



21st Annual National Defense Industrial Association
Systems and Mission Engineering Conference

Update on R&M Engineering Activities: Rebuilding Military Readiness

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Office of the Under Secretary of Defense for
Research and Engineering

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Agenda

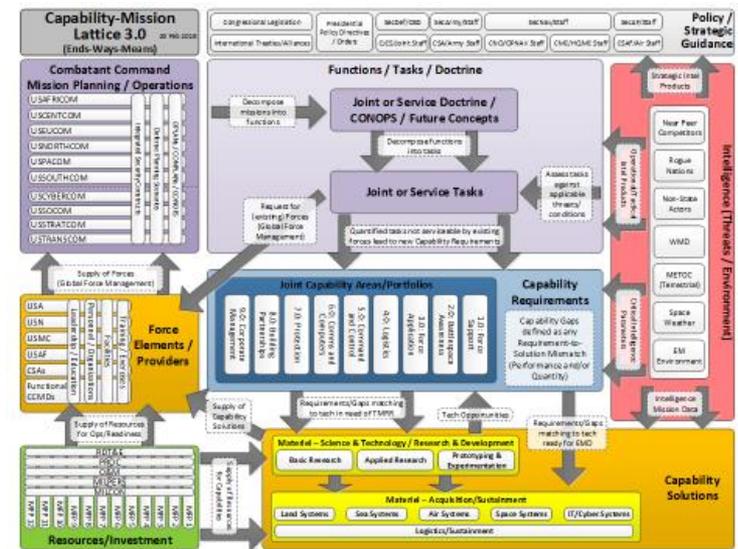
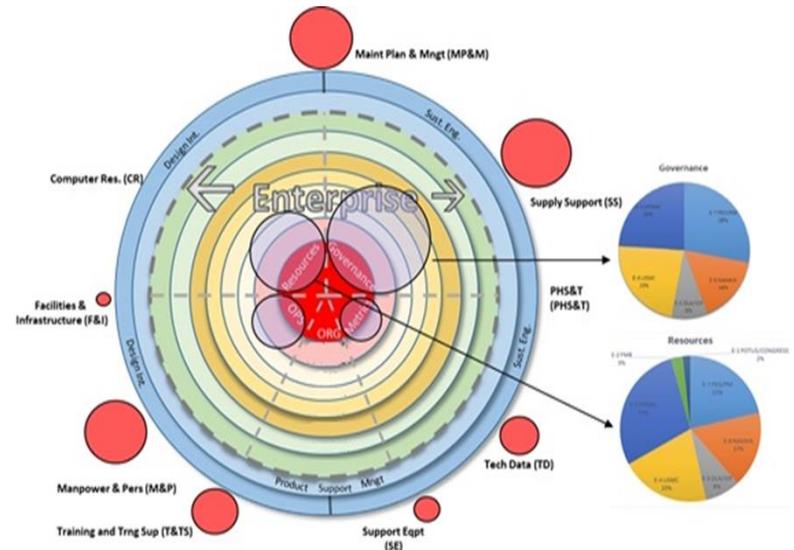


- **Background**
- **Concept of Sustainment**
 - Study Scope
 - Mission Tasks vs Mission Success Factors
 - Methodology
 - Summary

Background



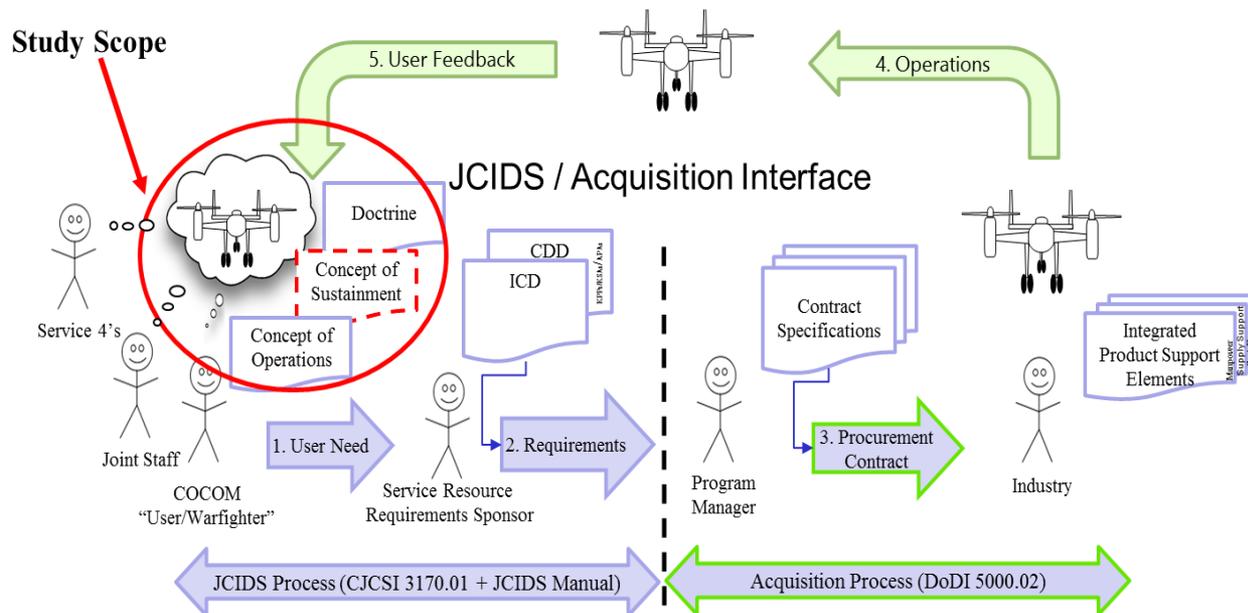
- Provide an update to the National Defense Industrial Association (NDIA) Systems Engineering (SE) community about the Reliability and Maintainability (R&M) Engineering activities
- DASD(SE) was part of a readiness study of Office of the Secretary of Defense's (OSD's) objective to improve readiness
 - Examined readiness reviews, Operational Test reports, and conducted stakeholder interviews
 - Findings mapped against Integrated Product Support (IPS) elements (12) as well as Enterprise elements (Resources, Governance, Operations, and Metrics)
- Identified need for a "Concept of Sustainment" during the requirements process



Concept of Sustainment Project



- Investigate doctrine, plans, policy and guidance that relates mission needs to sustainment concepts & readiness outcomes
- Develop guidance for methods to develop a Concept of Sustainment



Required readiness outcomes are integral to development and acquisition



Readiness Integral to Mission Tasks

- Readiness **functions** and **tasks** integral to mission success
- Quantitative and qualitative readiness measures
 - Tied to factors that impact mission success
 - Mandatory Sustainment KPP (Ao, AM) with supporting attributes (reliability, maintainability and BIT)

Mission Functions	Mission Tasks										
	Deploy	Surveil	Detect	Track	ID		Launch	Control	Wpn	Assess	Reconstitute
					Commit	Engage					
Battle Management		X									
Battle Space			X	X	X	X	X			X	
Track Management				X	X	X					
Engagement Decision						X					
Engagement Rate							X				
Engagement Effectiveness				X				X	X		
Re-engagement Decision										X	
Readiness	X	X	X	X	X	X	X	X	X	X	X

Readiness is the “metallurgy of the kill chain”



Methodology

Task 1- Baseline & Recommendations

- ☑ **Baseline current Service doctrine, policies, guidance, tools and techniques to determine relationship between mission needs, sustainment concepts and readiness requirements**
 - Develop engagement approach, literature search of existing doctrine, policy and guidance followed by interviews with personnel involved in requirements development and maintenance policy
 - Document current baseline policies, processes, tools and techniques being used

- ☐ **Provide recommendations to improve the linkage between mission needs, Initial Capabilities Document/Capability Development Document (ICD/CDD), and readiness**
 - Identify enhancements (policy, guidance, tools, workforce) to improve linkage between mission needs, key design and support attributes, and sustainment and readiness outcomes
 - Document gaps and recommendations



Methodology

Task 2 - Functional Requirements

□ Develop guidance to establish Concept of Sustainment Functional Requirements

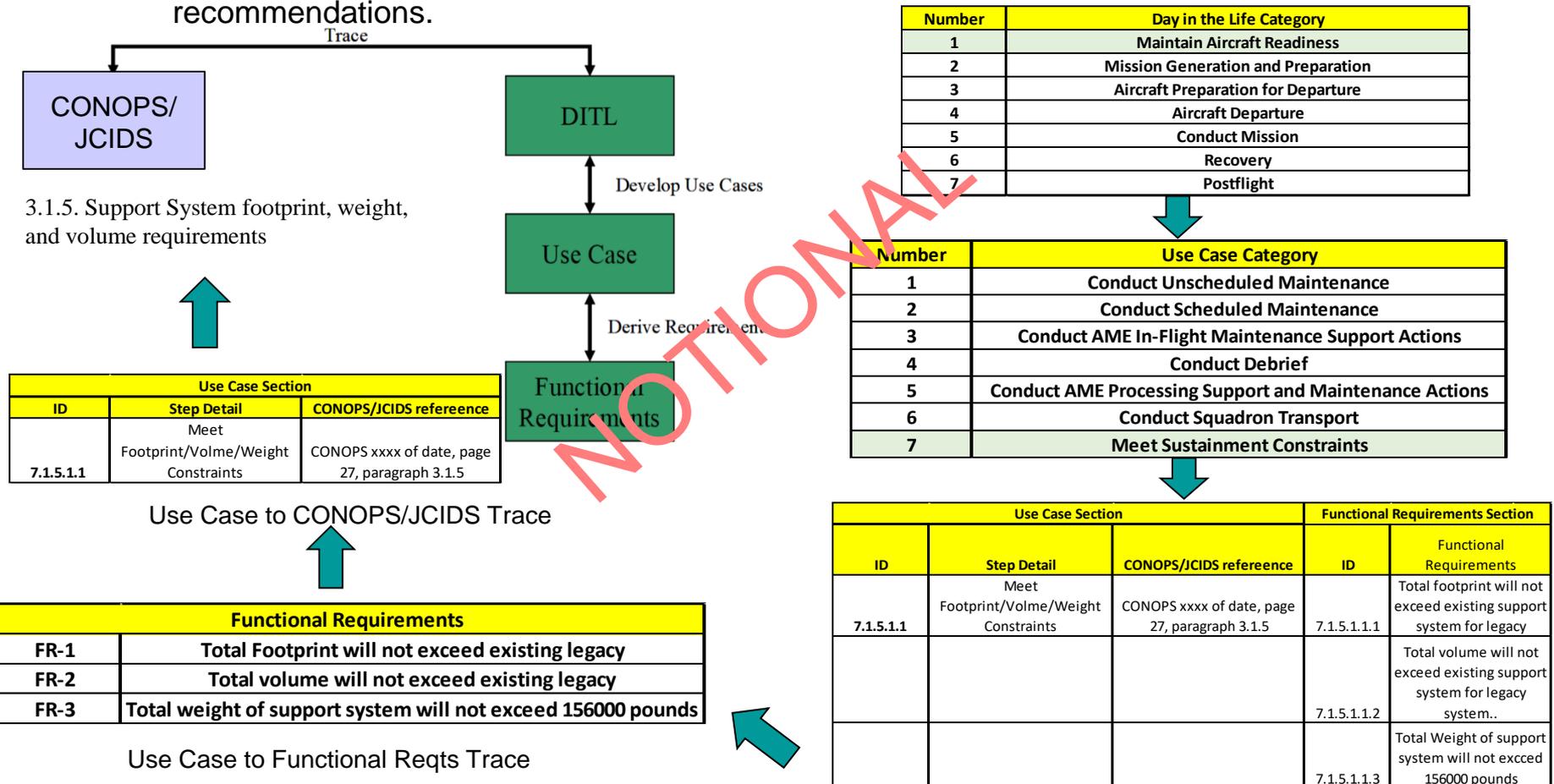
- Develop method to identify sustainment functional requirements with associated metrics and design attributes
- Develop generic sustainment functional requirements for use by Joint Staff and the Services
 - Constraints to be considered
 - Deployment scenarios
 - Support scenarios
 - Sustainment characteristics
 - Key design and support attributes



Use Case Example: Identify Readiness Functions

- Use case example:

- Work experienced personnel (Service Maintenance personnel, Field support Teams Engineers/Logisticians) to perform a use case analysis. Refine gaps and recommendations.



Summary



- Engineers and logisticians need to be involved early to shape requirements during concept development
- Reliability, maintainability and sustainment functions, tied to the CONOPS, are critical to meeting readiness objectives
- Concept of sustainment project underway to baseline service practices relating mission needs to readiness outcomes
- Establishing guidance for methods to develop a Concept of Sustainment

Concept of Sustainment is essential to achieving readiness outcomes

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For Additional Information



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