



AIA Standards Roadmap 2019 - 2023

January 29, 2019



Background

- TOC requested development of an AIA 5-year Standards Roadmap, May 2018.
- SGB tasked with coordinating plan with committee chairs
 - RFI sent out with due date 31 Aug 2018
 - Two SGB teleconferences held to support chairs with questions
- Presentation developed using committee input and review

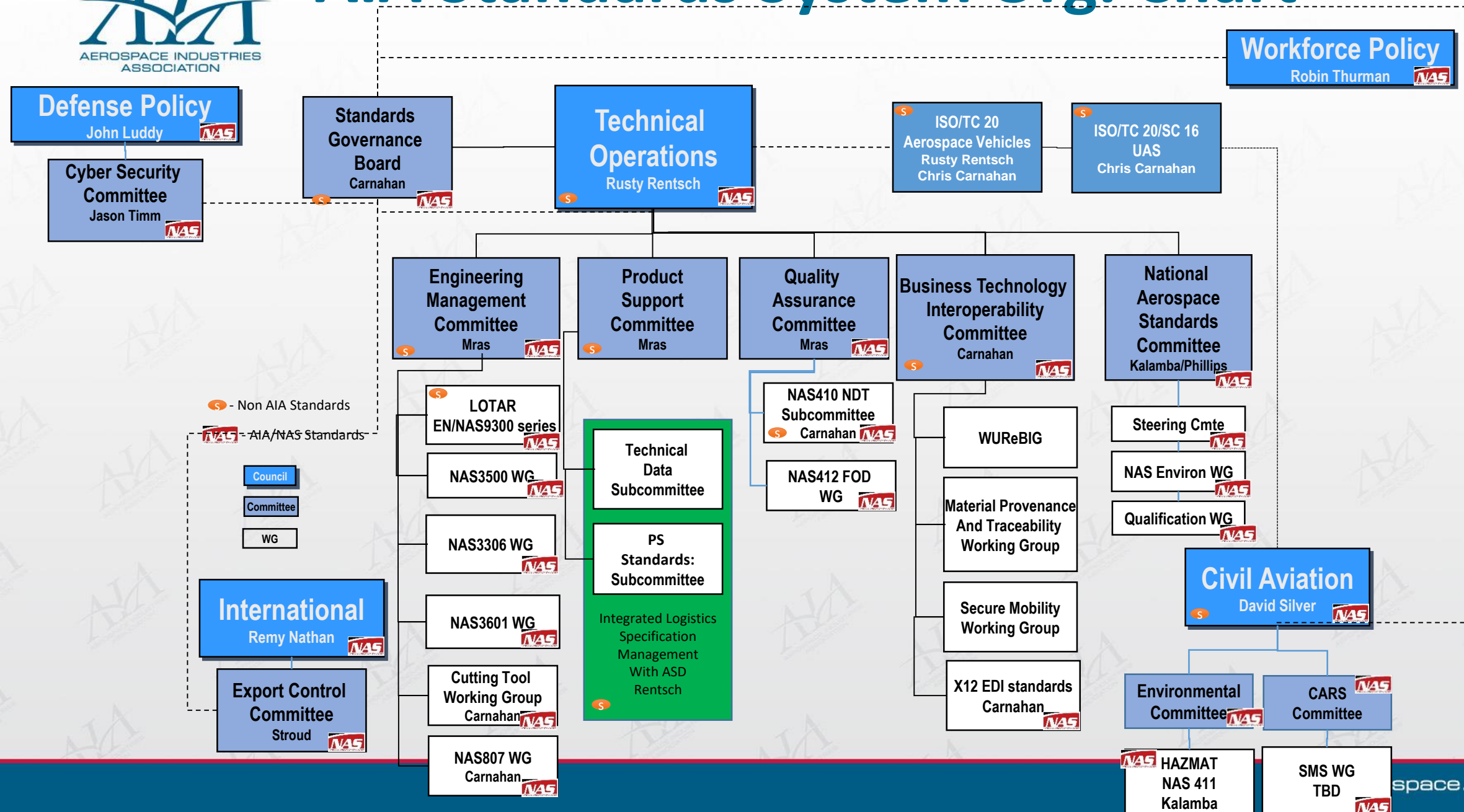


Overview

- AIA Standards System Org Chart
- Individual AIA committee overviews (10)
- New Technology Areas convergence slide



AIA Standards System Org. Chart





National Aerospace Standards Cmte

Existing stds: 1300+ NAS part & procurement standards

5 yr. plan:

- Maintain existing standards @ 260/year
- Stabilize mature standards where possible; consider other workload reduction efforts to maximize committee resources

Timeline:

2019	2020	2021	2022	2023
5-year review New Standard: <ul style="list-style-type: none">• Screw, Button Head	5-year review New standards: <ul style="list-style-type: none">• standards for the Six Lobe Surface Drive system	5-year review	5-year review	5-year review

Resources needed: On-going company support for 5-year review and attendance at NASC meetings

Engineering Management Committee

Existing stds: 70+ active stds assigned to EMC; plus several WGs

5 yr. plan:

- Digital Engineering Transformation plan (see MBE back up slide for description of #1-9 and spreadsheet)
- Stabilize many standards directly assigned to EMC
- LOTAR standards program (see Spreadsheet), dependencies: AP242, AP233, AP209.
- Maintain standards developed by EMC WGs (NAS3306, NAS9300 series (LOTAR), NAS cutting tool stds (8), NAS807, NAS3500, etc.)

Timeline:

2019	2020	2021	2022	2023
-EMC 5yr review (10) -MBE roadshow briefing -NAS3306 review -LOTAR: Basic & Common P001 - 030, Composites P300 & P310, Electrical WH P400 & P410 -ACT: NAS898, NAS907, NAS937, NAS988, new Carbide End Mill std. -NAS3601 cancellation	-EMC 5yr review (11) -MBE Std 1&2 published -LOTAR: Mfg Features P132, Eng. Sim & Analysis P600, P620, MBSE P500 -ACT: NAS937, NAS965, NAS986, NAS897	-EMC 5yr review (21) -NAS807 (seaplane floats) -MBE std 4&5 Published -LOTAR: Additive Mfg P350 & P360, Elec. P420 & P430, MBSE P510 & P515 -NAS3500 review	-EMC 5yr review (23) -MBE stds 3&6 -LOTAR: MBSE P520, Mech PMI P115e2, P126, PDM P230 & P240, EAS P630 -ACT: NAS890	-EMC 5yr review -MBE stds 7,8,9 -LOTAR: MBSE P530, EAS P640, Electrical WH P440 & P450

Resources needed: None at this time.



Quality Assurance Committee

Existing stds: NAS410 (NDT personnel certification) & NAS412 (FOD prevention)

5 yr. plan:

- *New potential standard: DCMA INST 8210.1D contracting standard*
- *Monitoring areas:*
 - *Additive manufacturing*
 - *Cyber resilience as it applies to Digital Design and Digital Manufacturing*
 - *Component flight worthiness certification as it applies to advanced manufacturing methods (ex.: Additive Manufacturing, cold spray MRO rework)*

Timeline:

2019	2020	2021	2022	2023
-NAS410 revision				-NAS412 revision

Resources needed: None at this time.



Business Technology Interoperability Committee

Existing standards: X12 standards (4 published/12 drafts)

5 yr. plan:

- Continued development of X12 stds. (total of 16)
- Support for interoperability standards:
 - ISO 10303 (STEP) – as required for LOTAR (EMC), S-series specs (PSC) and MBSE information requirements (EMC)
 - Blockchain information requirements (in support of AIA project)
- Support evolution of DoD Procurement Integrated Enterprise Environment (PIEE – used to be WAWF)
- Common XML-based transaction set with ASD
- Recommendation on standards for visualization
- Information requirements for smart manufacturing
- Explore new opportunities – distributed software, digital twin, digital certification, digital standard parts library

Timeline:

2019	2020	2021	2022	2023
-X12 standards (6) -Two PIEE releases -STEP 242e2,239e3 -Visualization Rec. - Smart mfg. reqts.	-X12 standards (6) -Two PIEE releases -XML transaction set	-Two PIEE releases -STEP MBSE AP233	-Two PIEE releases	-Two PIEE releases

Resources needed: More experts for X.12 and XML, data modellers for STEP, teams for visualization, support for AIA website.
New resources for new opportunities. Collaboration to establish new model-based regulatory environment.

Product Support Committee

Existing stds: No AIA standards; supporting S-series stds (logistics)

5 yr. plan:

- S-series specifications have their own roadmap; AIA supports.
- See spreadsheet for more details on roadmap.
- Dependency: ISO 10303-239.

Timeline:

2019	2020	2021	2022	2023
-S1000D -S3000L -S5000F -S6000T -SX000i	-SX000i -SX001G -SX002D	-S2000M -S3000L -S4000P -S5000F -S6000T -SX000i -S series Input Specs		

Resources needed: None at this time.



Workforce Policy Council

Existing stds: NAS9932 series (apprenticeship program) (6 stds)

5 yr. plan:

- Revision of NAS9932 standards as needed.

Timeline:

2019	2020	2021	2022	2023

Resources needed: None at this time.



Export Controls Committee

Existing stds: TCS001, TCS002, TCS003.

5 yr. plan: A total of 17 Trade Compliance Standards (TCS) were planned.

Timeline:

2019	2020	2021	2022	2023
TCS004 TCS005				

Resources needed: None at this time.



Civil Aviation Environmental Cmte (NAS411 WG)

Existing stds: NAS411 & NAS411-1 (HazMat Management Plan & Target List)

5 yr. plan:

- Continued work with DoD stakeholders to maintain NAS411 and update NAS411-1 materials target list

Timeline:

2019	2020	2021	2022	2023
-NAS411 decision		-NAS411-1 decision		

Resources needed: None at this time.

Civil Aviation Reg. & Safety Cmte.

Existing stds: NAS9927 (SMS) 2016; SMS International standard

5 yr. plan:

- Decision on NAS9927 due in 2021 (reaffirm, revise, withdraw)
- Support SMS International standard as needed (published 2018)
- Developing Airworthiness Engineering standard

Timeline:

2019	2020	2021	2022	2023
-Bird Strike TR		-NAS9927 decision		

Resources needed: None at this time.



Cyber Security Committee

Existing stds: NAS9924, Cyber Security Baseline (2013)

5 yr. plan:

- NAS9924 decision was due 2018 (reaffirm, revise, withdraw)
- New cyber security standard developed, NAS9933.
- No other standards planned at this time.

Timeline:

2019	2020	2021	2022	2023
-NAS9924 decision			-NAS9933 review	

Resources needed: None at this time.

New Technology Areas (convergence)

- Disruptive technologies that enable digital transformation, including
 - Model-Based Enterprise – includes MBSE, Model-Based Engineering and Sustainment, and associated regulatory changes
 - Smart Manufacturing
 - Additive manufacturing covering design, manufacture, quality and support issues
 - Collaboration with the digitalised supply chain – technical and commercial issues
 - Digital twins for design, functionality, manufacture and support
 - Digital twin for simulating hardware for software testing
 - Digital Twin for manufacturing and maintenance facility
 - Distributed software development/integration/management/metrics
 - Automated scripting of solicitations and contracts
 - Convergence to international standards for digital representation of NAS components



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EMC – MBE standards descriptions

- MBE Std 1: Definition/Standards governing what exactly is a “Digital Artifact”
- MBE Std 2: Standards for different Model classes/types (map these classes and types to the DoD Acquisitions Lifecycle)
- MBE Std 4: Usability Standards
- MBE Std 5: Model V&V Standards
- MBE Std 3: Standards for connecting disparate model types across domains/disciplines
- MBE Std 6: IP and Data Rights, Interfaces for Data Exchange between stakeholders/ users/ developers
- MBE Std 7: Digital artifact structure and organizational standards.
- MBE Std 8: Model documentation standards
- MBE Std 9: Model archiving standards (LOTAR)



[Committee Name]

Existing stds:

5 yr. plan:

Timeline:

2019	2020	2021	2022	2023
Test Test				

Resources needed: