



ITEA

2nd Cyber Security Workshop

“T&E to meet the Advanced Persistent Threat”

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Agenda



- **Inside the Beltway**
- **DoD Cyber Policy**
- **AT&L Cyber Guidance and Resources**
- **Vision and Challenge**



Inside the Beltway

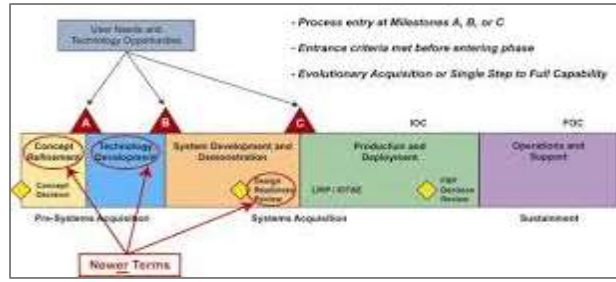
New SecDef



DoD Budget submission



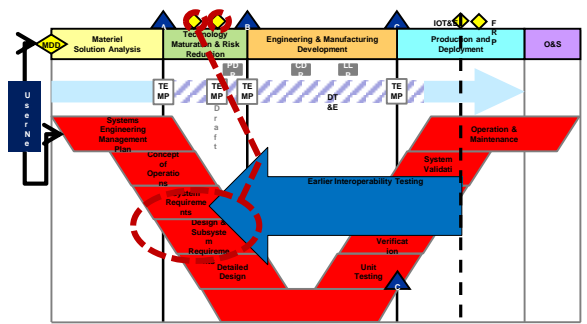
New DoDI 5000.02



BBP 3.0 underway



Shift Left Implementation



Cyber



Better Buying Power 3.0



Achieving Dominant Capabilities through Technical Excellence and Innovation

Achieve Affordable Programs

- Continue to set and enforce affordability caps

Achieve Dominant Capabilities While Controlling Lifecycle Costs

- Strengthen and expand “should cost” based cost management
- **Build stronger partnerships between the acquisition, requirements, and intelligence communities**
- **Anticipate and plan for responsive and emerging threats**
- Institutionalize stronger DoD level Long Range R&D Planning

Incentivize Productivity in Industry and Government

- Align profitability more tightly with Department goals
- Employ appropriate contract types, but increase the use of incentive type contracts
- Expand the superior supplier incentive program across DoD
- Increase effective use of Performance-Based Logistics
- Remove barriers to commercial technology utilization
- Improve the return on investment in DoD laboratories
- Increase the productivity of IRAD and CR&D

Incentivize Innovation in Industry and Government

- Increase the use of prototyping and experimentation
- Emphasize technology insertion and refresh in program planning
- Use Modular Open Systems Architecture to stimulate innovation
- Increase the return on Small Business Innovation Research (SBIR)
- Provide draft technical requirements to industry early and involve industry in funded concept definition to support requirements definition
- Provide clear “best value” definitions so industry can propose and DoD can choose wisely

Eliminate Unproductive Processes and Bureaucracy

- Emphasize Acquisition Executive, Program Executive Officer and Program Manager responsibility, authority, and accountability
- Reduce cycle times while ensuring sound investments
- **Streamline documentation requirements and staff reviews**

Promote Effective Competition

- Create and maintain competitive environments
- Improve technology search and outreach in global markets

Improve Tradecraft in Acquisition of Services

- Increase small business participation, including more effective use of market research
- Strengthen contract management outside the normal acquisition chain
- Improve requirements definition
- Improve the effectiveness and productivity of contracted engineering and technical services

Improve the Professionalism of the Total Acquisition Workforce

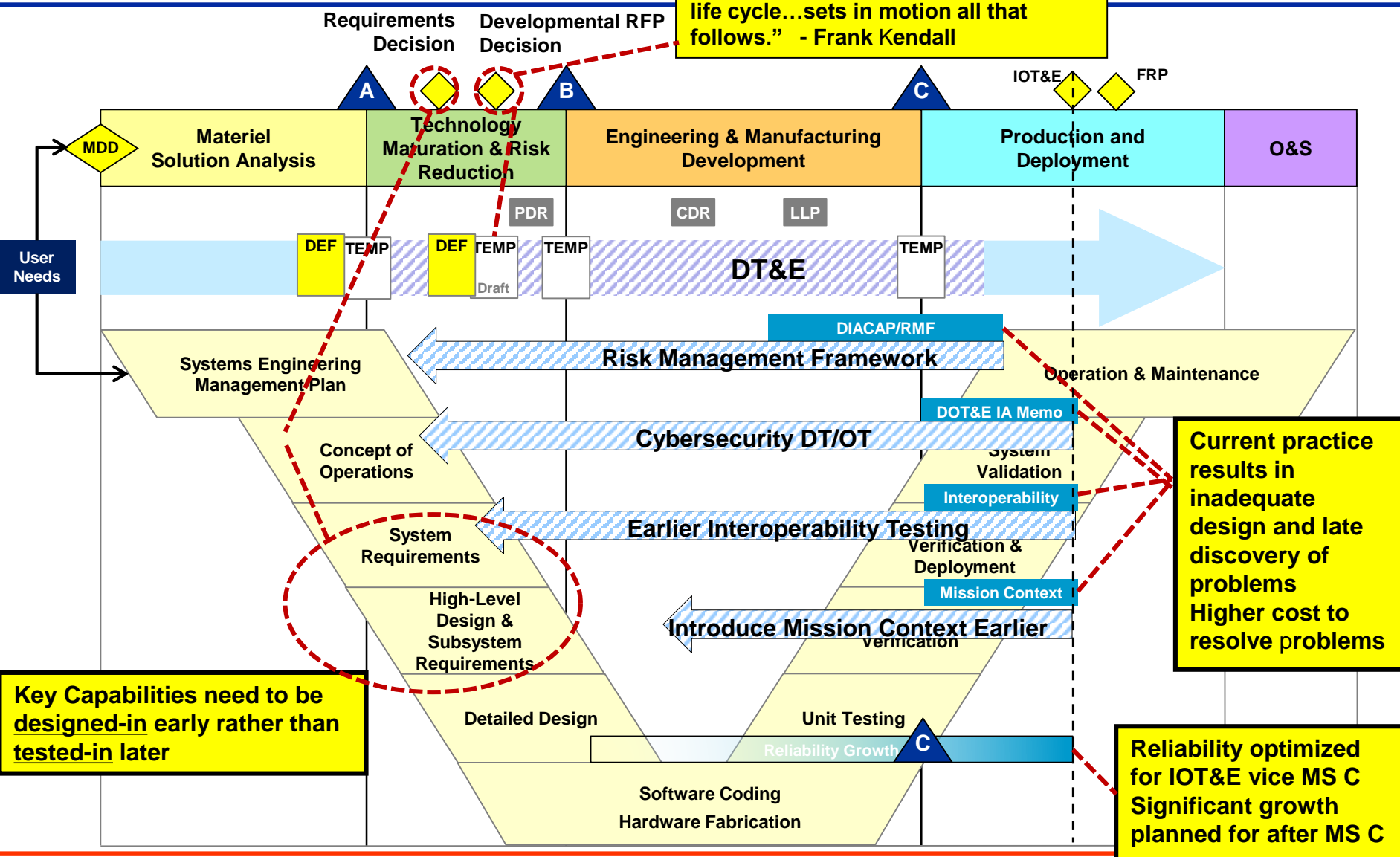
- **Establish higher standards for key leadership positions**
- Establish stronger professional qualification requirements for all acquisition specialties
- **Strengthen organic engineering capabilities**
- Ensure the DOD leadership for development programs is technically qualified to manage R&D activities
- Improve our leaders’ ability to understand and mitigate technical risk
- **Increase DoD support for Science, Technology, Engineering and Mathematics (STEM) education**

**Continue Strengthening Our Culture of:
Cost Consciousness, Professionalism, and Technical Excellence**



"Shift Left"

"Most important single decision in the life cycle...sets in motion all that follows." - Frank Kendall



Key Capabilities need to be designed-in early rather than tested-in later

**Current practice results in inadequate design and late discovery of problems
Higher cost to resolve problems**

**Reliability optimized for IOT&E vice MS C
Significant growth planned for after MS C**



Cybersecurity Policy and Guidance in DoD



 Department of Defense
INSTRUCTION
8500.01


SUBJECT: Cybersecurity
References: See Enclosure 1

1. **PURPOSE** This instruction:

- a. Reissues and renames DoD Directive (DoDD) 8500.01E (Reference (a)) as a DoD Instruction (DoDI) pursuant to the authority in DoDD 5144.02 (Reference (b)) to establish DoD cybersecurity program to protect and defend DoD information and information systems (ITS).
- b. Incorporates and cancels DoDI 8500.01 (Reference (c)), DoDD C-5300.19 (Ref (d)), DoDI 8532.01 (Reference (e)), Assistant Secretary of Defense for Networks and Information Integration (ASDNI2)/DoD Chief Information Officer (DoD CIO) Memoranda (References (f) through (k)), and Directive-type Memorandum (DTM) 08-060 (Reference (l)).
- c. Establishes the positions of DoD principal authorizing official (PAO) (formerly principal accrediting authority) and the DoD Senior Information Security Officer (SISO) (formerly known as the Senior Information Assurance Officer) and continues the DoD Information Security Risk Management Committee (DoD ISRM/C) (formerly known as Defense Information Systems Network (DISN)-Global Information Grid (OIG) Flag Panel).
- d. Adopts the term "cybersecurity" as it is defined in National Security Presidential Directive-54/Homeland Security Presidential Directive-23 (Reference (m)) to be used DoD instead of the term "information assurance (IA)."

2. **APPLICABILITY**

- a. This instruction applies to:
 - (1) OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff (CJCS) and the Joint Staff, the Combatant Commands, the Office of the Inspector of the DoD, the Defense Agencies, the DoD Field Activities, and all other organizations within the DoD (referred to collectively in this instruction as the "DoD Components").

 Department of Defense
INSTRUCTION
8510.01

SUBJECT: Risk Management Framework (RMF) for DoD Information Systems (IS)

References: See Enclosure 1

1. **PURPOSE** This instruction:

- a. Reissues and renames DoD Instruction (DoDI) 8510.01 (Reference (a)) with the authority in DoD Directive (DoDD) 5144.02 (Reference (b)).
- b. Implements References (c) through (f) by establishing the RMF for this instruction as "the RMF", establishing associated cybersecurity policy responsibilities for executing and maintaining the RMF. The RMF replaces Information Assurance Certification and Accreditation Process (DIACAP) cycle cybersecurity risk to DoD IT in accordance with References (g) through (i).
- c. Redesignates the DIACAP Technical Advisory Group (TAG) as the DoD Information Security Risk Management Committee (DoD ISRM/C).
- d. Directs visibility of authorization documentation and reuse of artifacts among DoD Components deploying and receiving DoD IT.
- e. Provides procedural guidance for the reciprocal acceptance of authorization artifacts within DoD, and between DoD and other federal agencies, for the connection of information systems (ISs).


2. **APPLICABILITY**

- a. This instruction applies to:
 - (1) OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff (CJCS) and the Joint Staff, the Combatant Commands, the Office of the Inspector of the Department of Defense (OIG DoD), the Defense Agencies, the DoD

Department of Defense

Cybersecurity (CS)
Implementation Guidebook for Acquisition Program Managers

This is a DRAFT, PRE-DECISIONAL document provided ONLY for internal government review. Release is limited to government personnel and contractors supporting the government review. A more extensive release is expected following approval by AT&L leadership. For any questions, please contact Mr. Mark Godino (Mark.Godino.cv@mail.mil).



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WASHINGTON, D.C. 20301-3140

PRE-DECISIONAL INTERNAL DRAFT VERSION 0.000 IN WORK

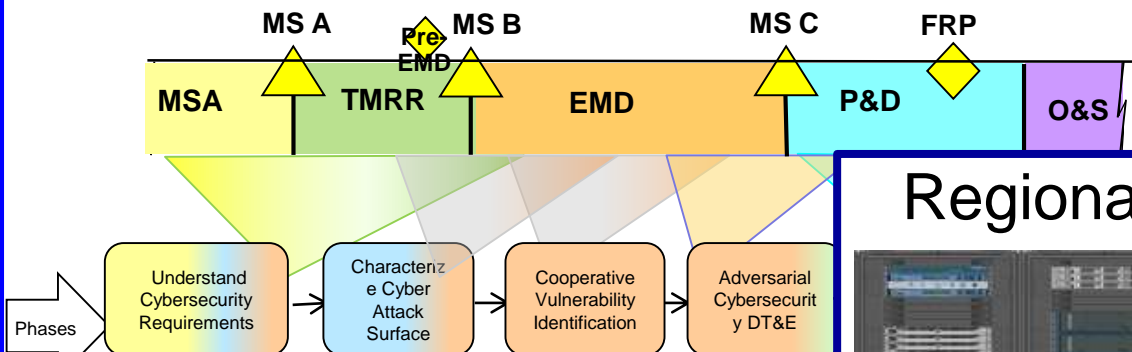
Cyber Investment Management Board



Cybersecurity Guidance and Ranges in AT&L



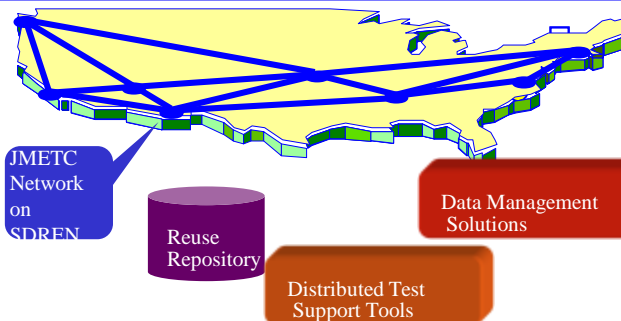
Cybersecurity T&E Process



Regional Service Delivery Point



National Cyber Range



JMETC Infrastructure

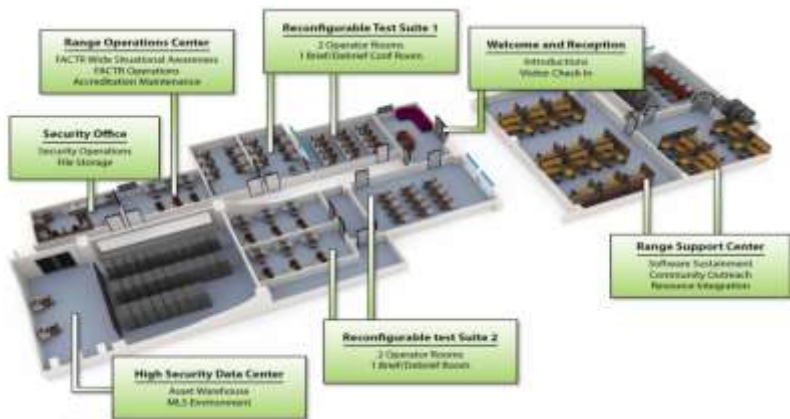


National Cyber Range (NCR)

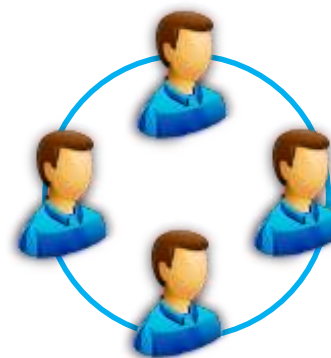


Secure facilities, innovative technologies, repeatable processes, and skilled workforce

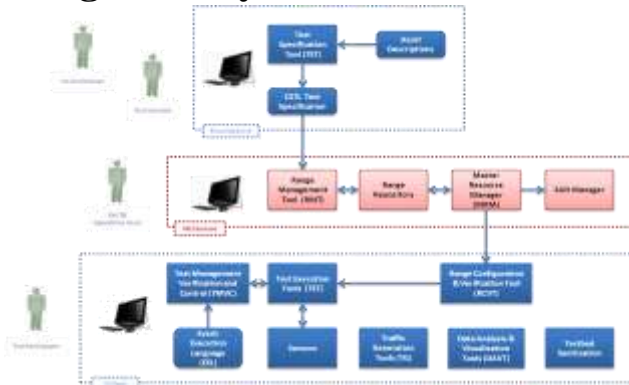
Computing Assets/Facility



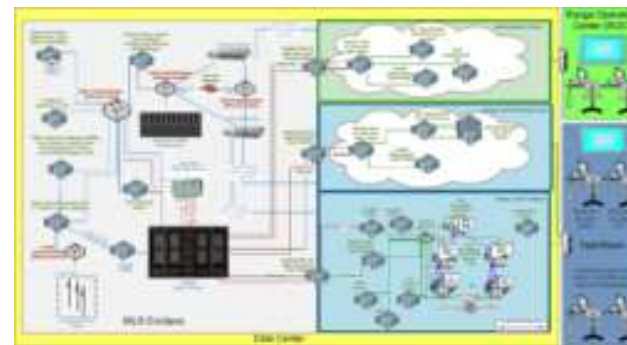
Cyber Test Team



Integrated Cyber Event Tool Suite



Encapsulation Architecture & Operational Procedures





Joint Mission Environment Test Capability (JMETC)



Significant Cost and Time Savings

Risk Reduction

JMETC Now Has Two Networks!

- **JMETC Secret Network (JSN)**
 - Operates on Secret Defense R&E Network (SDREN) since 2007
 - Open network; security agreements good for 3 years
 - Persistently and readily available
 - Primarily serves interoperability testing
 - Secret collateral only
 - NO CYBER OR COALITION
 - 76 sites
 - Supports Rapid Acquisition, Developmental Test, Operational Test, Interoperability Certification

- **JMETC MILS Network (JMN)**
 - Operated on the DREN
 - Requires security agreements for each event
 - Multiple independent levels of security
 - Accredited by DIA up to TS/SCI in June 2014
 - Working SAP/SAR accreditation
 - Includes compute and storage capability
 - Capable of supporting conventional and cyber testing
 - Capable of supporting events with coalition



Regional Service Delivery Points (RSDPs)

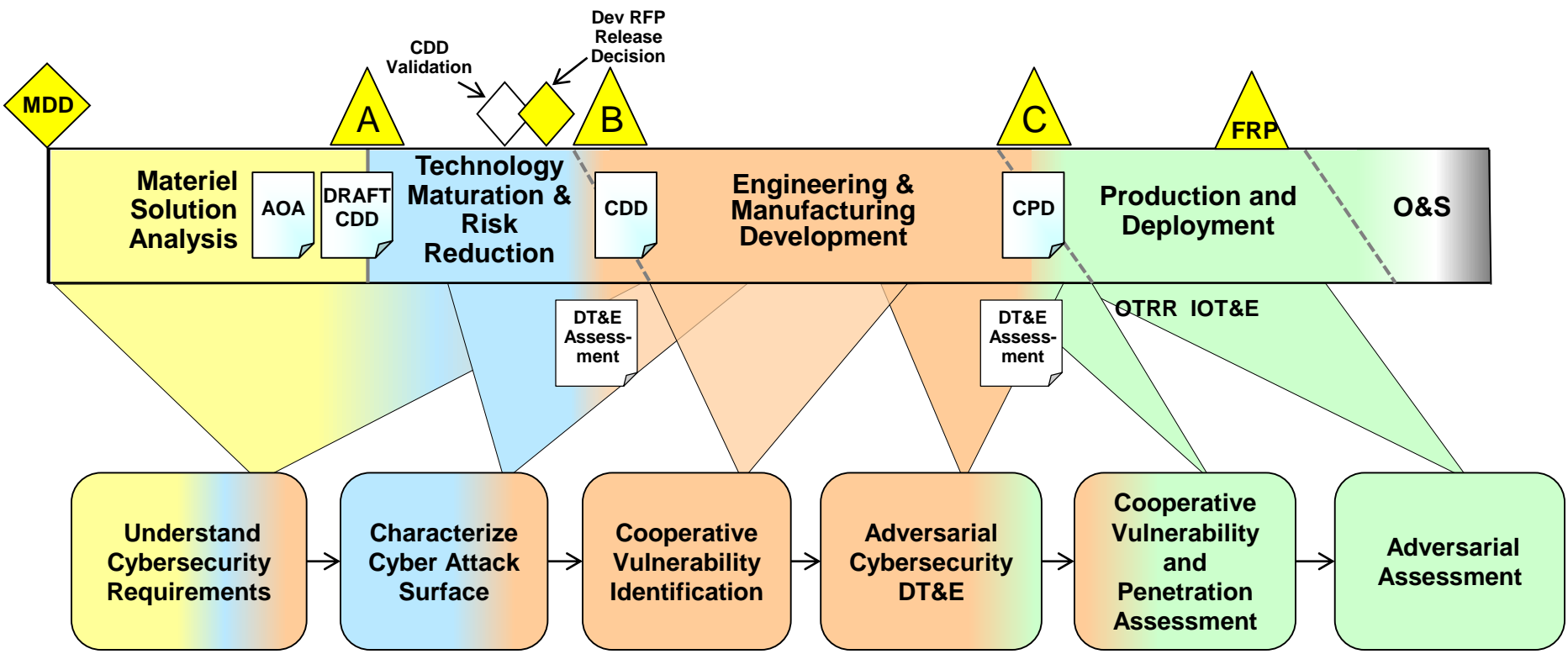


- The RSDPs reside on the JMETC MILS Network
- They will:
 - provide increased **capacity and scalability** to create persistent, representative cyber-threat environments
 - provide **common range services** (i.e. traffic generation, simulation, instrumentation, visualization, and integrated event management)
 - be **flexible and adaptable** to evolving users requirements
 - leverage the latest technology to deliver **cost and performance efficiencies**
 - **Eventually there will be about seven, distributed across the U.S.**





Cybersecurity 6-Step T&E Process Mapped to the Acquisition Lifecycle





Triton UAS Cybersecurity Pilot

5 month OSD Study



- Executed by Northrup-Grumman & Navy PM
- Exercise the Cybersecurity process
- Use the NCR: Resiliency of Triton to representative Cyber Attacks



Question: How does the system behave in response to realized Cyber Threats?



Air Force F-16 Cyber Study



- Focus on the Cyber T&E Process
- Study Complete
- Results expected at TRMC in mid-March





Vision



- Cybersecurity T&E of our weapons systems is essential to meeting warfighter requirements
- Systems must be:
 - Engineered to be secure in a Cyber-contested environment
 - Resilient when vulnerabilities are exploited
- Cybersecurity must be engineered in from the beginning

**And it must be informed by DT&E
Cyber testing in OT is TOO LATE!**



I need your help!

- Testers:
 - Work closely with your Systems Engineering counterparts to ensure Cybersecurity requirements are understood
 - Ensure T&E planning & execution adequately verify/validate requirements
 - Ensure adequate T&E resources
- Requirements / Resource Sponsors:
 - Ensure CDDs include Cybersecurity requirements
 - Ensure CONOPS includes detailed description of Cyber environment
- Program Managers / PEOs:
 - Engage early up your Service chain of command and across the services to facilitate early Cyber engineering and testing
- Contractors / Primes:
 - Cybersecurity must be the foundation of your system

YOU can help improve Cybersecurity!



Questions