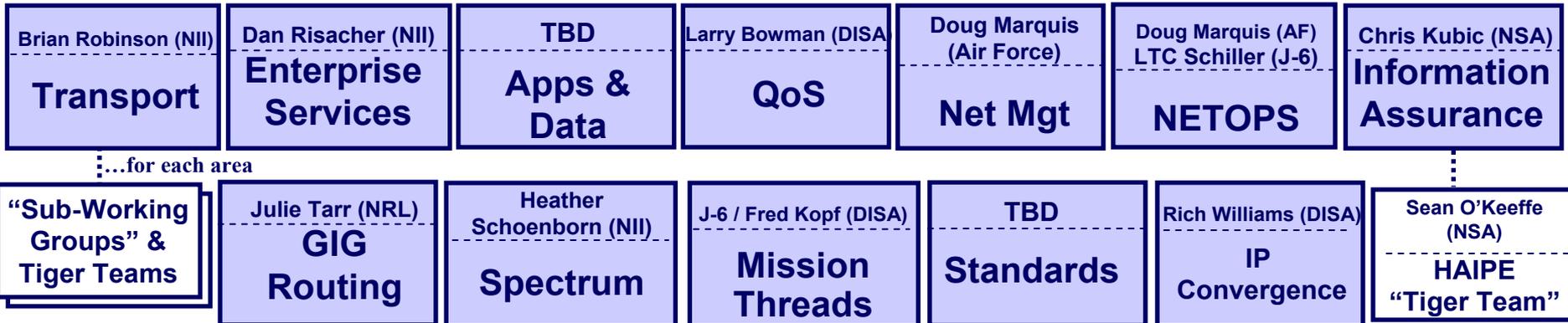
**GIG E2E
Evaluation
Facilities (NRL)**

Members: Senior Sys Engineering Rep from:
Army, Navy, AF, USMC, AT&L, USD(I),
DOT&E, Joint Staff J-6, STRATCOM,
JFCOM, IC-CIO, DISA, MDA, NSA GIG IA
SPO, TCO, TCM MJPO, GIG-BE SPO,
JTRS JPO, NCES SPO, GIG Architect, &
E2E Evaluation Facilities (NRL)

**Focus Areas
Working Groups**

GIG End-to-End Systems Engineering Working Group

WG POC: Brian Robinson (NII) ("acting")



Matrix organization brings best talent to functionally support E2E Systems Engineering Activity



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Summary

- **GIG provides unique capability for US and coalition partners**
- **End-to-end systems engineering process in place to deliver needed GIG capability**

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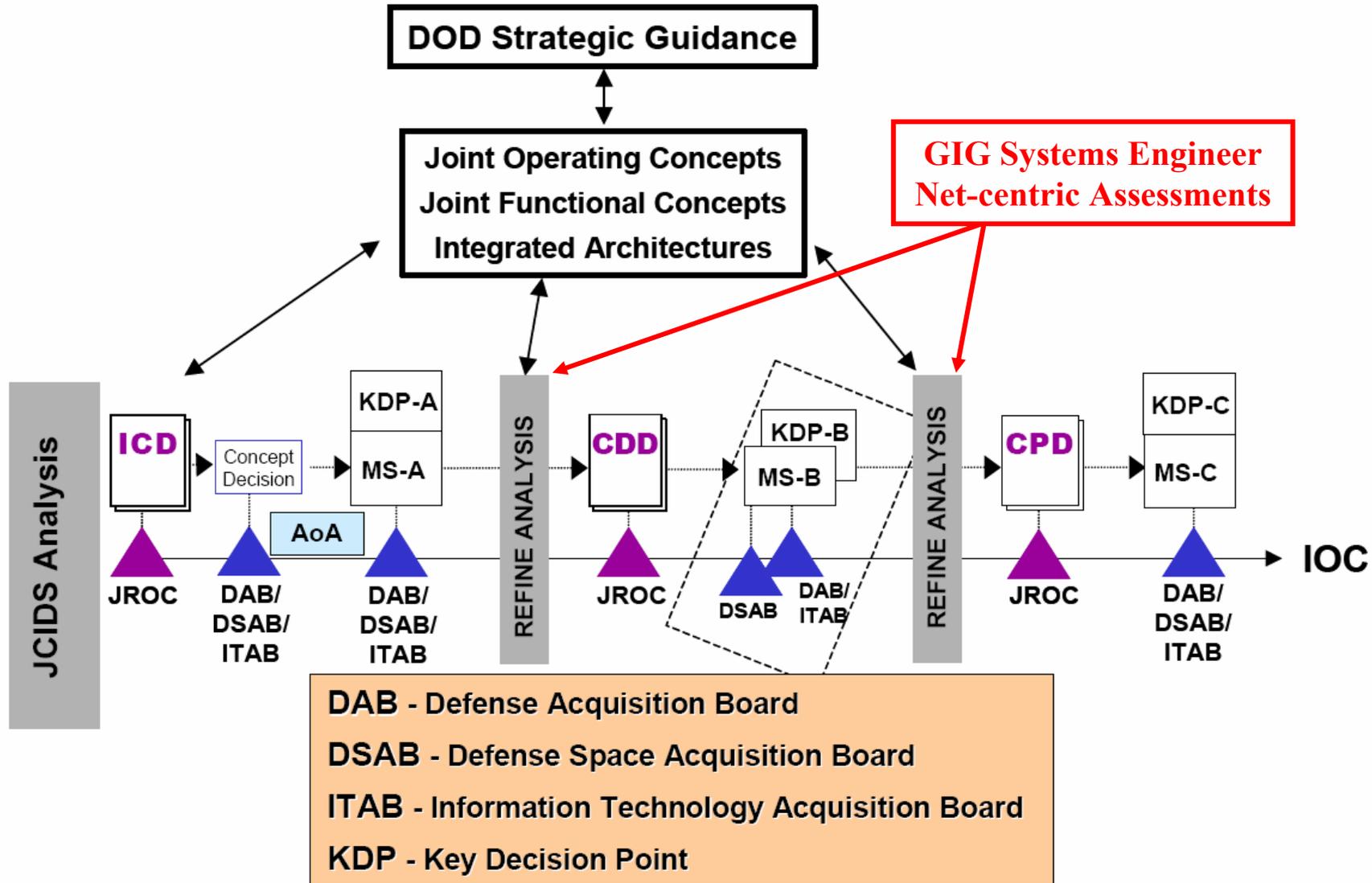
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Backup Charts



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Acquisition Life-Cycle

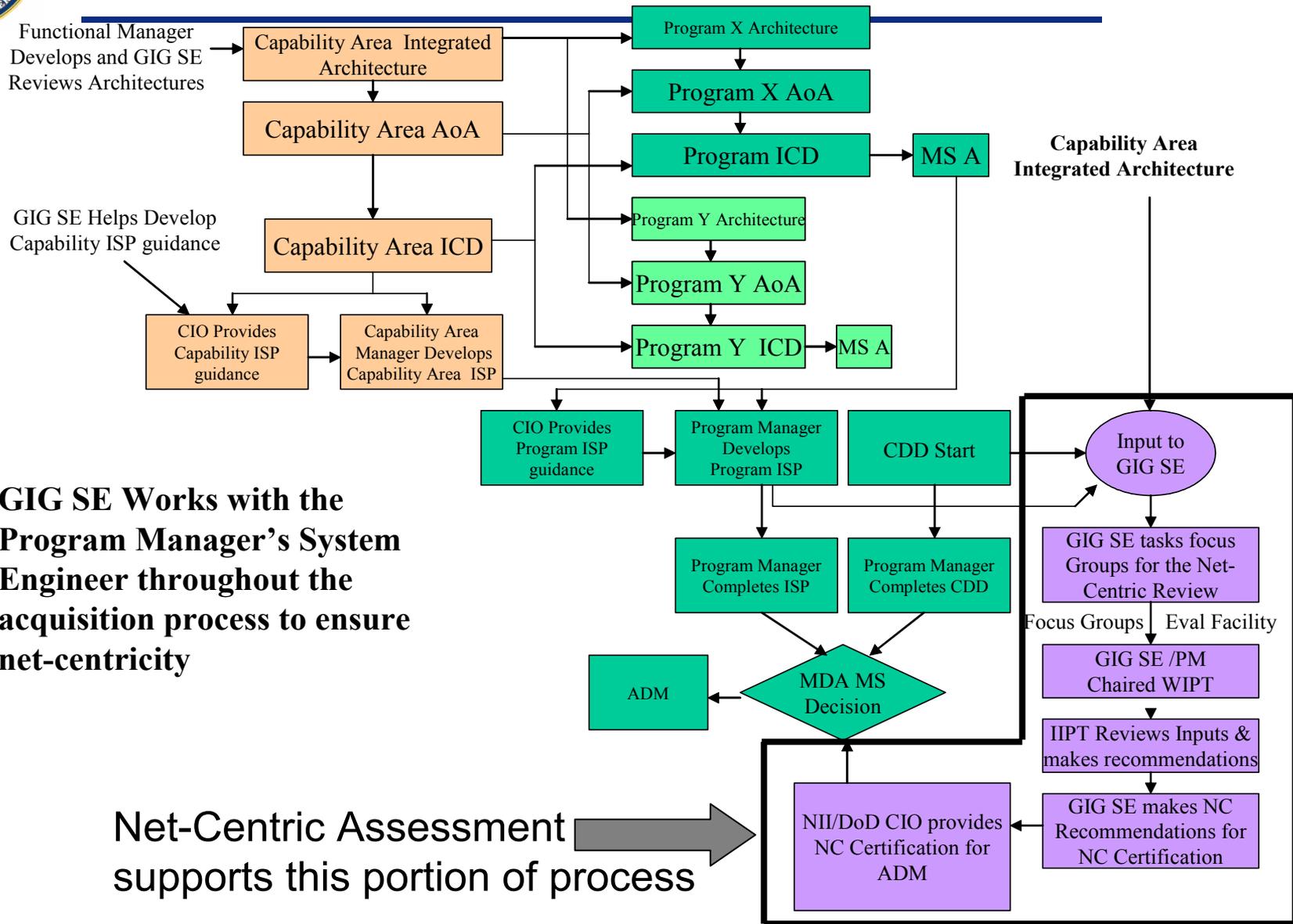


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Program Acquisition Process



GIG SE Works with the Program Manager's System Engineer throughout the acquisition process to ensure net-centricity

Net-Centric Assessment supports this portion of process

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Key to GIG E2E SE: Net-Centric Assessment

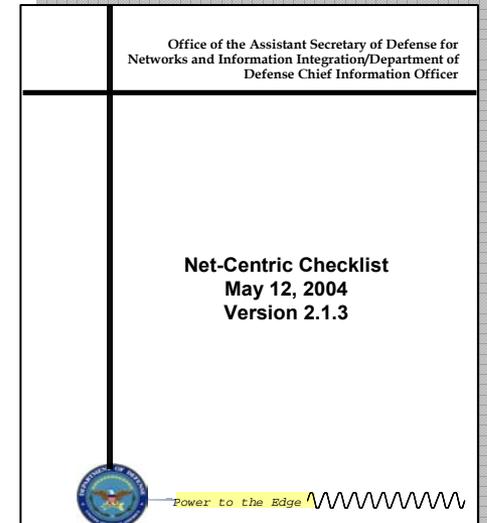
- Use current version of NC Checklist as starting point to collect program information
- Program provides responses to current version of NC Checklist

• Transport Tenets — Transport Team

- IPv6
- Packet Switched infrastructure
- Layering, Modularity
- Transport Goal
- Network Connectivity
- Concurrent Transport of Information Flows
- Differentiated Management of Quality of Service
- Inter Network Connectivity
- JTA
- Joint Net Centric Capabilities
- Operations and Management of Transport and Services

• Service Tenets — Enterprise Services Team

- Service-Oriented Architecture
- Open Architecture
- Scalability
- Availability
- Accommodate Heterogeneity
- Decentralized O&M
- Enterprise Service Management



• Data Tenets — Data/Applications Team

- Make Data Visible
- Make Data Understandable
- Make Data Accessible
- Make Data Trustable
- Make Data Interoperable
- Be Responsive to User Needs

• Information Assurance — IA Team

- Identify Management and Authentication
- Mediate Security Assertions
- Cross Security Domains Exchange
- Manage Identity and Privileges
- Encryption and HAPE
- Employment of Wireless Technologies



Systems Engineering Influencing/Supporting JCIDS Process: JCIDS Analysis

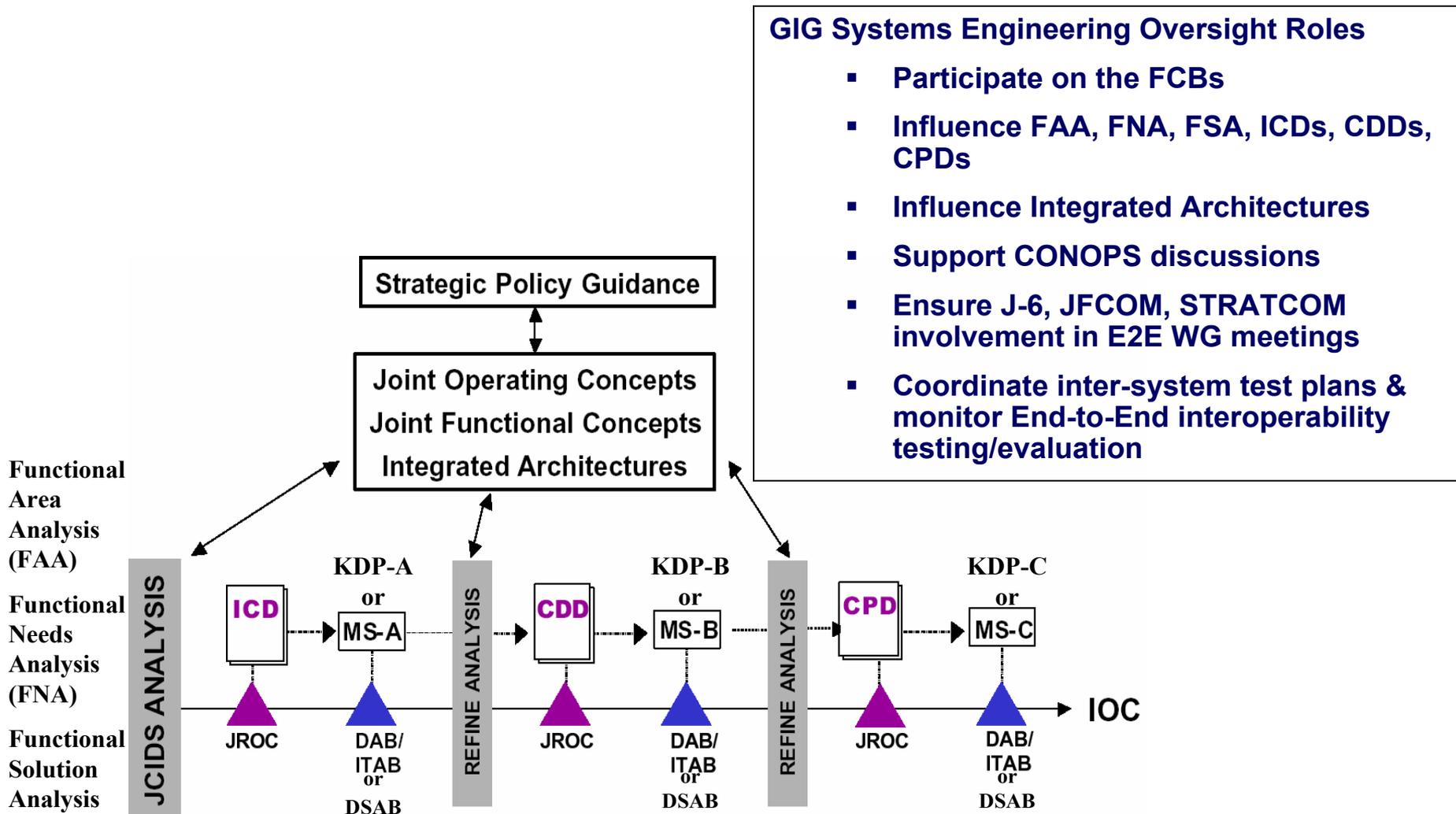
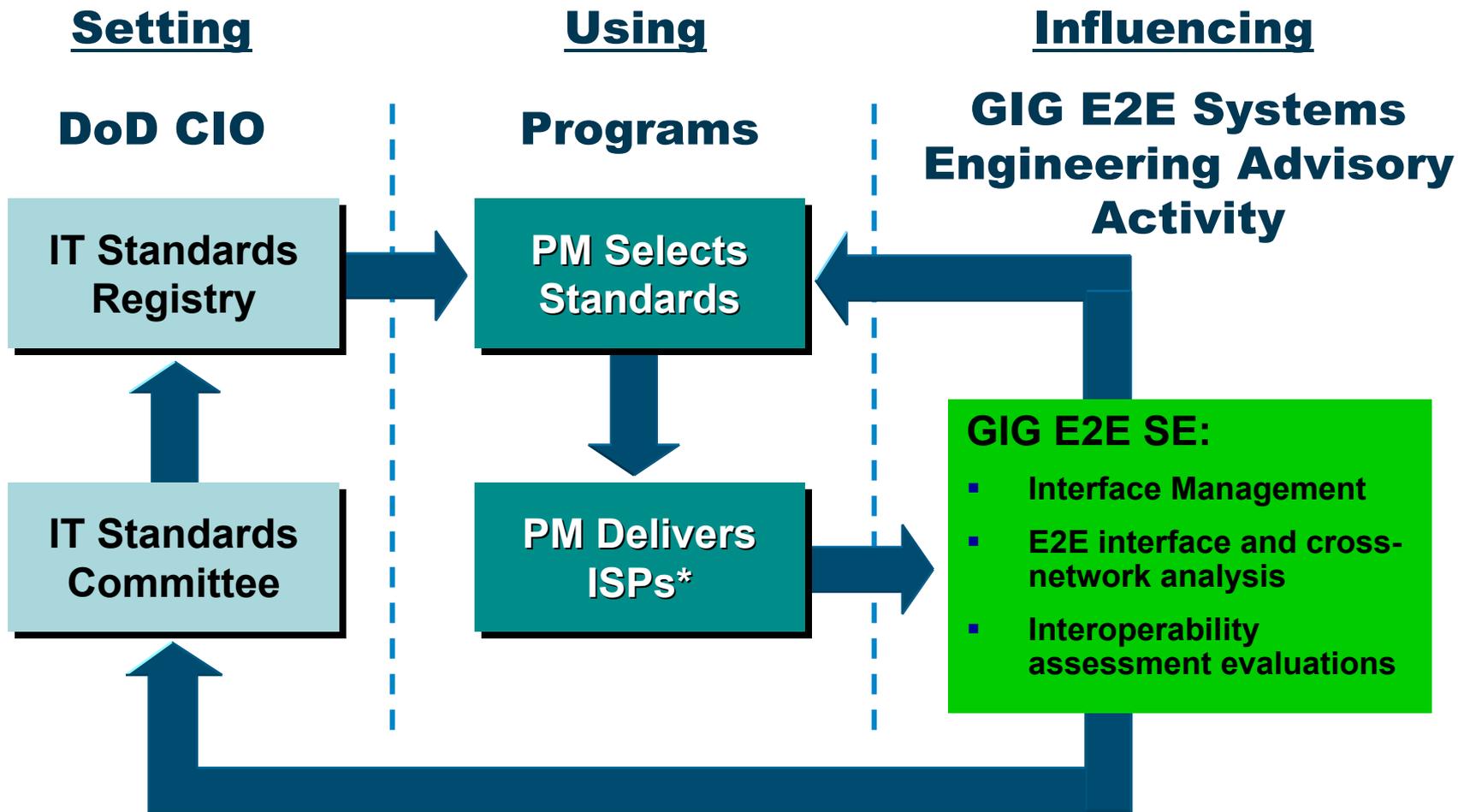


Figure A-2. JCIDS Process and Acquisition Decisions.



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**GIG E2E Systems Engineering
Influencing Standards Process**

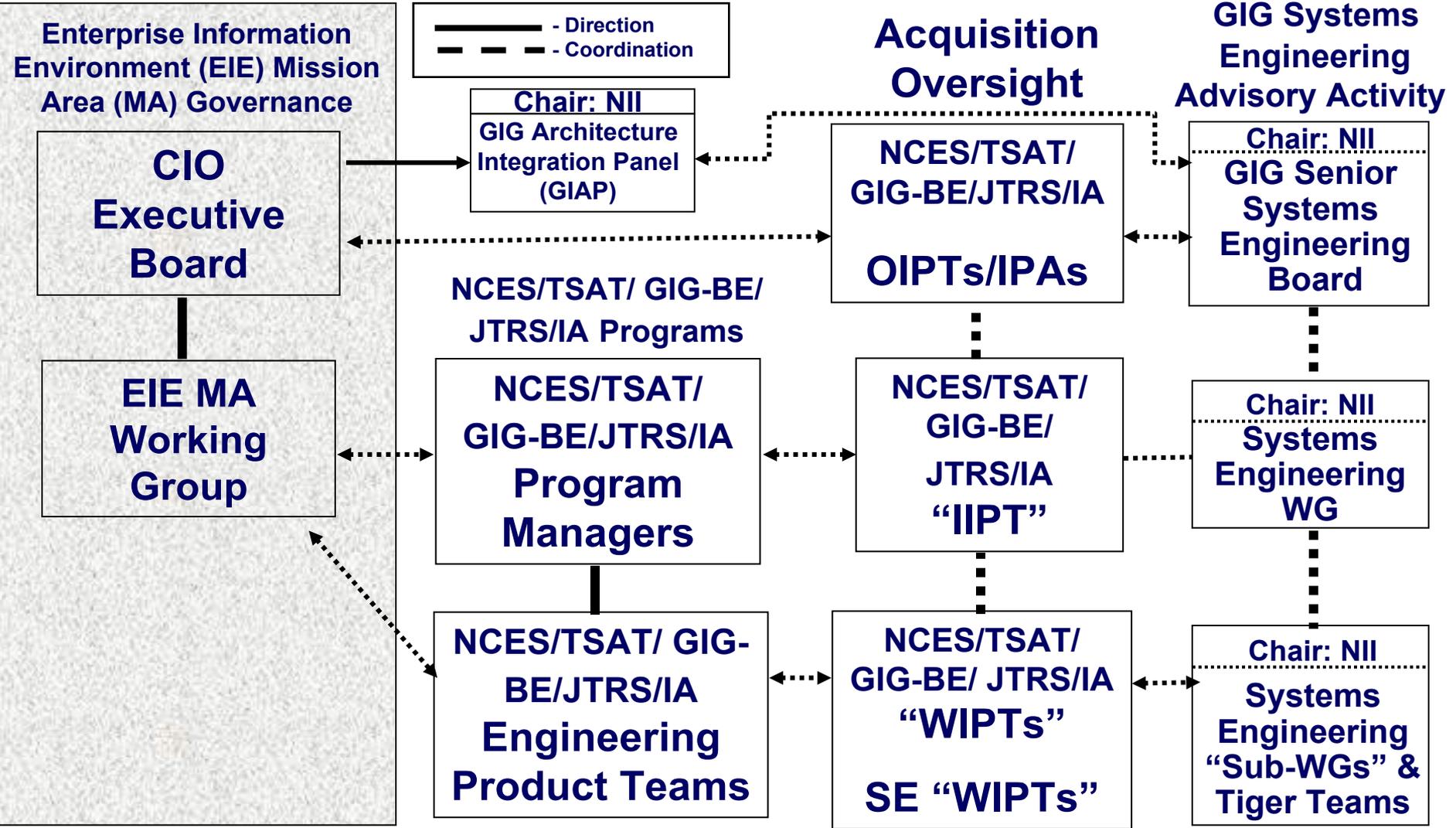


*ISP—Information Support Plan



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GIG E2E Systems Engineering Influencing Acquisition Process



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