ISA 201
Intermediate
Information Systems Acquisition
Lesson 2
Joint Capabilities Integration Development System (JCIDS)
OVERALL: Given a Department of Defense (DoD) Information Technology (IT) acquisition scenario, recognize characteristics of the IT Box.

- Identify capability planning documents from a list.
- Identify the purpose of using the IT Box.
- Describe the benefits of using the IT Box process to support IT capability development.
- Identify two benefits of DoD capability planning processes.
- Given a description of an Information Technology (IT) acquisition need, assess documentation to ensure specific information provides a clear understanding of the intended IT acquisition objectives from program outset.
• JCIDS Process Review
  • Information System (IS) Initial Capability Document (ICD) and the “IT Box”
    - IT Box Exercise
  • Capability Requirements
    - Net-Ready (NR) Key Performance Parameter (KPP) Exercise
• Summary
Capability requirement portfolios managed through JCIDS process inform and are informed by other processes and activities across the department.
JCIDS, Defense Acquisition System (DAS), and PPBE are the most tightly interactive and must work in concert to ensure consistent decision making while delivering timely and cost effective capability solutions.
Summary of Significant Changes

- Policy/Guidance documents: From 3 to 2 (Combines CJSCI 5123.01 & 3170.01)
- Key Performance Parameters (KPPs):
  - Previously six (6) mandatory KPPs:
    - Net-Ready, Training, System Survivability, Force Protection, Energy, & Sustainment
  - New JCIDS manual has four (4) mandatory KPPs
    - System Survivability, Force Protection, Energy, & Sustainment
    - Cyber Security Endorsement focus (CSE Implementation Guide)
- CPD no longer required
- CDD Adds New section 7: Interoperability (MOSA, Physical, Net Ready)
- Adds Classified Information Compromise Assessment procedures
- VOLT replaces STAR
DoD IT/SW Domains

DAG, CHAPTER 6, Figure 1: DoD Information Technology (IT)

Information Technology (IT)

- **DBS**
  - COTS and GOTS
  - ERPs (Oracle, SAP, PeopleSoft)
  - Business Process Enabled
  - Not NSS (DoDI 5000.75)

- **NSS**
  - Telecom or IS used for Intel, Cryptologic Missions;
  - Embedded IT;
  - Not DBS (DoDI 5000.02)

Other
- Includes non-NSS Telecom or IT (DoDI 8330.01)

Cybersecurity
- COTS and GOTS
- Architecture; Security Controls; Red/Blue Team Testing; Offensive/Defensive (DoDI 8500.01)

IT Infrastructure
- Cloud Servers, Processors; Routing Software; Enterprise Services, Hardware and Software (DoDI 5000.74)

Protection

Enablers
• Title 10 Responsibilities (as modified by 2009 Weapon System Acquisition Reform Act and 2011 National Defense Authorization Act)

• The Joint Requirements Oversight Council (JROC) shall assist the VCJCS in making cost, schedule, and performance trades and prioritizing joint military requirements

• The JROC must:
  - Consider input from Combatant Commanders on joint requirements
  - Consider cost, schedule and performance tradeoffs in establishing requirements
  - Set an Initial Operational Capability (IOC) schedule objective for each requirement

More Than Any Other Body

… the JROC is charged with shaping the force
Take the Lead in Shaping the Force

• Debate the difficult issues and make difficult choices **earlier**

• Provide better upfront fidelity on cost/ schedule/ performance **tradeoffs**

• Provide more analytic rigor and risk/ portfolio analysis

• Provide stronger emphasis on **prioritizing** capability requirements

• Provide better end-to-end traceability to facilitate decision making: Missions—Requirements—Acquisition and DOTmLPF-P—Budget.

• Provide more dynamic/iterative process throughout a program’s **lifecycle**. (e.g., shifts, threat changes, etc.)
• Joint DOTmLPF-P Change Recommendation (DCR)—DOTmLPF-P Change Recommendation – when a Joint Non-Materiel Solution is appropriate

• Initial Capabilities Document (ICD) (Milestone A)—Documents Capability Gaps and Identifies relevant operational performance attributes

• Capability Development Document (CDD) (Milestone B)—Defines Performance Requirements to Achieve the Capability
• JCIDS Process Review

• Information System (IS) Initial Capability Document (ICD) and the “IT Box”
  - IT Box Exercise

• Capability Requirements
  - Net-Ready (NR) Key Performance Parameter (KPP) Exercise

• Summary
Interaction of JCIDS Information Systems Path and the DAS:

- The information systems path depicted in provides the Sponsor flexibility.
- Deployment of the full capability of a software intensive program will occur in multiple increments as new capability is developed and delivered.
- The period of each increment should not be arbitrarily limited.
- The length of each increment and the number of deployable increments should be tailored and based on the logical progression of development and deployment.

CD – Capability Drop; CP – Capability Package; RDP – Requirement Development Package
Information Systems (IS) Requirements Acquisition Process

- The Initial Capabilities Document (ICD) is developed in a new format tailored to Information System (IS) capabilities
- Following the Materiel Development Determination (MDD), one or more Requirements Definition Packages (RDPs) are developed to further refine the requirements for the needed capabilities
- The RDP is further broken down into Capability Drops (CDs) to deliver individual “chunks” of capability
- The results of the CD development are released incrementally through Fielding Decisions

NOTE: IS ICDs implement the “IT Box” model to provide IS programs greater flexibility to incorporate evolving technologies, and achieve faster responses from requirement validation processes than is typical for other kinds of materiel or non-materiel solutions.
Efforts where an IT Box may be considered:

- **JROC Gatekeeper oversight (Life cycle program costs \( \geq \$15m \))**
  - When it is clear from the CBA that an IS solution is the only viable approach to be considered.
  - **Hardware**: All hardware associated with an IS-ICD must be COTS/GOTS. Hardware modifications are restricted to those necessary for system integration and enhancements to meet capability requirements. Includes periodic refresh through lifecycle.
  - **Software**: Development, integration, and acquisition of customized applications, including commercial IS capability solutions with integrated, DoD-specific performance characteristics/standards. Includes continued development and deployment through lifecycle.
  - The development of both offensive and defensive cyber capability that meet the remaining criteria for an IS-ICD and require the flexibility that the IT process provides.

- **IT Box is NOT appropriate where:**
  - Software is embedded as a subset of a capability solution developed under other validated capability requirement documents.
  - IT capability gap is better addressed by DBS processes.
The purpose of the IS-ICD/“IT Box” is to describe the overall bounds of an IT program in order to facilitate program initiation, greater flexibility to incorporate evolving technology, and achieve faster responses from the requirements validation process.

Requirements Organization & Oversight

No Return to JROC unless new core capabilities
Return if expenditures exceed ROM estimate by xx% or fail to meet performance requirements
Further definition of capabilities through Rqmts Definition Packages / Capability Drops
• Review the JCIDS Manual pages B-B-1 to B-B-6 (10 minutes)
• Individually teams obtain consensus on the significance of their side of the box (5 minutes)
  - Team 1—Organization and Oversight; What is the purpose? What is the significance to a program?
  - Team 2 —Capabilities and Initial Minimum Values; What is the purpose? What is the significance to a program?
  - Team 3—Hardware Refresh and System Enhancements & Integrated Cost Controls; What is the purpose? What is the significance to a program?
  - Team 4—Application and Software Development Cost Controls; What is the purpose? What is the significance to a program?
  - Team 5—Answer: What does the IT Box provide the program?
• Discuss (10 minutes)
IT BOX Exercise

What is the purpose? What is the significance to a program?

Team 1

Organization & Oversight
Flag-level oversight through [describe]
Chair
- XXXX
Members
- XXXX
- XXXX
- XXXX

Team 2

Capabilities and Initial Minimum Values
- Capability #1 [Describe] = initial value
- Capability #2 [Describe] = initial value
- Etc. [List the operational attributes/initial values that apply to this IS-ICD]

Team 3

“Boundaries”
JROC-Approved
IS-ICD
[Topic Name]
Oversight – [Name]
Execute – [Name]

Team 4

Hardware Refresh and System Enhancements & Integration Cost Controls
- Per year = $XXX
- Lifecycle cost = $XXX
- Rationale

Team 5 - What does the IT Box provide the Program?
• JCIDS Process Review
• Information System (IS) Initial Capability Document (ICD) and the “IT Box”
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  - Net-Ready (NR) Key Performance Parameter (KPP) Exercise

• Summary
GAO reports that selected MAIS programs had significant cost and schedule changes and “recommends that DoD direct the programs to address respective weaknesses in their risk management, requirements management.”

GAO 14-309

NOTE: Capability planning establishes user requirements and helps “get the requirement right.”
DoD Definitions and Explanations

- **Requirement**—A capability which is required to meet an organization’s roles, functions, and missions in current or future operations. Note: a requirement is considered ‘draft’ or ‘proposed’ until validated by the appropriate authority. And is established through the capability planning process.
- **Capability**—The ability to execute a specific course of action.
- **Capability Gap**—The inability to execute a specified course of action.

Example: USAF Tanker Fuel Load & Passenger Capabilities

- **KC-XX**
  - Fuel Load: DoD Defined KPP
  - Passengers: DoD Defined KPP

- **KC-135**
  - Fuel Load: 200,000 lbs.
  - Passengers: 3

- **KC-46**
  - Fuel Load: 212,672 lbs.
  - Passengers: 114

(Currently)
Operational Performance Attributes (ICD)

- Attributes Necessary to Design a Proposed System
- Establish a Performance Baseline
- Guide Development and Demonstration
- Guide Development of Key Performance Parameters (KPPs) for Inclusion in Capabilities Development Document
Key Performance Parameters (KPPs)

- Performance Attributes of a System
- Critical To Develop an Effective Military Capability
- KPPs Must be Measurable, Testable, and Quantifiable in a Practical and Timely Manner
  - Enable feedback from T&E; support decision making
- Mandatory KPPs
  - System Survivability, Force Protection, Energy, & Sustainment
- Documented in the CDD

Failure to Meet a KPP Brings the Military Utility of the System into question.
Key System Attributes (KSAs)

- Attributes or Characteristics Considered Essential to Achieving a Balanced Solution
- Not Critical Enough to be Selected as a KPP
- Must be Measurable, Testable and Quantifiable
- Identified by the Sponsor; Should be Kept to a Minimum
- Sponsor Senior Leadership can Change a KSA
### Requirements Tradeoffs

**Finding the balance between:**

<table>
<thead>
<tr>
<th>CCMD near-term requirements to support CONPLANs and current missions</th>
<th>and</th>
<th>Services’ long range vision &amp; investment plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Versatile, joint systems</td>
<td>and</td>
<td>Systems optimized for service missions</td>
</tr>
<tr>
<td>Growing demands</td>
<td>and</td>
<td>Fiscal &amp; political constraints</td>
</tr>
<tr>
<td>Geographic specificity</td>
<td>and</td>
<td>Worldwide applicability</td>
</tr>
<tr>
<td>Ambitious requirements</td>
<td>and</td>
<td>Achievable acquisition strategy</td>
</tr>
<tr>
<td>Quantity matters</td>
<td>and</td>
<td>Quality (High-end capabilities)</td>
</tr>
<tr>
<td>COST</td>
<td>and</td>
<td>PERFORMANCE (acceptable risk)</td>
</tr>
</tbody>
</table>

**Notes:**

- CCMD: Combatant Command
- CONPLAN: Contingency Plans
- JCIDS & IT BOX 26
You have been asked to draft the Net Ready (NR) KPP, and your industrious “new guy” found a previous version of the NR KPP as a starting point

- Review the CONOPS (in the IS ICD) and as a team identify 2 recommended changes to the NR-KPP
<table>
<thead>
<tr>
<th>NR KPP Attribute</th>
<th>KPP</th>
<th>Threshold</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter and be Managed in the Network:</td>
<td>Network: SIPRNET —Measure: Time to connect to an operational network from power up —Communication Connectivity</td>
<td>—2 minutes —Continuous</td>
<td>—2 Days —Continuous</td>
</tr>
<tr>
<td>Exchange Information</td>
<td>Information Element: Target Data —Measure: Dissemination of Mission Information and physical data —Measure: Latency of mission information and physical data</td>
<td>—10 hours —5 seconds</td>
<td>—5 hours —2 seconds</td>
</tr>
</tbody>
</table>
Lesson Overview

Lesson Plan Status

• JCIDS Process Review
• Information System (IS) Initial Capability Document (ICD) and the “IT Box”
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• Summary
Review of the Deliberate JCIDS Process

- Materiel Solutions
  - Initial Capabilities Document (ICD)
  - Information System (IS) ICD
  - Capability Development Document (CDD)

- Non-Materiel Solutions—Joint DOTmLPF-P Change Recommendation (DCR)

- Operational Requirements Development is a Team Effort; All Stakeholders Should be Involved; Involve the User in Technical Requirements Development

NOTE: The ICD will describe the initial Operational performance “attributes.” The CDD will define the performance “requirements” (e.g. KPPs, KSAs, etc). The IS ICD provides greater development flexibility.
Conclusions on JCIDS

- Provides an enhanced methodology to identify and describe capabilities gaps and redundancies
- Helps to prioritize capability proposals
- Facilitates broad review of capability proposals independent of ACAT (Acquisition Category)
- Engages the acquisition community early
- Improves the identification of non-materiel alternatives
- Improves collaboration with other departments and agencies
OVERALL: Given a Department of Defense (DoD) Information Technology (IT) acquisition scenario, recognize the characteristics of the IT Box.

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References

a. Title 10, United States Code, sections 153, 163, 167, and 181
b. Manual for the Operation of the Joint Capabilities Integration and Development System (JCIDS), 12 February 2015
c. CJCSI 5123.01H JROC /JCIDS, 31 August 2018
d. DoDD 5000.01, 12 May 2003, “The Defense Acquisition System”
e. DoDI 5000.02, 07 January 2015, “Operation of the Defense Acquisition System”