IEC 62668-1

Edition 1.0 2024-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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AMENDMENT 1
AMENDEMENT 1

Process management for avionics – Counterfeit prevention – Part 1: Avoiding the use of counterfeit, fraudulent and recycled electronic components

Gestion des processus pour l'avionique – Prévention de la contrefaçon – Partie 1: Prévention de l'utilisation de composants électroniques contrefaits, frauduleux et recyclés

IEC 62668-1:2019-09/AMD1:2024-09(en-fr)

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 03.100.50, 31.020, 49.060

ISBN 978-2-8322-9642-4

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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PROCESS MANAGEMENT FOR AVIONICS – COUNTERFEIT PREVENTION –

Part 1: Avoiding the use of counterfeit, fraudulent and recycled electronic components

AMENDMENT 1

FOREWORD

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Amendment 1 to IEC 62668-1:2019 has been prepared by IEC technical committee 107: Process management for avionics.

The text of this Amendment is based on the following documents:

Draft	Report on voting
107/416/FDIS	107/421/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Amendment is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications/.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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3.2 Abbreviated terms

Add the following to the list:

IECQ IEC quality assessment systems for electronic components

4.2 Minimum avionics OEM requirements

Replace, in list item c), "….

such as SAE AS5553A or SAE AS5553B or other similar (see 4.12.13) " *with* "….

such as SAE AS5553D or others similar (see 4.12.13) "

4.4.4 How to establish traceability

Add, at the end of second paragraph, the following:

(see Figure 2).

Add, after Note 2, the following new figure:

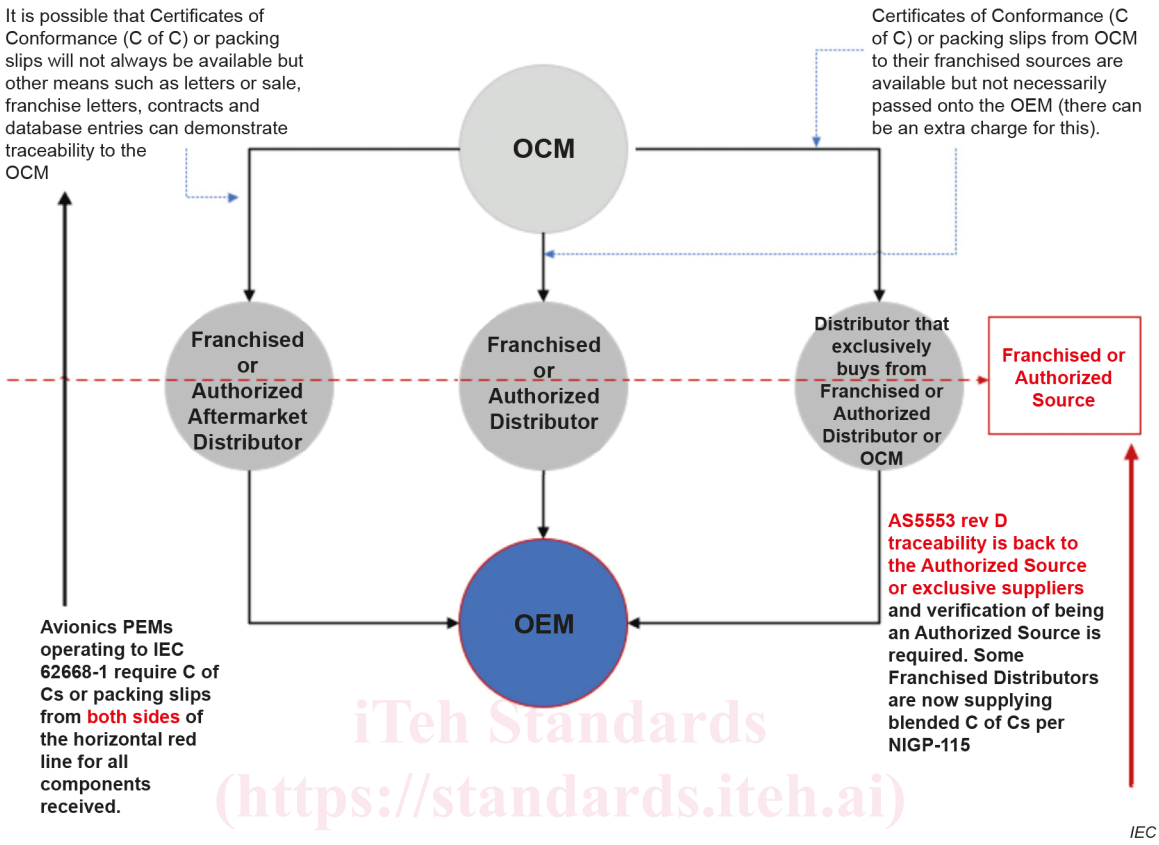

Figure 2 – Typical IEC 62668-1 and SAE AS5553 traceability requirements approach

4.5.4.5 USA DFARS and related FARS for USA supply chains

Delete, in Note 1, the first sentence.

4.12.13.1 General

Replace the text with the following:

The OEM shall have an anti-counterfeit, fraudulent and recycling plan in accordance with this document (see 4.2 and in particular 4.2 c)).

The OEMs which do not have an SAE AS5553 plan shall meet the requirements specified in 4.2 c).

The OEMs that have an SAE AS5553 anti-counterfeit plan for electronic components may consider it in their IEC 62668-1 anti-counterfeit plans; Table 3 identifies the IEC 62668-1 requirements which can be satisfied or not by SAE AS5553D requirements.

SAE AS5553, currently at revision D, is a very comprehensive document targeted at the general and high reliability industry (see Clause A.16 for further information).

SAE AS5553D has traceability requirements which can be different from IEC 62668-1 requirements (see Figure 2), leading Table 3 to not be satisfactory without additional steps. In addition to the management of electronic components coming into a business, IEC 62668-1 also includes the management of an OEM's IP of all the products sold out of the business, including the management of spares (either sold as separate individual components or assemblies) and repairs.

Table 2 – IEC 62668-1 requirements satisfied or not if OEM has an approved SAE AS5553A plan

Delete the existing Table 2

Table 3 – IEC 62668-1 requirements satisfied or not if OEM has an approved SAE AS5553B plan

Replace the existing Table 3 with the following new table:

Table 3 – IEC 62668-1 requirements satisfied or not if OEM has an approved SAE AS5553D plan

IEC 62668-1 requirement	Satisfied by SAE AS5553D requirement See Note 1	Comments	Notes for avionics OEMs when writing an SAE AS5553D plan as a basis for an IEC 62668-1 plan
4.2 a)	No.		
4.2 b)	No.	SAE AS5553D has no minimum specific component selection rules reviewing the component IP, only rules for maximizing the availability of parts with an obsolescence management plan and rules for sourcing or buying components.	Refer to an IEC 62239-1 ECMP plan addressing obsolescence management and component selection and qualification rules for avionics OEMs.
4.2 c)	An SAE AS5553D plan only satisfies how individual components are purchased and brought into an OEM or MRO business with traceability back to the "authorized source or exclusive supplier" as well as requiring verification of that authorization by the OCM. The IEC 62668-1 process or plan also has to address all the 4.2 requirements including how plan owners manage their own IP, spares, repairs and sale of individual spares into the market place with traceability back to the OCM.	IEC 62668-1 requires that the organization has anti-counterfeit procedures for all requirements. These procedures can include an anti-counterfeit plan.	Issue a cross reference matrix based on Table 3 to show how the SAE AS5553D plan satisfies the IEC 62668-1 requirements. Manage traceability back to the OCM and not just the AS5553D "authorised source or exclusive supplier"
4.2 d)	No – not unless AS/EN/JISQ 9100 is invoked.	SAE AS5553D is written for both general industry and high reliability industries where the use of AS/EN/JISQ 9100 is optional.	Base your SAE AS5553D plan on your AS/EN/JISQ 9100 procedures.
4.2 e)	Partially.		Base your SAE AS5553D plan on traceability through the supply chain back to the OCM and not just the "authorized source or exclusive supplier".
4.2 e) 1)	Partially.		Base your SAE AS5553D plan on traceability through the supply chain.
4.2e) 2)	Optional requirement depending on customer contract. No.	SAE AS5553D does not acknowledge this optional contract requirement using USA trusted sources.	Allow your SAE AS5553D plan to be customised using USA trusted suppliers where required by contract if you have USA customers.

IEC 62668-1 requirement	Satisfied by SAE AS5553D requirement See Note 1	Comments	Notes for avionics OEMs when writing an SAE AS5553D plan as a basis for an IEC 62668-1 plan
4.2 e) 3)	Partially.		Base your SAE AS5553D plan on using franchised aftermarket sources when the part is obsolete with traceability through the supply chain to the OCM and not just the authorized source.
4.2 e) 4)	Partially.	IEC 62668-1 requires all franchised distributors to comply with SAE AS6496 (AS 5553D only refers to AS6496 in a note for guidance). IEC 62668-1 refers to IEC 62668-2 for non-franchised distributor purchases whereas AS5553D refers to ARP 6328.	Use franchised distributors that comply with AS6496. Use IEC 62668-2 for non-franchised distributors purchases Base your SAE AS5553D plan on traceability through the supply chain to the OCM and not just the authorized source or exclusive supplier.
4.2 f)	Yes.		
4.2 g) 1)	Partially.	SAE AS5553D does not ask for the search to be exhaustive and that alternate solutions should be considered before going to an untraceable part sourced from a non-franchised source.	Base your anti-counterfeit plan on using IEC 62239-1 for assessing the risks and considering alternate solutions based on a traceable part before derogating and procuring an untraceable part outside the OCMs and franchised distributors network.
4.2 g) 2)	Partially.	IEC 62668-1 refers to IEC 62668-2 for a risk assessment process. SAE AS5553D minimum requirements do not refer to IEC 62668-2 but refer to similar testing and do not mandate the use of AS/EN/JISQ 9100 non-conformance procedures.	Base your anti-counterfeit plan on using IEC 62668-2 for managing non-franchised distributors to AS/EN/JISQ9120.
4.2 h)	Yes.	SAE AS5553D also applies to MRO organizations.	
4.2 i)	Yes.		
4.2 j)	Yes.		
4.2 k)	Partially.	An AS/EN/JISQ9100 Quality Management System can provide this assurance better than ISO 9001.	Base your anti-counterfeit plan on AS/EN/JISQ 9100.
4.2 l)	Yes.		
4.2.m)	Yes.	SAE AS5553D is written for both general industry and high reliability industries where the use of AS/EN/JISQ 9110 is optional.	Base your anti-counterfeit plan on AS/EN/JISQ9110 with traceability back to the OCM.

NOTE 1 SAE AS5553D defines "authorized sourced" as:
"AUTHORIZED SOURCE: Original component manufacturers and OCM-authorized sources of supply for an EEE part (i.e., franchised distributors, authorized distributors), and authorized aftermarket manufacturers"

NOTE 2 The SAE AS5553D defines "exclusive supplier" as:
"EXCLUSIVE SUPPLIER: Supplier who provides EEE parts it obtains directly from Authorized Sources but the Exclusive Supplier may not itself be authorized for those parts. "

A.16 SAE G-19

Replace, in the second paragraph, the first bullet point (about SAE AS5553) with the following:

- **SAE AS5553D**[1], *Counterfeit Electrical, Electronic and Electromechanical (EEE) Parts; Avoidance, Detection, Mitigation and Disposition*

  The scope is as follows:

  This standard is for use by organisations that procure and integrate EEE parts. These organisations may provide EEE parts that are not integrated into assemblies (e.g. pares and/or repair EEE parts. Examples of such organisations include but are not limited to: original equipment manufacturers; contract assembly manufacturers; maintenance, repair, and overhaul organisations; value-added resellers; and suppliers that provide EEE parts or assemblies as part of a service. The requirements of this standard are generic. These requirements are intended to be applied) or flowed down as applicable) through the supply chain to all organisations that procure EEE arts and/or systems, subsystems, or assemblies, regardless of type, size and product provided. The mitigation of counterfeit EEE parts in this standard is risk-based and these mitigation steps will vary depending on the criticality of the application, desired performance and reliability of the equipment/hardware.

  The requirements of this document are intended to be used in conjunction with a higher-level quality standard (e.g. AS/EN/JISQ9100, ISO-9001, ANSI/ASQC E4, ASME NQA-1, AS9120, AS9003 or equivalent) and other quality management systems documents. They are not intended to stand alone, supersede or cancel requirements found in other quality management system documents, requirements imposed by contracting authorities or applicable laws and regulations unless an authorised exemption/variance has been obtained. This document is not intended to make legal determination of fraud and appropriate legal counsel should be consulted for further action.

Replace, in the second paragraph, the seventh bullet point (about SAE AIR6273) with the following:

- **SAE AIR6273**[2] *Terms, Definitions and Acronyms–Counterfeit Materiel or Electrical, Electronic and Electromechanical Parts*

  The SAE Aerospace Information Report (AIR) provides standardized terms, definitions, and acronyms that may be used in the G-19 and G-21 documents, unless otherwise specified in those documents. The SAE International series of documents that address the mitigation of suspect and counterfeit parts will reference this document in their respective Applicable Documents sections.

  This AIR is for use by organizations that procure and/or use materiel or EEE parts. The terms and definitions of this AIR are intended to be used in conjunction with other G-19 and G-21 standards.

Delete, in the second paragraph, the last bullet point (reference to SAE AS6462A).

Annex D, Flowchart of IEC 62668-1 requirements

Figure D.1 – Flowchart of IEC 62668-1 requirements and their relationship to external standards

Replace, in the figure, "SAE AS5553A" *with* "AS5553".

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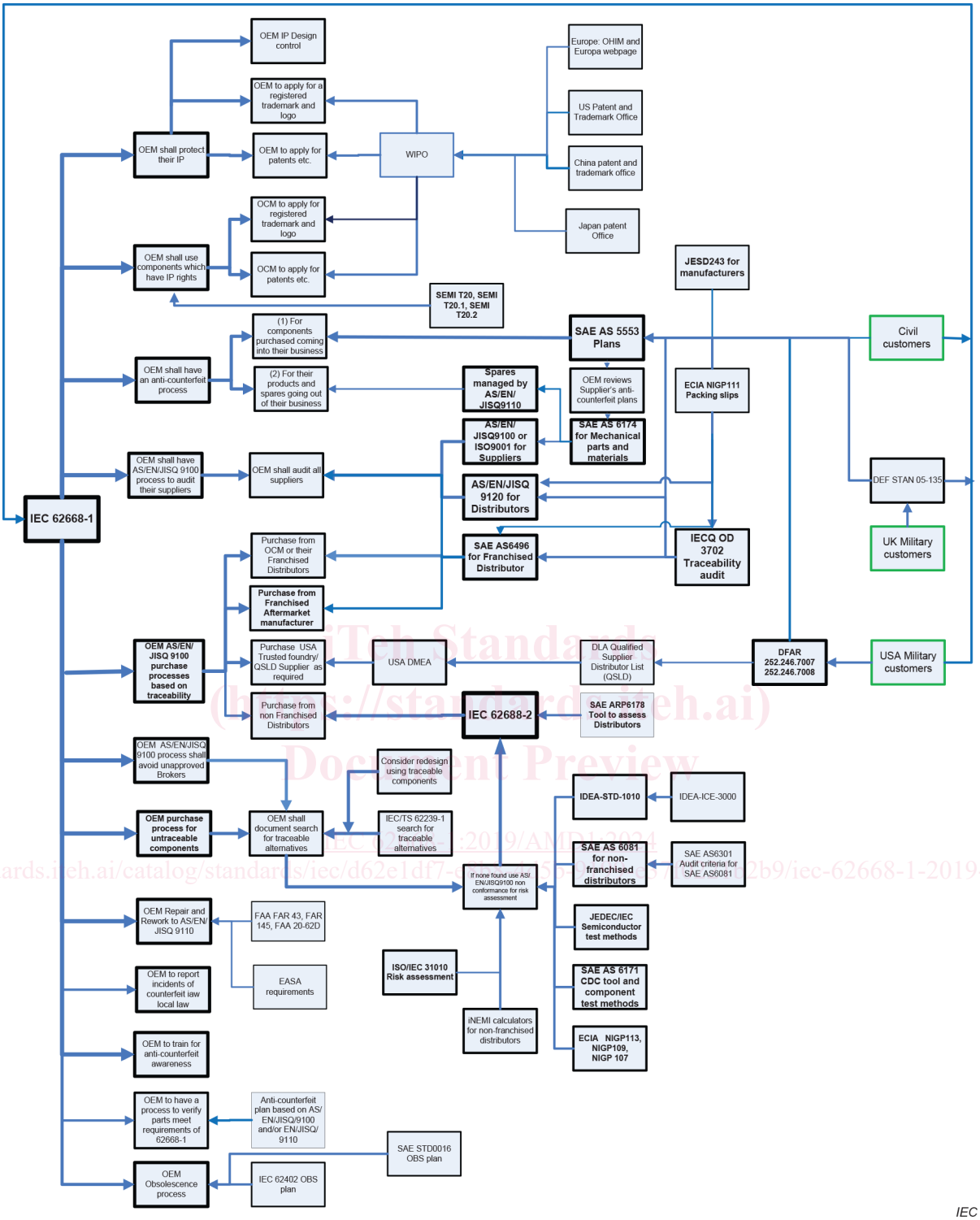
[2] Reprinted with permission from the draft version of SAE document AIR6273 ©2019 SAE International.


OEM IP Design control
OEM to apply for a registered trademark and logo
OEM shall protect their IP
OEM to apply for patents etc.
WIPO
Europe: OHIM and Europa webpage
US Patent and Trademark Office
China patent and trademark office
Japan patent Office
OCM to apply for registered trademark and logo
OEM shall use components which have IP rights
OCM to apply for patents etc.
SEMI T20, SEMI T20.1, SEMI T20.2
JESD243 for manufacturers
(1) For components purchased coming into their business
SAE AS 5553 Plans
Civil customers
OEM shall have an anti-counterfeit process
(2) For their products and spares going out of their business
Spares managed by AS/EN/ JISQ9110
OEM reviews Supplier's anti-counterfeit plans
ECIA NIGP111 Packing slips
AS/EN/ JISQ9100 or ISO9001 for Suppliers
SAE AS 6174 for Mechanical parts and materials
OEM shall have AS/EN/JISQ 9100 process to audit their suppliers
OEM shall audit all suppliers
AS/EN/JISQ 9120 for Distributors
DEF STAN 05-135
IEC 62668-1
Purchase from OCM or their Franchised Distributors
SAE AS6496 for Franchised Distributor
IECQ OD 3702 Traceability audit
UK Military customers
Purchase from Franchised Aftermarket manufacturer
OEM AS/EN/ JISQ 9100 purchase processes based on traceability
Purchase USA Trusted foundry/ QSLD Supplier as required
USA DMEA
DLA Qualified Supplier Distributor List (QSLD)
DFAR 252.246.7007 252.246.7008
USA Military customers
Purchase from non Franchised Distributors
IEC 62688-2
SAE ARP6178 Tool to assess Distributors
OEM AS/EN/JISQ 9100 process shall avoid unapproved Brokers
Consider redesign using traceable components
IDEA-STD-1010
IDEA-ICE-3000
OEM purchase process for untraceable components
OEM shall document search for traceable alternatives
IEC/TS 62239-1 search for traceable alternatives
SAE AS 6081 for non-franchised distributors
SAE AS6301 Audit criteria for SAE AS6081
If none found use AS/EN/JISQ9100 non conformance for risk assessment
OEM Repair and Rework to AS/EN/ JISQ 9110
FAA FAR 43, FAR 145, FAA 20-62D
JEDEC/IEC Semiconductor test methods
OEM to report incidents of counterfeit iaw local law
EASA requirements
ISO/IEC 31010 Risk assessment
SAE AS 6171 CDC tool and component test methods
iNEMI calculators for non-franchised distributors
OEM to train for anti-counterfeit awareness
ECIA NIGP113, NIGP109, NIGP 107
OEM to have a process to verify parts meet requirements of 62668-1
Anti-counterfeit plan based on AS/ EN/JISQ/9100 and/or EN/JISQ/ 9110
SAE STD0016 OBS plan
OEM Obsolescence process
IEC 62402 OBS plan

IEC