

SAE INTERNATIONAL

# SAE INTERNATIONAL STANDARDS- COUNTERFEIT AVOIDANCE, DETECTION, MITIGATION AND DISPOSITION

May 18, 2015

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[www.sae.org](http://www.sae.org)



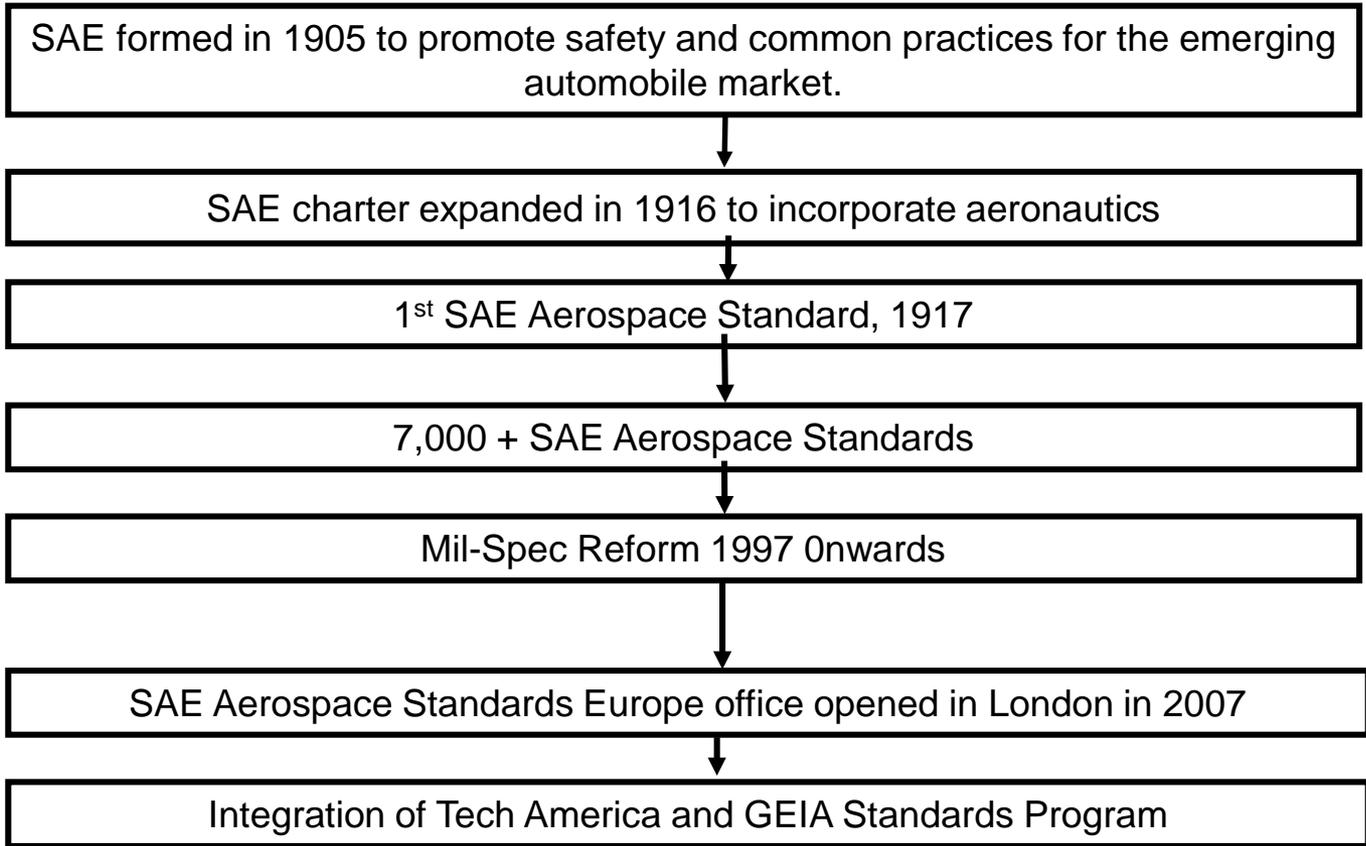
**SAE's main purpose is to collect, develop, and disseminate technical information related to mobility technology.**

# SAE STANDARDS History and Future .....

1905

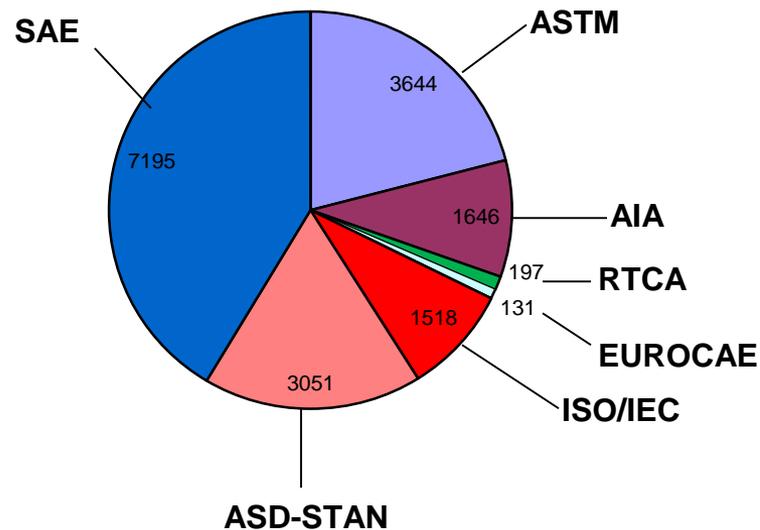


2013



# The Aerospace Standardization Landscape

SDO TOTAL AEROSPACE STANDARDS



**7000+** standards

**150+** committees, subcommittees,  
and task groups

**8000+** global participants

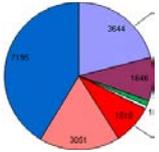
**Civil and Military** applications  
addressed



## Global Strategy and Oversight

- **Agusta Westland**
- **Airbus**
- **All Nippon Airways**
- **ATA/A4A**
- **AVIC 1**
- **BAE SYSTEMS**
- **The Boeing Company**
- **Bell Helicopter**
- **Bombardier Aerospace**
- **CAPE**
- **CIRA**
- **EADS**
- **European Aviation Safety Agency**
- **Embraer**
- **Federal Aviation Administration**
- **Fed Ex**
- **GE Company**
- **Honeywell Aerospace**
- **Lockheed Martin**
- **Lufthansa Technik**
- **NASA**
- **NAVAIR**
- **Northrop Grumman**
- **PATS Aircraft**
- **Pratt & Whitney**
- **Rolls-Royce**
- **United Aircraft Corporation**
- **U.S. Department of Defense**
- **Wichita State University**

# FOUNDATIONS OF THE SAE AEROSPACE STANDARDS PROGRAM



SAE has a proven track record, with more than 7000 standards published to date.



SAE's standards are recognized internationally on their own merits.



SAE has high-level support from a variety of key aerospace companies, organisations, and government agencies.



SAE has a proven consensus process for the development of aerospace standards.



SAE Technical Committees contain a wealth of industry experience and expertise for a variety of aerospace systems, components, and materials.

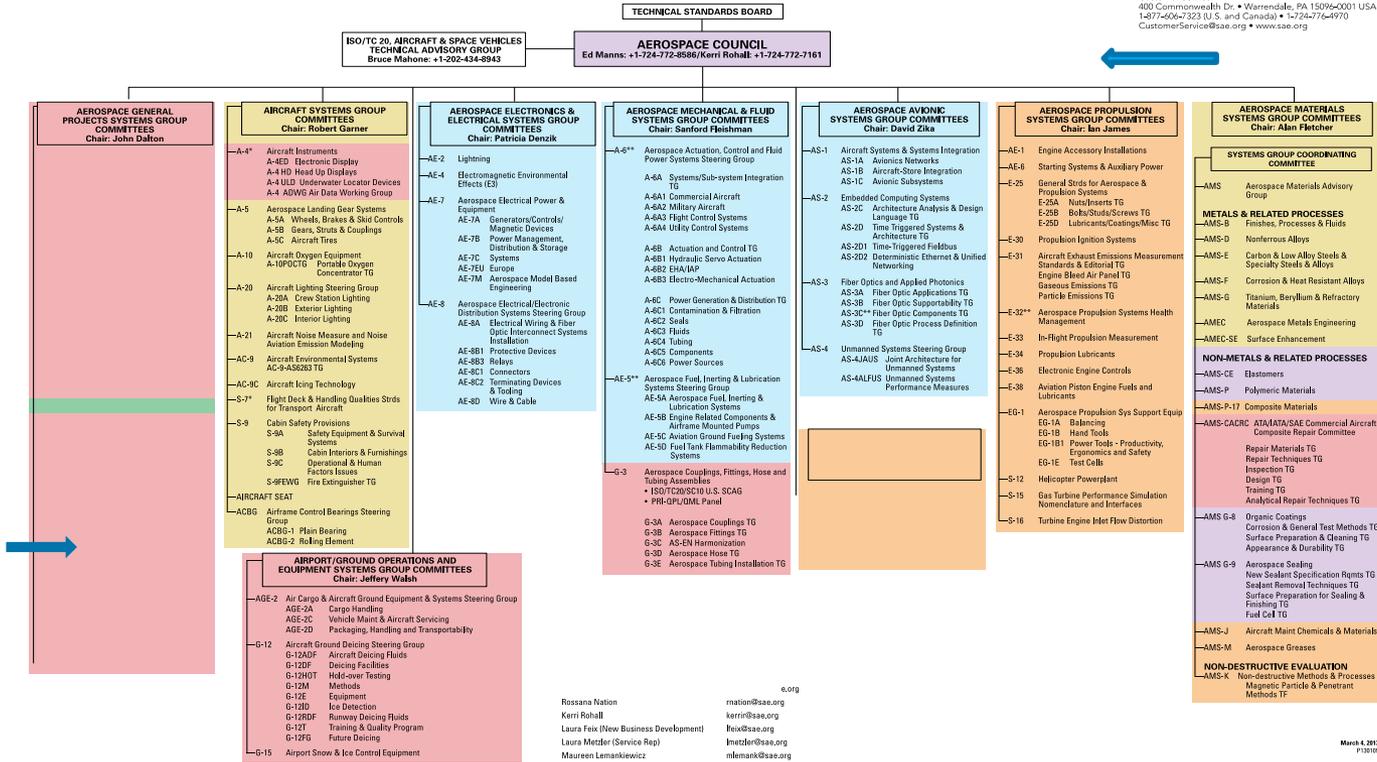


# Technical Committee Structure

## SAE Aerospace Council Organization Chart



Customer Service  
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1-877-606-9223 (U.S. and Canada) • 1-214-776-6970  
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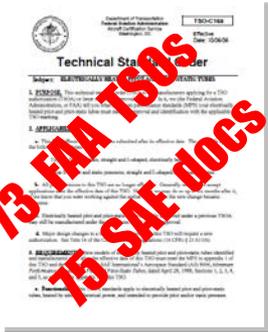


# SAE AEROSPACE STANDARDS PROGRAM TOPICS

- Metals finishes, processes, fluids
- Nonferrous alloys
- Carbon & Low alloy steels
- Specialty steels and alloys
- Corrosion & heat resistant alloys
- Titanium
- Beryllium
- Refractory materials
- Metals engineering
- Elastomers
- Polymers
- Composite materials (fabric & resins)
- Composite repair materials
- Composite inspection
- Composite repair techniques
- Organic Coatings
- Seals and Sealants
- Maintenance chemicals and materials
- Greases
- Lubricants
- Nondestructive testing and inspection
- Mechanical/Electrical/Hydraulic actuators
- Hydraulic fluids
- Filtration
- Tubing
- Hydraulic components
- Fuel, oil, and oxidizer systems
- Pumps
- Couplings, Fittings, Hose
- Tubing installation
- Engine starting systems
- Auxiliary Power
- Nuts/Inserts
- Bolts/studs/screws
- Fluid connectors
- Ignition systems
- Emissions measurement
- Engine condition monitoring
- In-flight propulsion measurement
- Engine controls
- Support equipment and tools
- Helicopter powerplants
- Inlet flow distortion
- Avionics networks
- Aircraft store integration
- Avionic subsystems
- Embedded computing systems
- Architecture description language
- Fiber optics
- Unmanned systems
- Lightning
- Electromagnetic compatibility
- Electrical Power and equipment
- Power management
- Aircraft systems installation
- Protective devices
- Relays
- Electrical connectors
- Terminating Devices
- Wire & cable
- Safety assessment
- Human Factors
- Flight Deck tools and instruments
- Displays
- Human modeling
- Quality system standards
- Fuel operations
- Radio Frequency Identification
- Air cargo handling
- Aircraft ground equipment and systems
- Aircraft servicing
- Aircraft Deicing
- Airport snow and ice removal
- Landing gear systems
- Oxygen equipment
- Aircraft interior/exterior lighting
- Aircraft noise measurement
- Environmental systems
- Aircraft icing
- Safety equipment
- Cabin interiors
- Survival equipment
- Seats
- Maintainability
- Probabilistic Methods
- Reliability
- Structural Health Monitoring and Management
- Air Traffic Management
- Integrated Vehicle Health Management



# Regulations and government documents reference SAE standards to certify aircraft before entering the market.



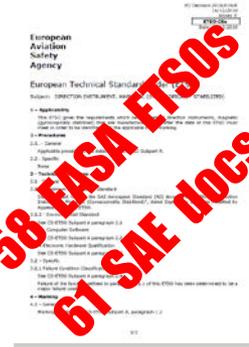
Example FAA TSO  
Mandatory compliance



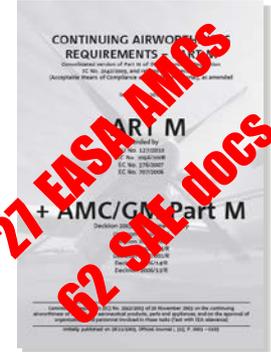
Example FAA AC  
Guidance material



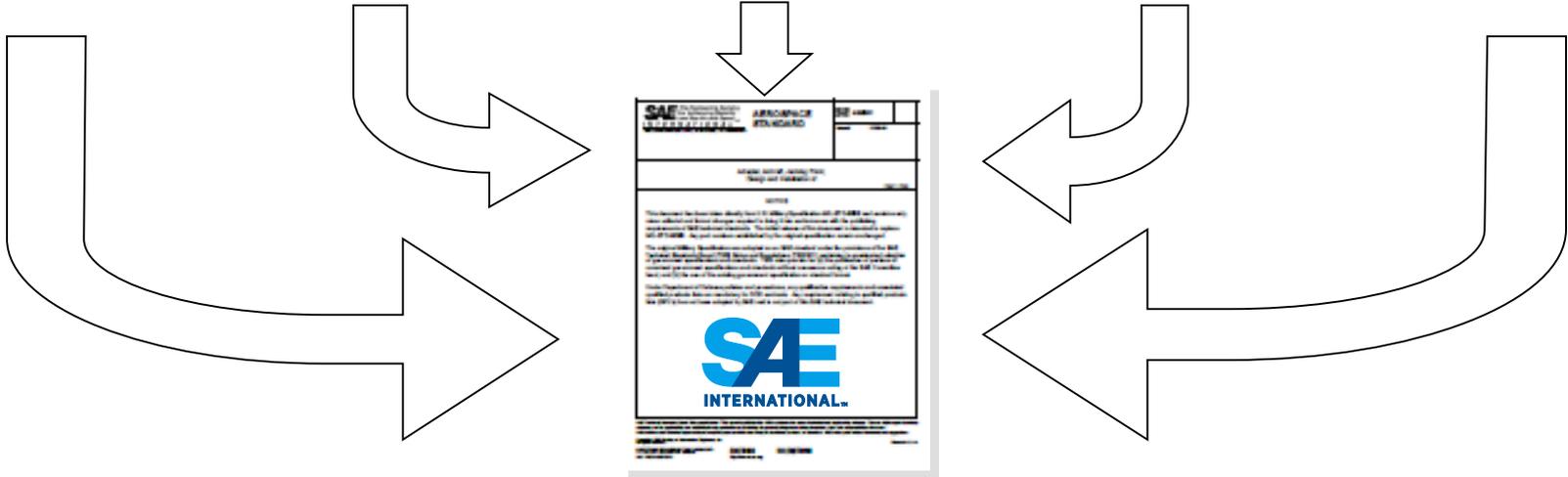
Example ICAO Annex  
Mandatory compliance

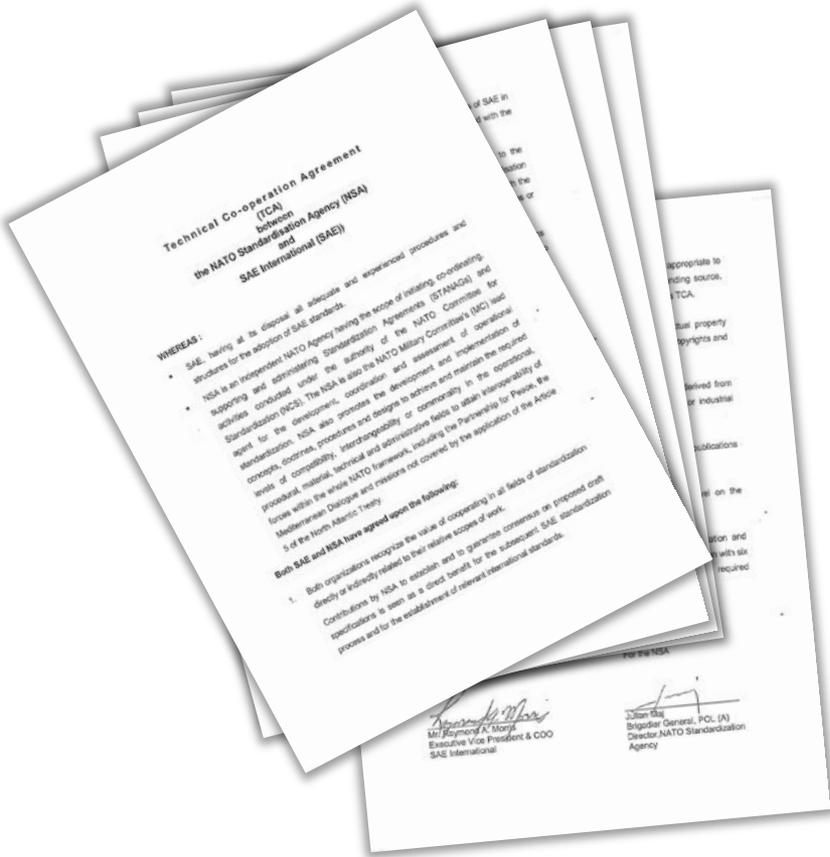


Example EASA ETSO  
Mandatory compliance



Example EASA AMC  
Guidance material



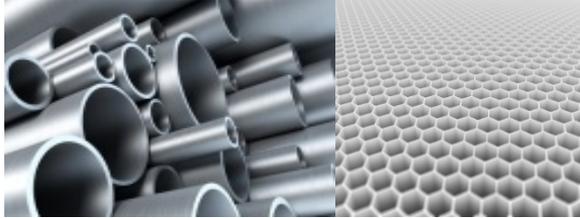


SAE is an officially recognized civilian SDO partner to NATO

Through a Technical Cooperation Agreement(TCA), NATO supports and adopts SAE industry standards



# About SAE: Purpose



**Materials**

**Environmental Standards**



**Counterfeit Parts  
Avoidance**

**Standard Parts**



**Deicing**

**Human Factors**

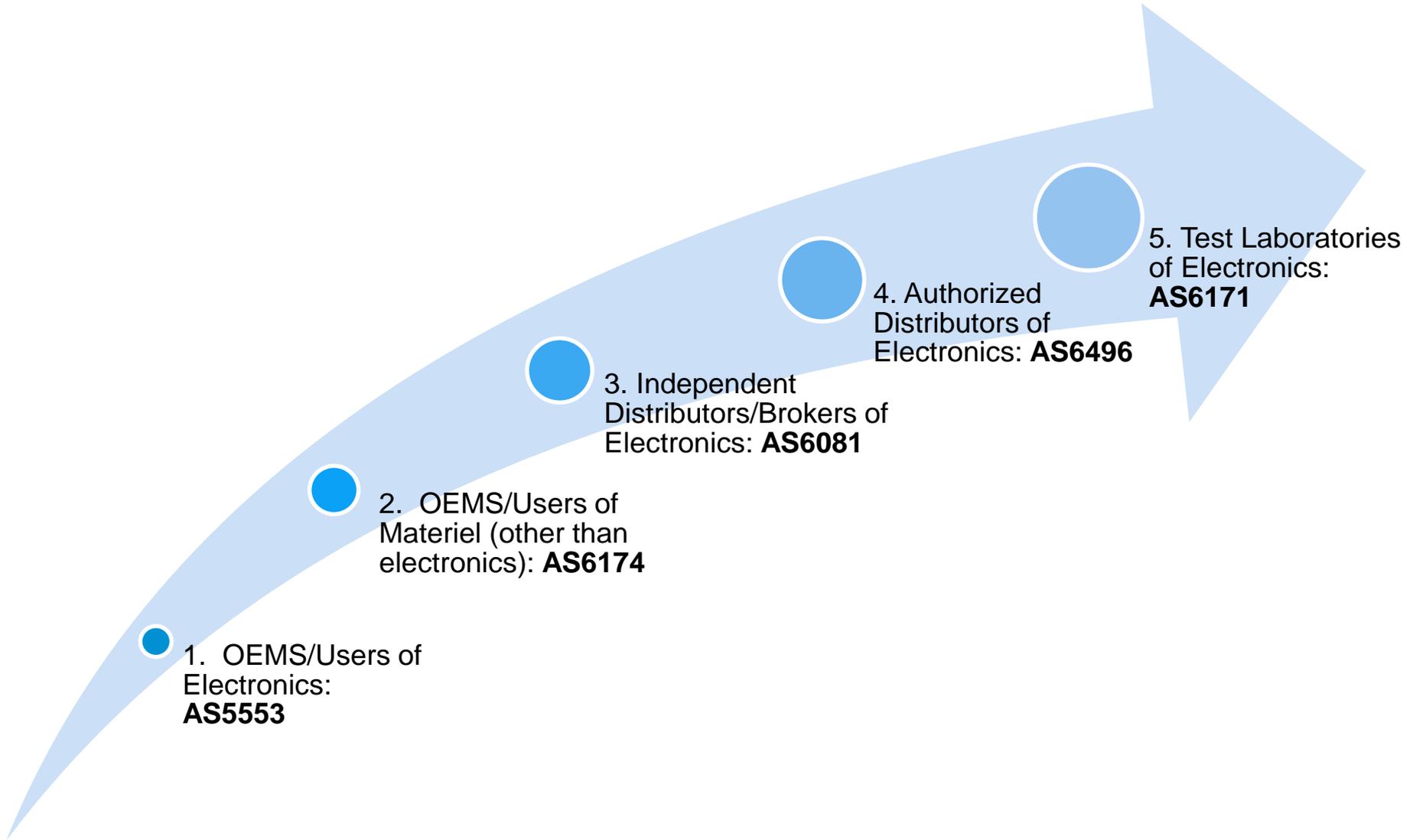


**Military Avionics**

**Integrated Vehicle  
Health Management  
(IVHM) & Reliability**



# G-19 & G-21 Counterfeit Prevention & Detection Standards



# SAE G-19 & G-21 Document Proposed Roadmap, 2014

**G-19 Counterfeit Electronic Components Committee Oversight**

**G-21 Counterfeit Materiel Committee Oversight**

**Auditor Competency (ASxxxx)**

**Proficiency Test Provider**

**Certification Body**

**Test Provider**

**Original Component Manufacturer**

**Distributor**

**Original Equipment Manufacturer/User/MRO**

**Test Provider**

Operator(s) Certified to PT Scheme for Identified AS6171 Test Methods

**Authorized/  
Franchised**

**Broker/  
Independent**

**AS6171**, Test Methods Standard; Counterfeit Electronic Parts, SAE G-19A

**ASxxxx**, Compliance Standard or Guide (Includes Audit Checklist) SAE G-19C

**ASxxxx**, OCM Counterfeit Mitigation Subcommittee. SAE G-19O

**ASxxxx**, Compliance Standard or Guide (includes Audit Checklist) SAE G-19C

**AS6496**, Authorized Distributor Counterfeit Mitigation Sub-com. SAE G-19AD

**ASxxxx**, Compliance Standard or Guide (Includes Audit Checklist) SAE G-19C

**AS6081**, Counterfeit Electronic Parts Avoidance, ID's. SAE G-19D

**AS6301**, Compliance Standard or Guide (includes Audit Checklist) SAE G-19C

**ARP6178**, Counterfeit Electronic Parts; Tool for Risk Assessment of Distributors. Worksheet and User Guide. SAE G-19DR

**AS5553A**, Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition. SAE G-19CI

**AS6462**, AS5553, Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition Verification Criteria Includes Audit Checklist. SAE G-19C

**AS6174**, Counterfeit Materiel; Assuring Acquisition of Authentic and Conforming Materiel SAE G-21

**AS6174**, Counterfeit Materiel; Assuring Acquisition of Authentic and Conforming Materiel Commodity Slash Sheets in Rev. A document. SAE G-21

**ASxxxx**, Compliance Standard or Guide (Includes Audit Checklist) SAE G-21C

**AIR6273**, Terms and Definitions – Fraudulent/Counterfeit Electronic Parts SAE G-19T

**ASxxxx**, Anti-Tamper and Transportation Security G-19AT

Published

In Development

Gap

# Summary of SAE G-19/G-21 Aerospace Standards

Standard	Title	Status
SAE AS5553A (G19-CI)	Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition	Issued January 2013 and available at <a href="http://www.sae.org">www.sae.org</a>
SAE AS6462 (G19-C)	Verification Criteria for Certification against AS5553	AS5553 verification criteria for first release published – 2011-11. Discussions underway for certification programs/schemes. Rev. A verification criteria under development
SAE AS6171 (G19-A)	Test Methods Standard; Counterfeit Electronic Parts	In draft; Individual test methods balloted. Main document balloting expected in 4Q-2013
SAE AIR6273 (G19-T)	Terms and Definitions:	In draft. Expected balloting in Q4-2014.

# Summary of SAE G-19/G-21 Aerospace Standards

Standard	Title	Status
SAE AS6081 (G19-D)	Counterfeit Electronic Parts Avoidance – Independent Distributors	Published 2012-11. Rev. A in development.
SAE AS6301 (G19-C)	Fraudulent/Counterfeit Electronic Parts: Avoidance, Detection, Mitigation, and Disposition – Independent Distributors Verification Criteria	In draft.
SAE ARP6178 (G19-DR)	Counterfeit Electronic Parts; Tool for Risk Assessment of Distributors	Published 2011-12.
SAE AS6496 (G19-AD)	Authorized Distributor Counterfeit Mitigation	In draft. Expected publication Q3-2014.
SAE AS6174 (G-21)	Counterfeit Materiel; Assuring Acquisition of Authentic and Conforming Materiel	Published May 2012. Rev. A Release est. August 2014.

**SAE INTERNATIONAL**

## **QUESTIONS?**

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