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Maneuver Support Center of Excellence

COL Thamar Main

MSCoE CDID

Requirements Determination Division Chief

2 AUG 2016



Agenda



- **MSCoE CDID-RDD intro**
- **The Old**
- **The New/Future**
- **JCIDS Improvements**
- **Questions**



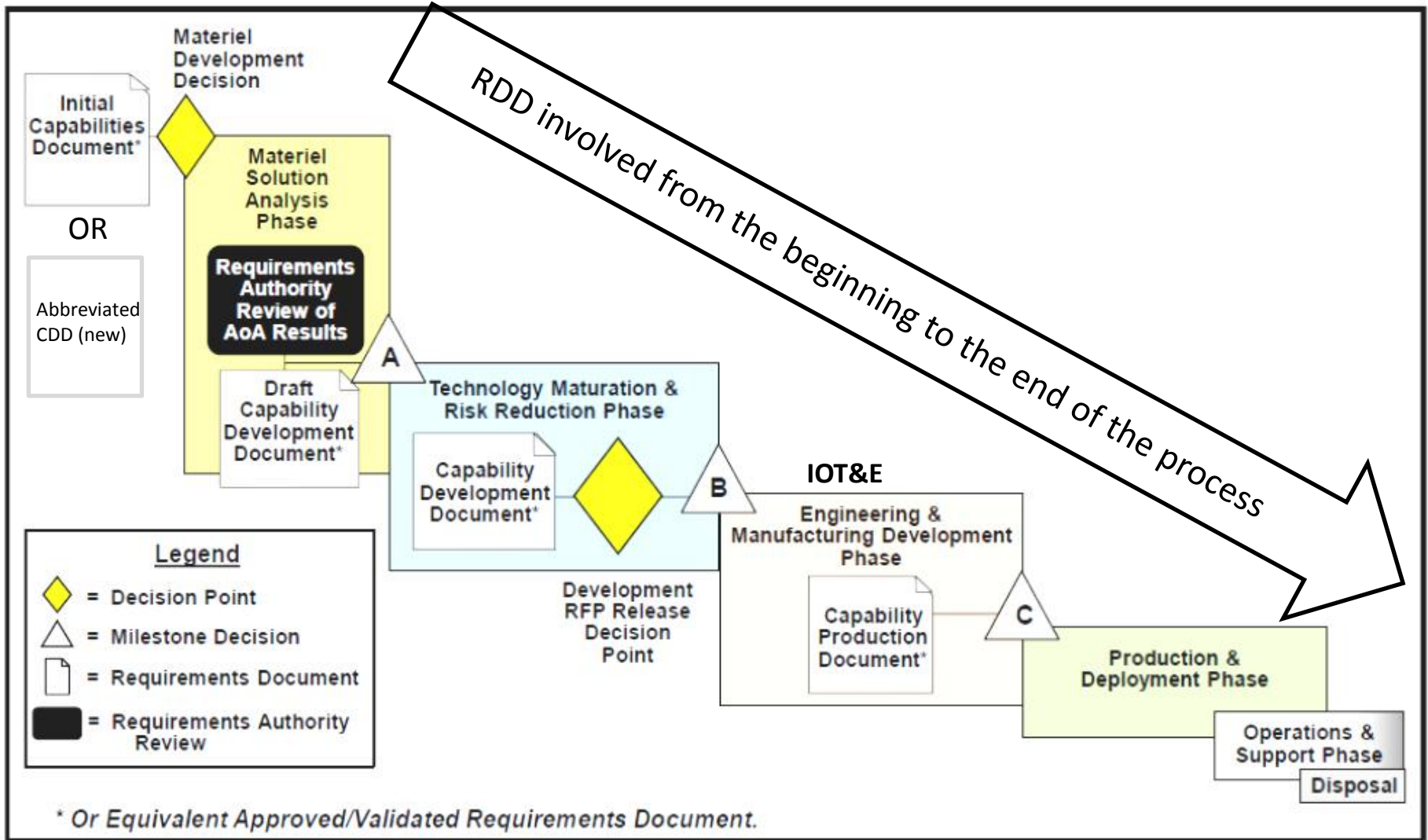
What we do:

- **Engineer, Military Police, and CBRN Materiel Requirements**
 - Write the CDDs and CPDs necessary to define requirements and allow funding to be established
 - Coordinate with Concepts, Organization and Doctrine Division
 - Input to Capabilities Needs Analysis (CNA)
 - Input to other CoE led CDD/CPDs
 - Input to LIRA/CPR
 - Doctrine, Tactics, Techniques training (post NET)



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Requirements and Acquisition Processes



DoDI 5000.02 dated 7 Jan 2015 Establishes policy for the management of all acquisition programs.



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Chemical Corps Pre-2001

- ~ 30% more force structure
- No concept of CWMD or WMD-Elimination (no doctrine, strategy, policy, etc...)
- 9 different kind of Chemical Companies across all compos
- NBC NCOs in EVERY company in the Army
- M8 Alarm, M8 paper, and M256 Kit considered the “high-end” detection equip.
- No Active Compo CBRN BDE
- No 20th CBRNE Command
- JA/JB Teams in the active component
- Focused on Protection as part of Passive Defense (PD) – reactive, right-of-boom
- Technical Escort Unit (TEU) under AMC vs. FORSCOM (TDA Structure)
- Homeland Defense not understood or embraced
- TEU part of AMC & focused on the Surety mission with over 50% civilian structure
- Quality/consistent NBC training at CTCs & unit level down to Cos (focused on PD)
- All SMCT NBC skills still considered proficient after the Desert Storm I backlash
- NBC vs. CBRN



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Chemical Corps Regimental Strategy 2025

Our Mission

The Chemical Corps conducts CBRN operations in order to protect the force and the nation from WMD/CBRN threats and hazards.

Commandant's Vision

Dragon Soldiers, America's CBRN counterforce. World leader in countering weapons of mass destruction defense, guarding the force and protecting the homeland.

Our Core Competencies

- Advise commanders regarding CBRN defense and CWMD missions
- Conduct CBRN reconnaissance and surveillance
- Shield/protect friendly forces against CBRN hazards
- Consequence Management

Our Campaign Plan

Line of Effort 1 – Train Chemical Soldiers, units, and staffs

Line of Effort 2 – Develop Chemical Corps leaders

Line of Effort 3 – Enhance and expand CWMD/CBRN defense capability

Line of Effort 4 – Take care of our profession

Line of Effort 5 – Build and maintain international partner capacity

Endstate

A force trained and ready for operations across the Countering Weapons of Mass Destruction mission spectrum

We Support the Force



CBRN/CWMD Support Concept



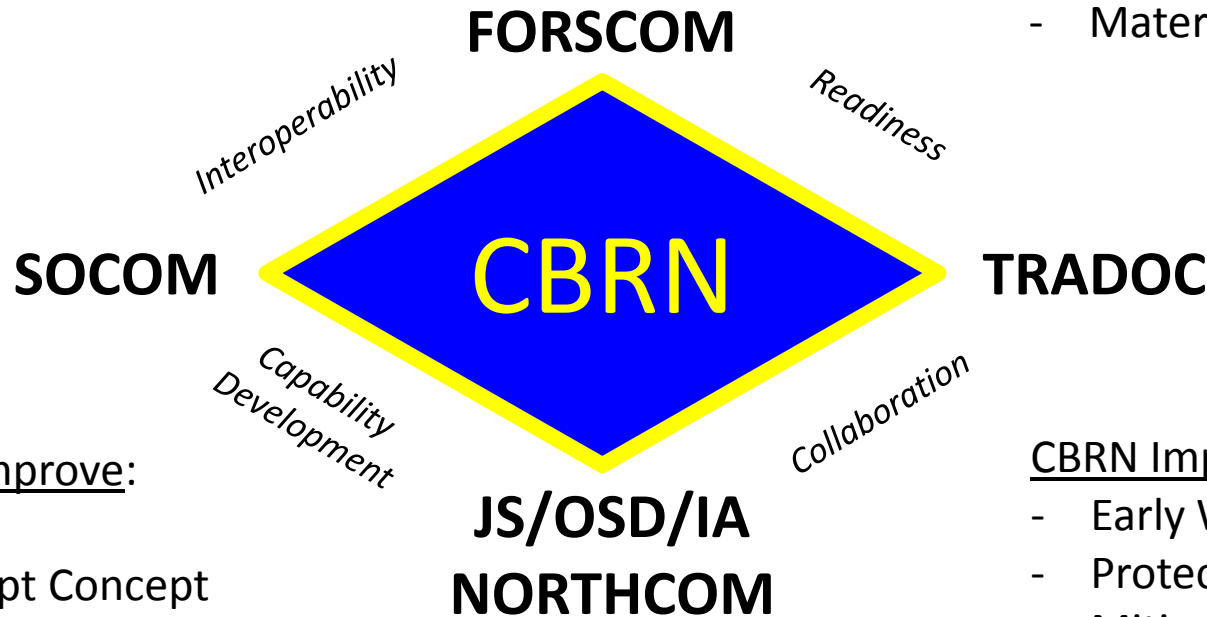
Integrated approach to building capability and capacity, together

The Big 3 – “What We Are For”

- Support the Warfighter
- Increase Readiness
- Build Capability and Capacity

Combined Efforts

- Doctrine
- Organization
- Training & Ldr Dev
- Material



Seek ways to improve:

- AOC
- Maneuver Spt Concept
- “4 Pillars” of Readiness

CBRN Imperatives:

- Early Warning
- Protection
- Mitigation

Focused to best execute the CWMD mission set, in order to gain advantage for the strategic win.



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Future Efforts??



Things we are doing to improve:

- Establish better communication with those performing 6.1 level research
 - Identify potential 'game changing' technology to inform requirements
- Establish better communication with Industry
- Write better Requirements
 - No requirements geared narrowly to a specific technology unless that technology is a potential Revolution in Military Affairs
 - No performance specification without a reason. Defend why Threshold is Threshold from an Operationally relevant position
 - Don't drive Test costs unnecessarily high
 - Clearly communicate the highest priorities within a requirement document

Things that might make a difference:

- Non-specific Threat Detection
- Reduced Logistics burden for Decon (non-aqueous? Self-deconning? Disposable? A solution for those 'hard to reach places'? Better TTPs?)
- No more MOPP suits or gas masks
- Increased Early Warning capability (identify, communicate, and avoid the hazard)
- Anything that preserves combat power for combat



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Possible JCIDS Reforms



These are only Possible – not adopted.

- Weighted Requirements – more clearly communicate what the CoE considered the most valuable KPP/KSA/APAs
- Establish when appropriate, levels between Threshold and Objective (inform VATEP, incentivize performance above Threshold for the most valued aspects)
-
- Centers of Excellence co-author documents to industry
- More open communication with CoEs and PMs for those interested in responding to proposal (allow on the spot clarification of unclear requirements)



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QUESTIONS?

COL Tamar Main

MSCoE CDID-RDD

573-563-7955

thamar.a.main.mil@mail.mil



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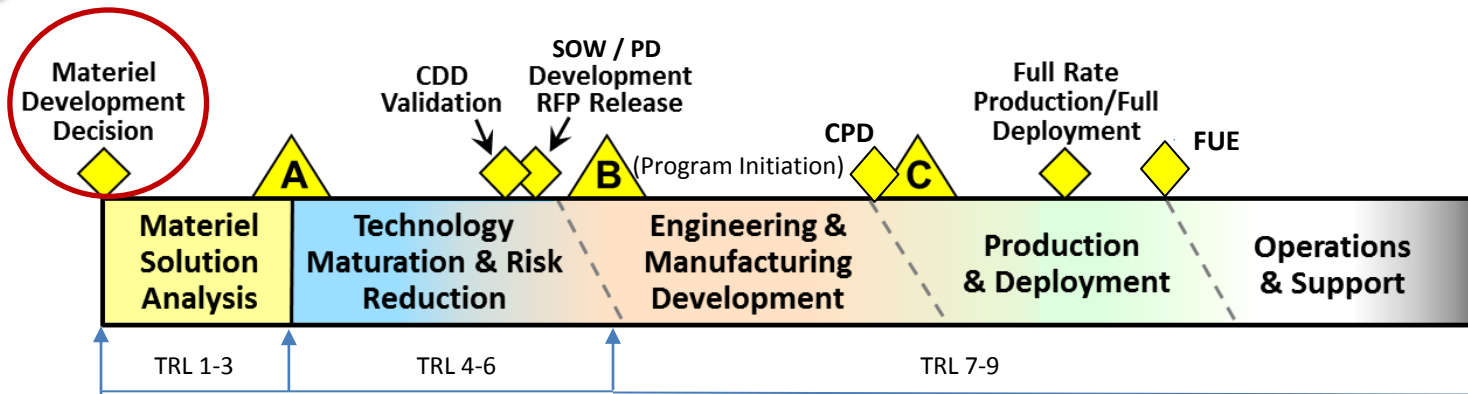


BACKUP



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Material Development Decision (MDD)



Need Identification
(DoD: Materiel Development Decision)



The decision that a new product is needed and that activities to analyze alternative solutions will occur. (USER NEEDS)

Solution Analysis

DoD: Materiel Solution Analysis Phase

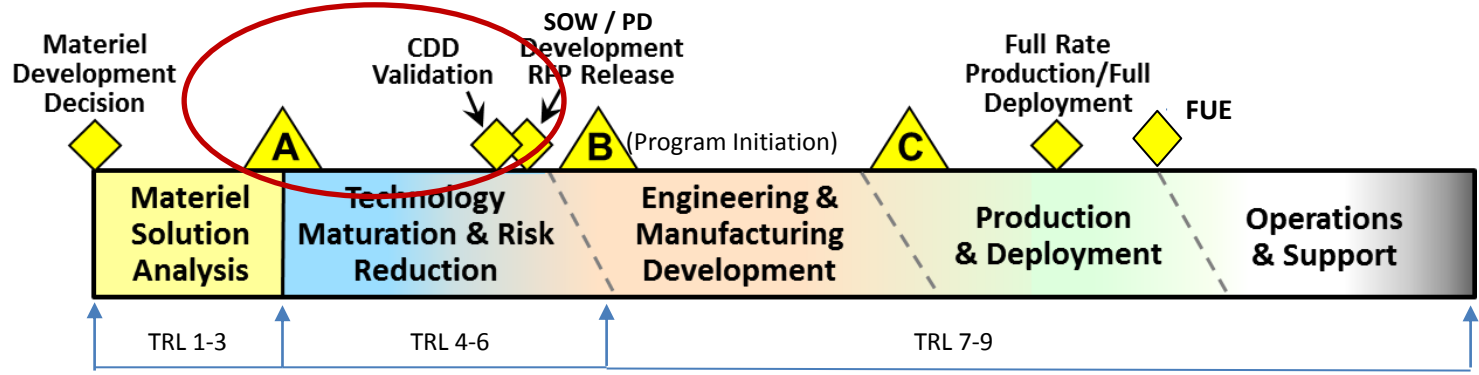
- Begin translating validated capability gaps into system-specific requirements including the Key Performance Parameters (KPPs), Key System Attributes (KSAs).
- Conduct planning to support a decision on the acquisition strategy for the product.
- **Analysis of Alternative (AoA) solutions, key trades between cost and performance, affordability analysis, risk analysis, Market Research and planning for risk mitigation are key activities in this phase.**
- Component Acquisition Executive **selects a Program Manager and establishes a program office** to plan the acquisition program with emphasis on the next phase. (AT MDD)

FUE = First Unit Equipped
 TC/MR = Type Classification / Material Release
 SOW = Statement of Work
 PD = Purchase Description
 RFP = Request for Proposal
 CDD = Capability Development Document



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Milestone A



Risk Reduction Decision (DoD: Milestone A)

An investment decision to pursue specific product or design concepts, and to commit resources required to mature technology

Technology Maturation and Risk Reduction

DoD: Technology Maturation and Risk Reduction Phase

- Includes additional design trades and requirements trades necessary to ensure an affordable product and executable development and production programs.
- Includes **competitive sources conducting technology maturation and risk reduction activities** and preliminary design activities up to and including Preliminary Design Review prior to source selection for the EMD phase.

Requirements Decision Point (DoD: CDD Validation)

Major cost and performance trades have been completed and enough risk reduction has been completed to support a decision to commit to the set of requirements that will be used for preliminary design activities, development, and production (subject to reconsideration and refinement as knowledge increases).

Development RFP Release Decision

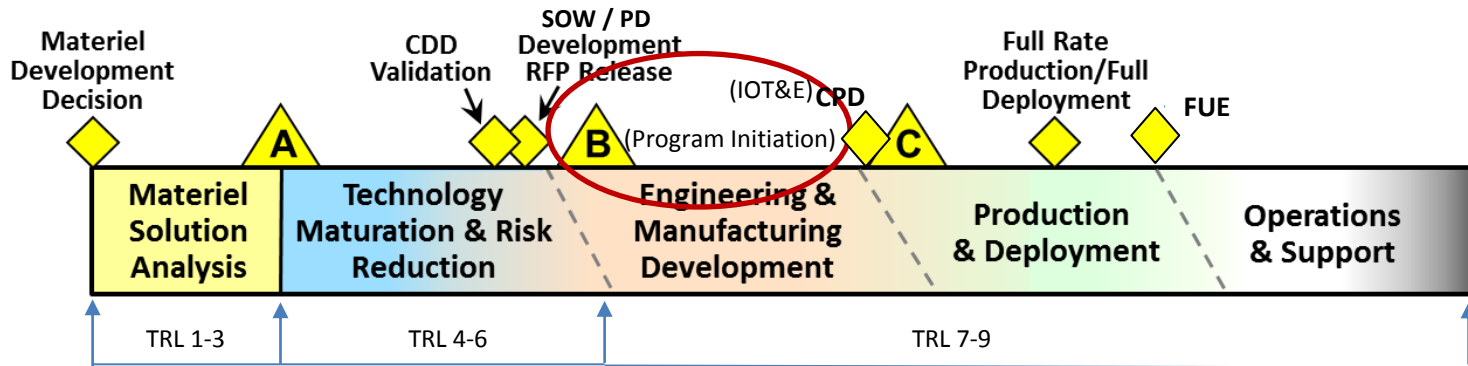
Planning for development is complete and a decision can be made to release an RFP for development (and possibly initial production) to industry.

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Milestone B



Development Decision (DoD: Milestone B)

The decision that commits resources (authorizes proceeding to award of the contract(s)) needed to conduct development leading to production and fielding of the product.



Development

DoD: Engineering and Manufacturing Development Phase

- Complete all hardware and software detailed design.
- Retire any open risks.
- Build and test prototypes (IOT&E) or first articles to verify compliance with capability requirements.
- Prepare for production or deployment.
- **Successful completion of adequate developmental testing to support entering Low-Rate Initial Production or Limited deployment.**

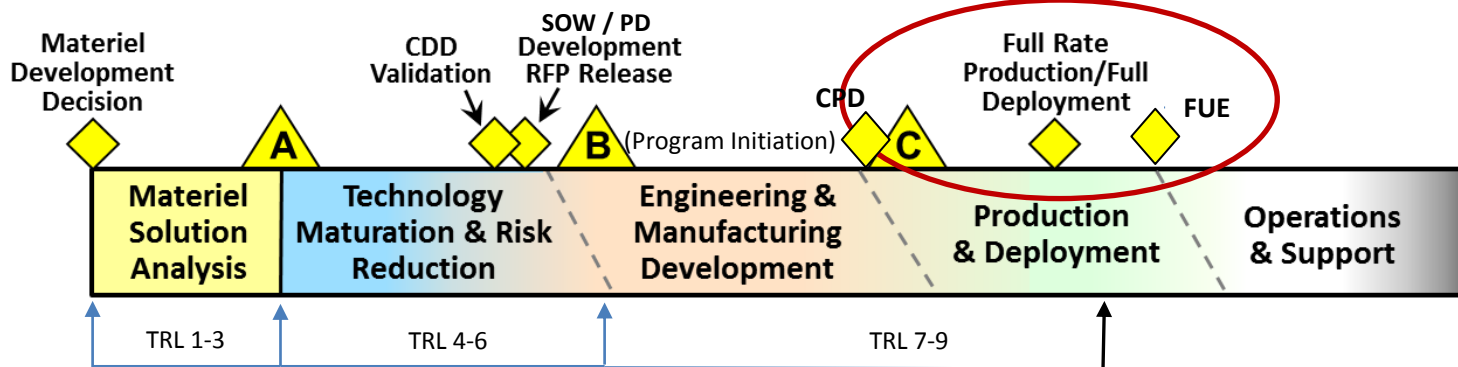
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****Some programs, IOT&E can come after Milestone C**



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Milestone C



Initial Production Decision (DoD: Milestone C)



Low-Rate Initial Production (LRIP) or Limited Deployment and Operational Test

DoD: Production and Deployment Phase

- LRIP establishes the initial production base for the system, provides operational test articles, provides an efficient ramp up to full rate production, and maintains continuity in production pending completion of operational test and evaluation.
- While this portion of the phase should be of limited duration so that efficient production rates and/or full fielding can be accomplished as soon and as economically as possible, it should be of sufficient duration to permit identification and resolution of any significant deficiencies prior to full rate production.

The production decision, usually based on developmental test results, commits the resources (i.e., authorizes proceeding to award the contract(s)) required to enter production and begin fielding of the product. The commitment to enter production is very difficult and expensive to reverse.

OPA \$ or APA \$ for AMMO/Class V

The decision, following completion of operational testing of representative initial production products, to scale-up production and/or fielding.

Full-Rate Production / Full Deployment



Production, Deployment and Sustainment

DoD: Production and Deployment Phase, continued...

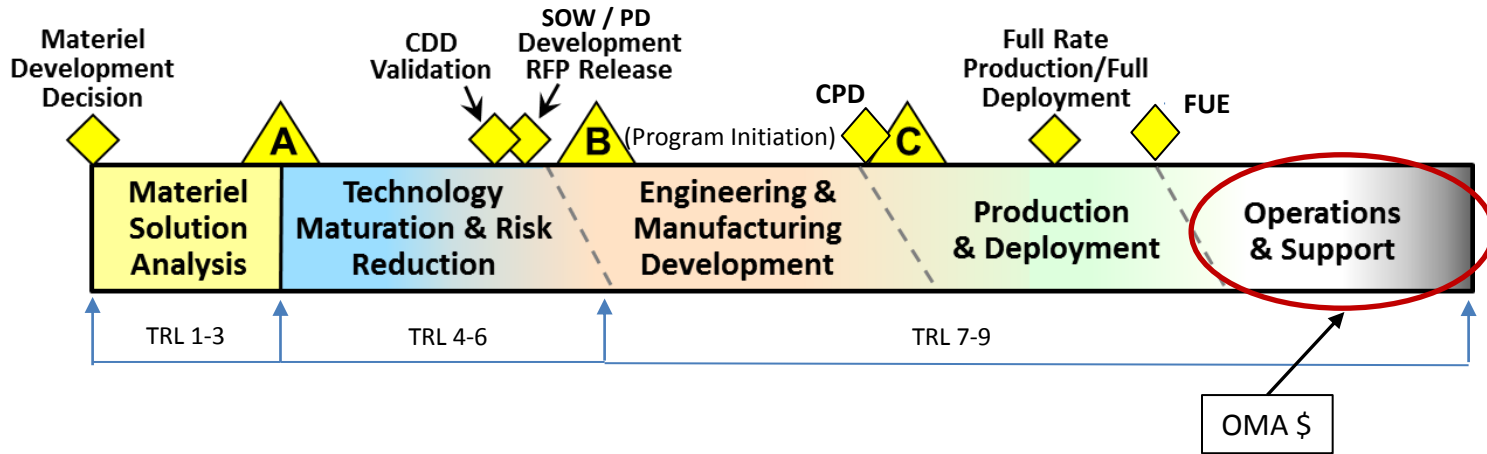
- Remaining production or deployment of the product is completed, leading to Full Operational Capability or Full Deployment.
- Except as specifically approved by the MDA, critical deficiencies identified in testing will be resolved prior to proceeding beyond LRIP or Limited Deployment.

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Operations and Support Phase



Sustainment / Disposal

DoD: Operations and Support Phase

- The product support strategy is executed to satisfy materiel readiness and operational support performance requirements, and sustain the system over its life cycle.
- At the end of its useful life, system is demilitarized and disposed of in accordance with all legal and regulatory requirements and policy relating to safety (including explosives safety), security, and the environment.

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 Document



Technology Readiness Levels (TRLs)



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Technical Readiness Levels	Definition
1	Basic principles observed and reported
2	Technology concept and/or application formulated
3	Analytical and experimental critical function and/or characteristic proof-of-concept
4	Component and/or breadboard validation in laboratory
5	Component and/or breadboard validation in relevant environment
6	System/subsystem model or prototype demonstration in a relevant environment (ground or space)
7	System prototype demonstration in a space environment
8	Actual system completed and "flight qualified" through test and demonstration (ground or space)
9	Actual system "flight proven" through successful mission operations

Proof of Concept. Scientific Study

RDT&E

-Approved CDD w/ CARDS number.
-Funding
-Can be a Program Of Record

RDT&E = Research, Development, Testing and Evaluation
 CDD = Capability Development Document



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JCIDS Documents supporting Acquisition Milestones

<u>JCIDS Document</u>	<u>Milestone</u>	<u>TRL Level</u>
ICD or Abbreviated CDD	Milestone A	5 or lower
CDD	Milestone B	6/7
CPD	Milestone C	8/9



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Prerequisites for World Wide Staffing of JCIDS CDDs/CPDs

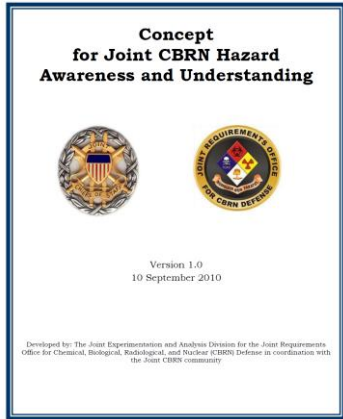


Requirements for WWS of JCIDS CDDs/CPDs

- Analysis of Alternatives (AoA)
- Cost-Benefit Analysis (CBA)
- Technology Readiness Level Assessment (PM)
- Life Cycle Cost Estimate (PM)
- Program Summary Paragraph (PM)
- Capability Development Document (CDD) or Capability Development Document (CPD)
- System Training Plan (STRAP)
- Architecture Products

“As a commander of a BCT operating in either a WMD or CBRN environment, I need time. I need you to provide me time so I can decide on what actions I need to take.” BCT commander during 8A WfF microexperiment, DEC 2015

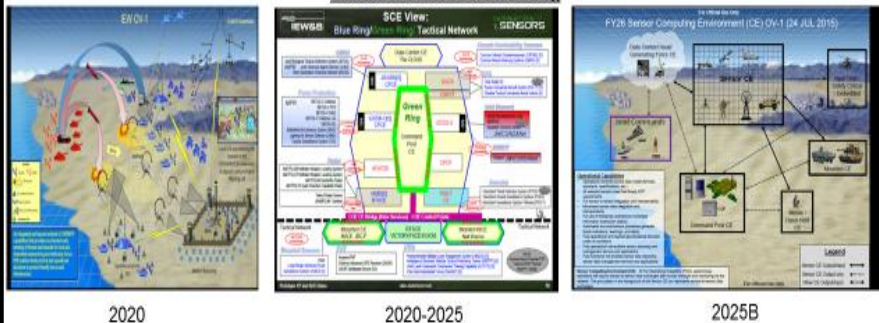
Joint Concept for CBRN Hazard Awareness and Understanding (HAU)



- Developed by the Joint Staff in 2010
- Consistent with the CWMD JIC 2008, CCJO 2009, and the JOE 2010
- 2016–2028, describes how the JFC will employ/conducts CBRN hazard awareness and understanding
- Focused on S&T and experimentation...informs DOTMLPF–P
- The Military Problem: *the Joint Force cannot achieve complete awareness of CBRN hazards. Further, the Joint Force lacks the capabilities necessary to attain shared situational understanding of the implications these hazards pose to joint force operations.*
- The Central Idea: *The Joint Force achieves near real-time comprehension of the character, nature, or subtleties of WMD threat, neutral CBRN sources, and CBRN hazards to aid decision making and risk communication by employing battlespace awareness and command and control capabilities and processes.*

Achieving WMD Situational Understanding and CBRN Early Warning

Joint Force Commanders make strategic, operational, and tactical decisions through action informed from: Awareness and Understanding



- Joint Combined Arms Maneuver and Wide Area Security are achieved through cross domain synergy (space, hyper spectral imagery/environmental monitoring and cyberspace through social media and SIGINT as examples)
- Joint Force commander must maintain situational awareness over great distances and between dispersed formations.
- Joint Force Commanders must be able to task and receive collection from assets during strategic movement and tactical maneuver.
- To assure freedom of action Joint Force Commanders must have the ability to extend the tactical ISR to recognize, sense, interrogate, analyze, DECIDE, and disseminate to the tactical point of need

Joint Concept Prospectus: WMD Early Warning

- Refreshes the 2010 CBRN HAU concept (CCJO 2012, JOE 2035, and Army Operating Concept)
- Based on the tactical commander’s need to generate space, that creates time, for the commander to make informed decisions
- Describes WMD Environment, WMD Awareness, and CBRN Situational Understanding
- The military challenge: *“In 2025–2040, how will the tactical commander make proactive decisions to protect forces and critical assets while operating in a WMD Environment?”*
- The Central Idea: *“To provide a functionally integrated WMD Early Warning framework that allows commanders to make proactive decisions that enable survivability, maintain Freedom of Movement & Maneuver, and Freedom of Action.”*