Overview of SAE EIA933

Requirements for a COTS Assembly Management Plan

DPMC 2025

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Agenda

- Introduction
- Why EIA933 matters
- Scope and Applicability
- The Standard
- Coming Updates
- The DoD COTS Checklist
- Use Cases
- Closing/Q&A

Why EIA933 Matters

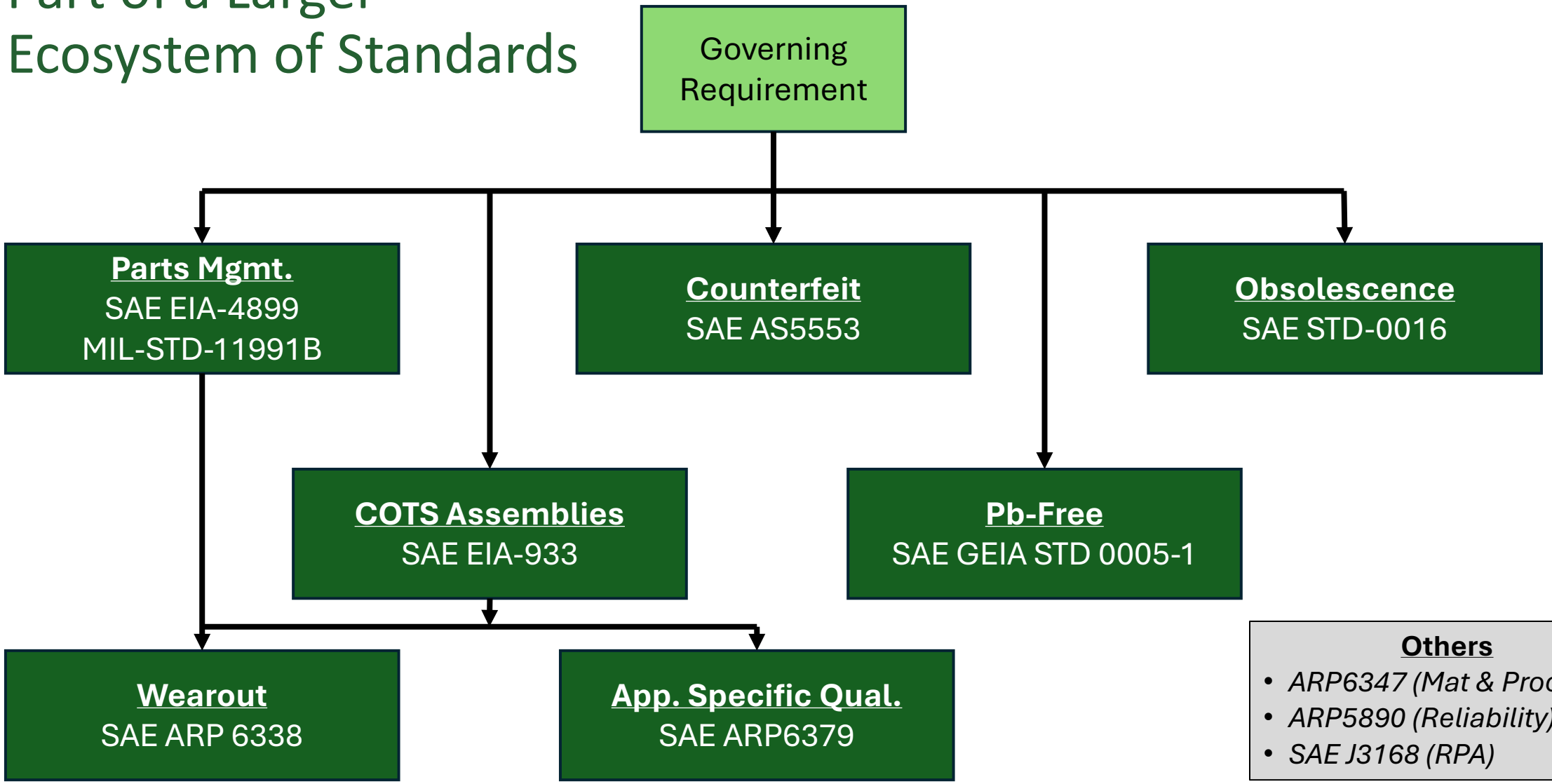
- Acquisition Reform
  - 1994 Perry Memo
- Adoption Challenges
  - Regulations and Risks
  - Lifecycle Changes
  - Increased Documentation Requirements
  - Design Change Documentation
  - Environmental Shortfalls

EIA933

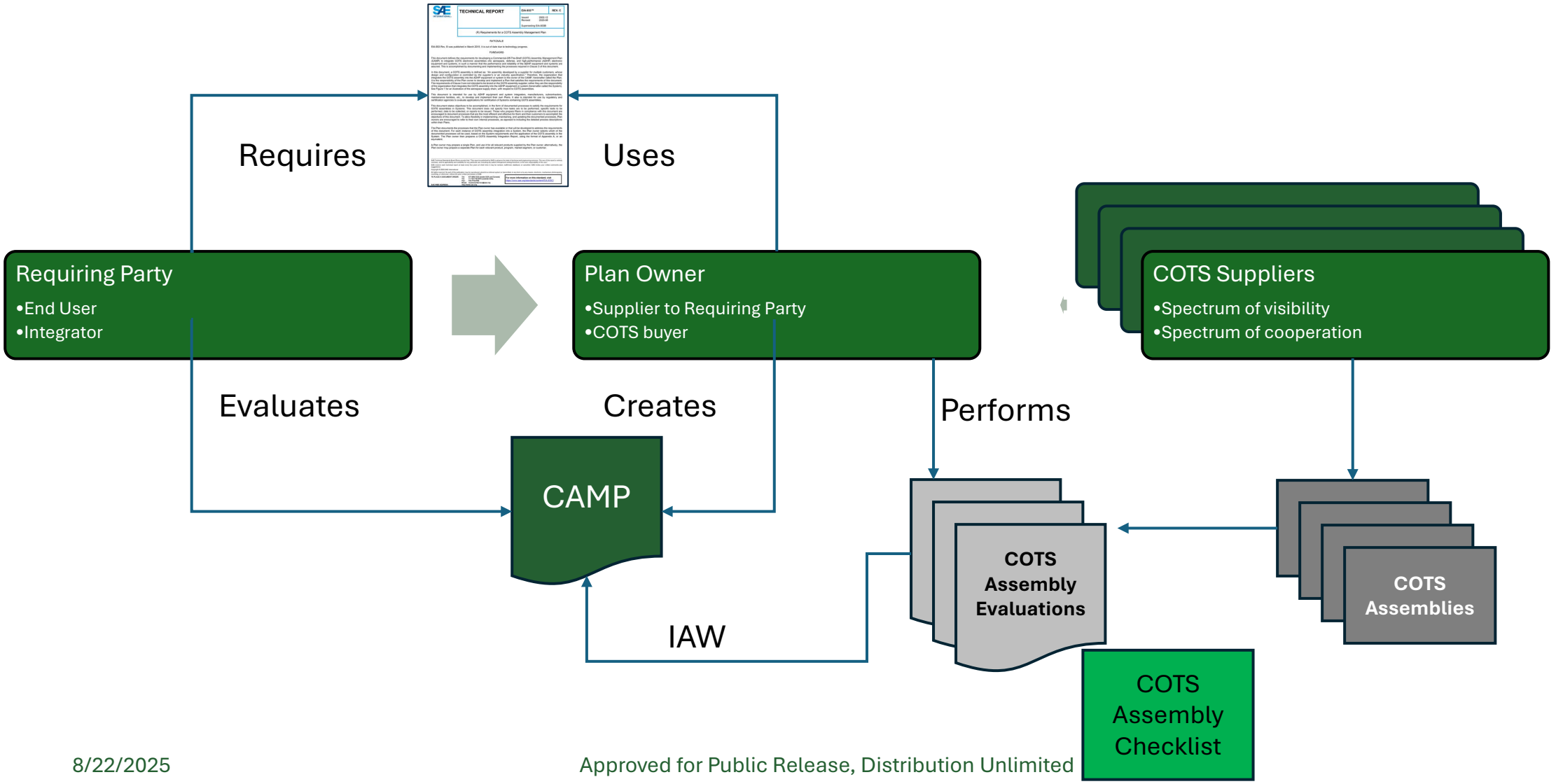
- Requirements for a COTS Assembly Management Plan (CAMP)
  - Sets out the Objectives for Plan owners to create overall processes to ensure COTS assemblies are reliable in their applications
  - Sets out what must be considered/included in the COTS assembly evaluation/acceptance process

- Key element of an Electronics Component Management Plan (ECMP) supporting Commercial Aviation

Part of a Larger Ecosystem of Standards



Where does EIA933 fit in the process?



The Standard - Overview

- Scope
- References
- Technical Requirements
- Administrative Requirements
- Terms, Definitions, and Abbreviations

Technical Requirements – Changes Coming

- Traditionally flexible and intentionally non-prescriptive
- Moving to a more explicitly prescriptive document

- Understand suitability for application - Checklist
- Identify risks
- Accept risks or apply mitigations
- Document in required artifacts

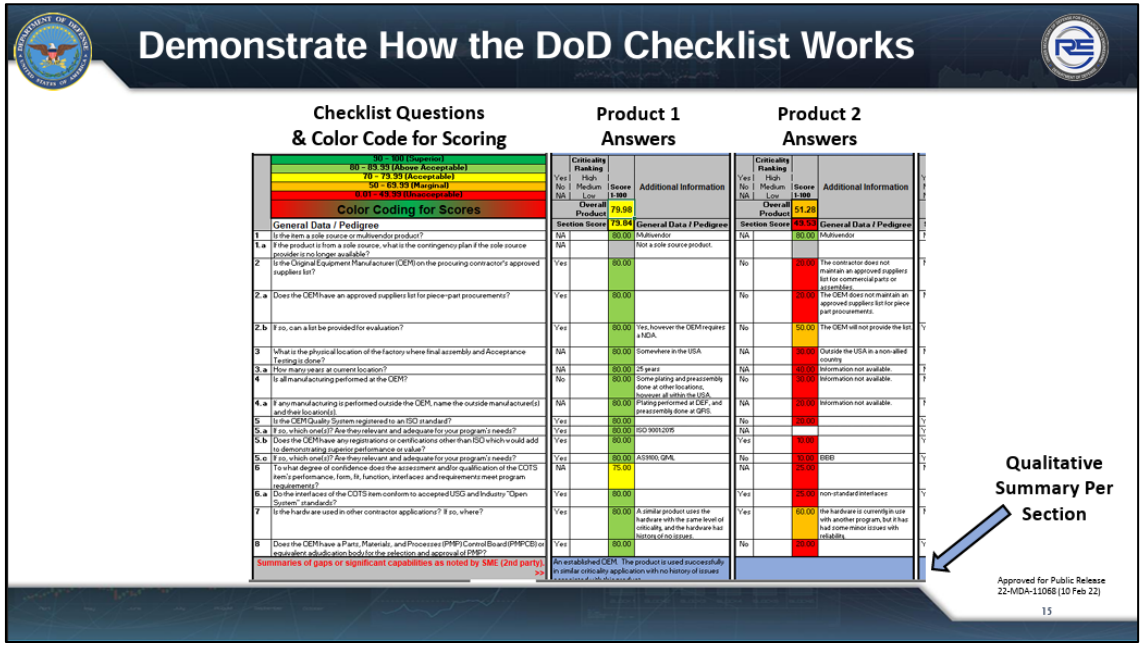
Operating/Function over Expected Lifetime	3.1	Functionality
	3.2	Operating, Storage and Transportation Environment Stresses
	3.3	Derating
	3.4	Aging
	3.5	Reliabiltiy
	3.6	Safety
	3.7	Qualification
System Integration	3.8	Compatibility with System Assembly Process
	3.9	Maintainability and Testability
Supplier Processes	3.10	Supplier Parts Selection Process
	3.11	Configuration Control
	3.12	COTS Assembly Design
	3.13	Quality Assurance
Internal Parts Risk	3.14	Materials
	3.15	Internal Parts
	3.16	Counterfeit Parts and Materials
	3.17	Cyber Security
	3.18	Obsolescence Management

Updating EIA933

- Review and update all requirements – clearer shall statements
- Add BOM capture by visual inspection
- Enhance requirements
  - Cyber risks
  - Counterfeit risks
  - Configuration management
- Add minimum requirements (prescription)
  - Declared Artifacts – what records will be generated/collected?
  - Integrate the DoD COTS Checklist

DoD Checklist

- Can be found in the Parts Management Knowledge Sharing Portal
  - https://www.dau.edu/cop/PMKSP - Select the Documents Tab
- Published 2022
  - Government and Industry contributors
- Questionnaire type format
- Guidance and Background Document
  - Describes each questions intent



Integrating the DoD COTS Checklist - Challenges

EIA 933	DOD COTS Assembly Checklist
• Requirements for Plan Creation • Static Document • Intended for Commercial Aviation applications	• Requirements for COTS Assembly Evaluation • Active spreadsheet • Created for DoD and Space

- The two documents have different structures
  - Clearly aligning questions in checklist with EIA933
- Including the checklist questions in EIA933 Appendix
  - Aligning each question to the technical requirements in Section 3
  - Allows the capability to be maintained and continue to evolve

Use Cases

Commercial Airliner Flight Computer Refresh	DoD UAV Mission Computer	LEO Payload Server	Legacy Radar Depot Sustainment
• EIA933-based CAMP informed supplemental testing • Authorities accepted in lieu of full DO-254 re-cert	• Supplemental altitude/temp testing for non-rated assembly • Limited envelope deployment while rugged variant sourced	• EIA933-based CAMP: Shielding analysis + parts radiation data = risk • Cold spare architecture = mitigation	• CAMP specified obsolescence forecasting and monitoring • EOL awareness 3 years ahead of LTB • Emergency redesign avoided

Closing

- Takeaways
  - Start early
  - Tailor each CAMP
  - Leverage all available data
  - Continuously evolve

Questions?