



Counterfeit Parts Standards and Certifications

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Topics



Counterfeit Parts Standards

- What's it all About?
- Existing Standards
- Definitions
- Applications

Certification Programs

- AS5553
- AS6081



What's it all about?

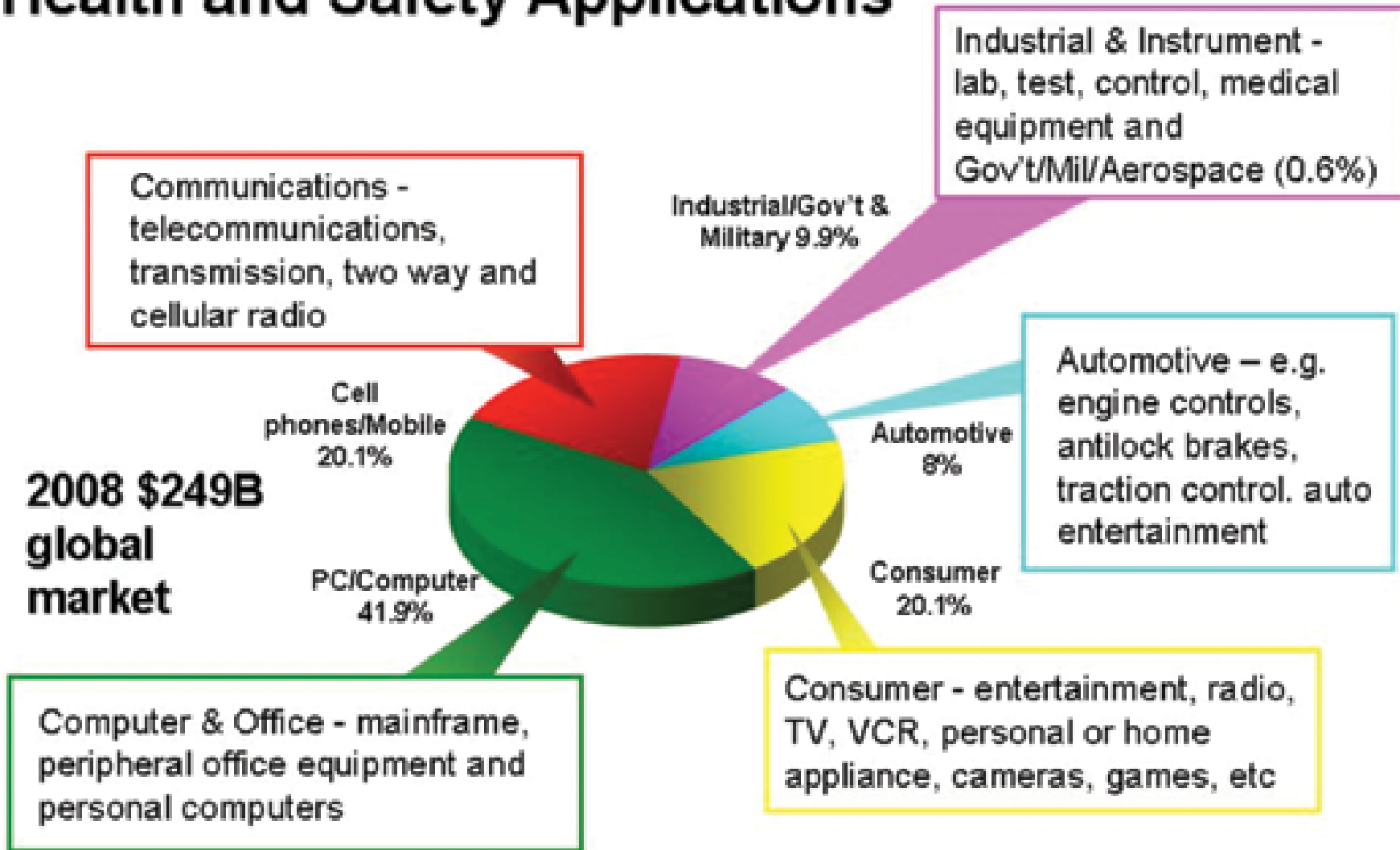


The U.S. Department of Commerce's Bureau of Industry and Security (BIS) released a study in 2010 that quantified the extent of counterfeit electronic parts into U.S. defense supply chains

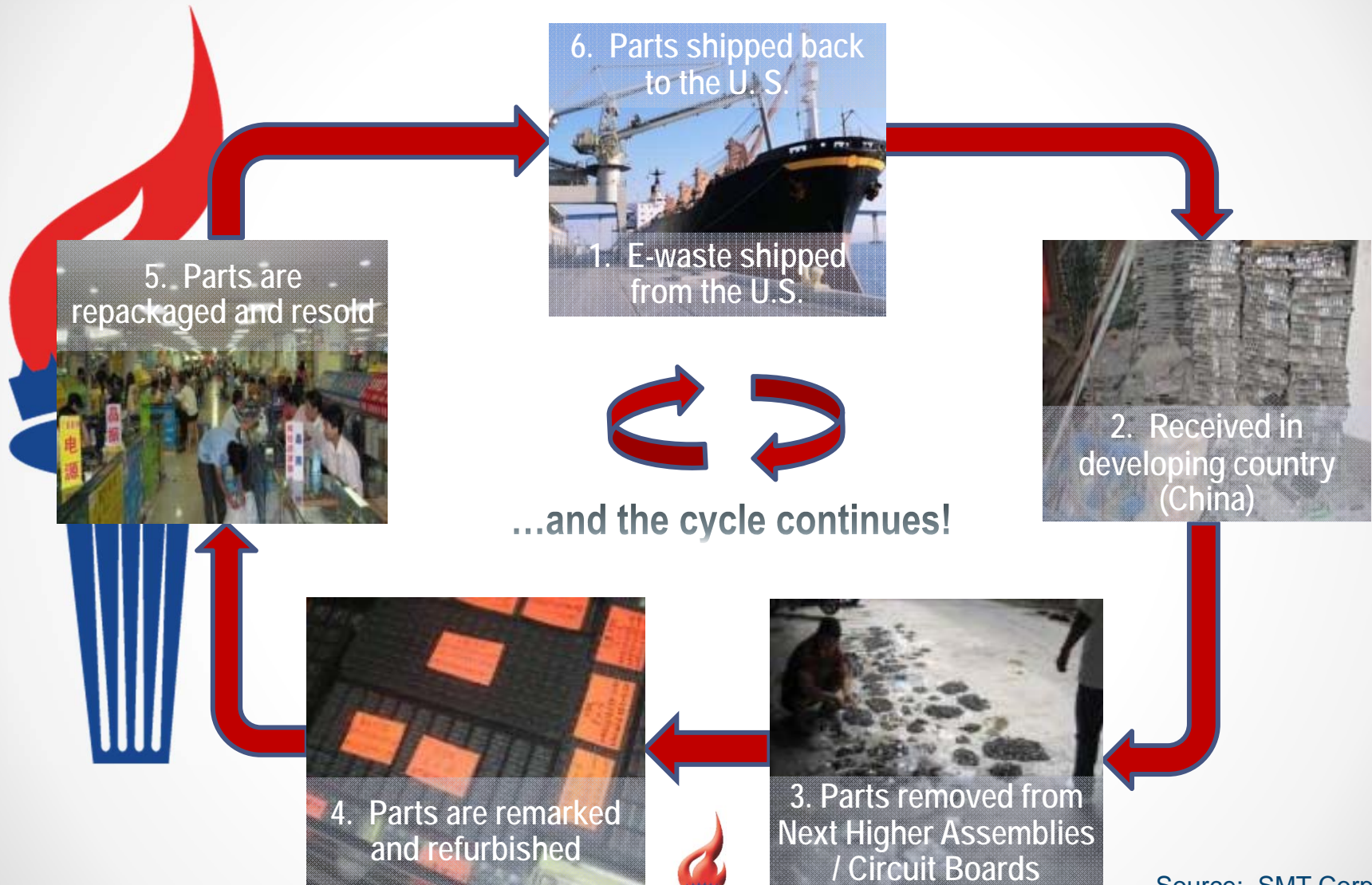
The BIS study documented a growth in incidents of counterfeit parts across the electronics industry from 3,300 incidents in 2005 to more than 8,000 incidents in 2008



Semiconductors are Everywhere – Including Health and Safety Applications



ELECTRONIC WASTE IS A CONTRIBUTING FACTOR



Source: SMT Corporation

CLIO-67-115

INTERNET IS A CONTRIBUTING FACTOR

The growth of internet sales has yielded unprecedented opportunities for profiteers to find a market for counterfeit products

A check, in 2012, of a popular Internet parts search engine found a glut of counterfeits of an integrated circuit (randomly selected from an obsolete parts listing) that had been discontinued in 1998. In fact, more sources were listed on this site for parts date coded 2001 or later than during the part's production range of 1998 or earlier

What's it all about?



Aircraft Introduction

Retirement

DC-3

1935

Not determined

B-52

1955

2040 (maybe)

C-130

1957

Not determined

B737

1968

Not determined

L-1011

1972

Not determined

F-16

1978

Not determined

Obsolescence creates an opportunity / market for Counterfeit



What's it all about?

In 2012 the U.S. Government enacted laws requiring regulations for contractor responsibilities for detection and avoidance of the use of counterfeit electronic parts

DFARS 252.246-7007 "Counterfeit Electronic Part Detection and Avoidance System" was issued in 2014

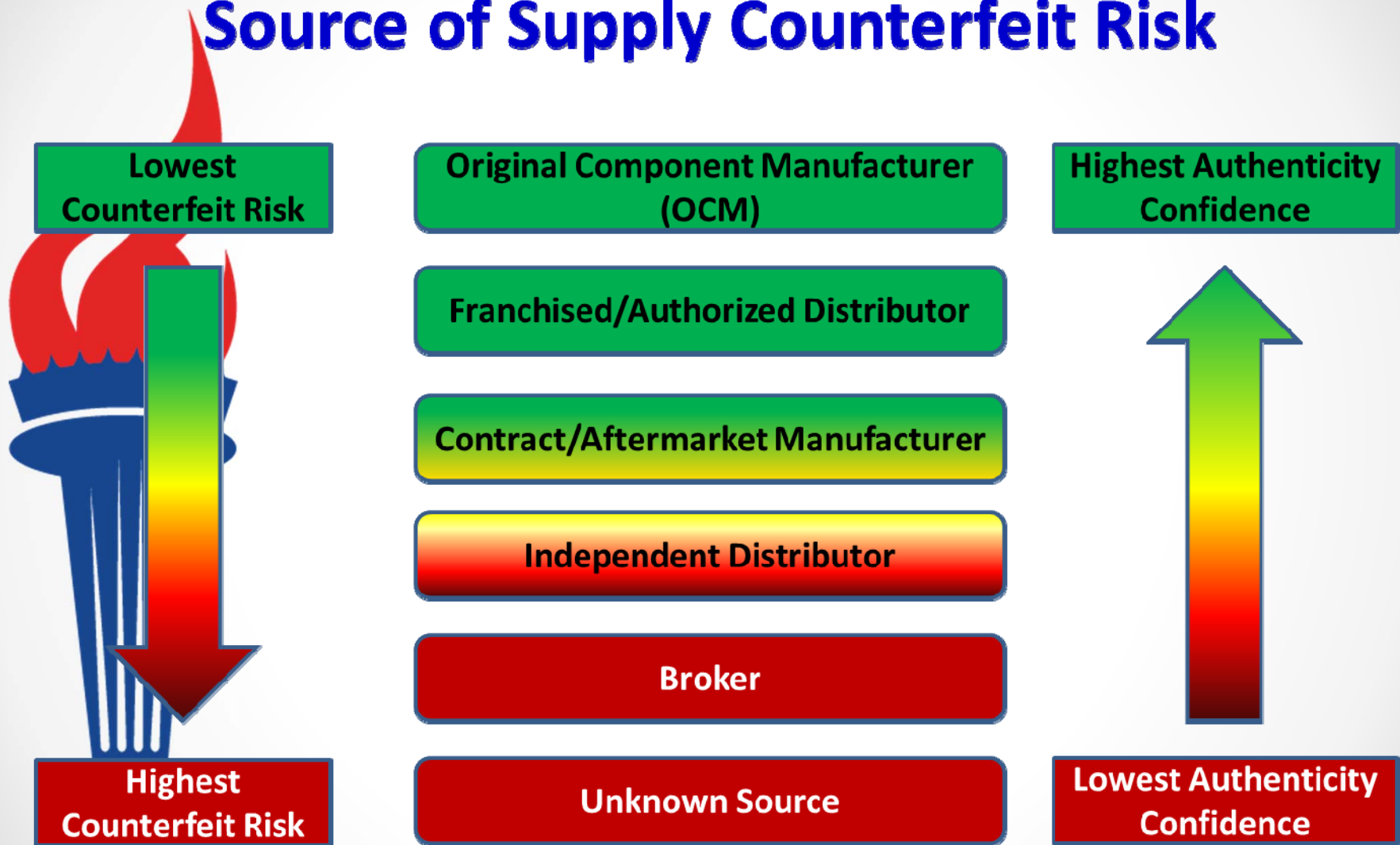
The US government is also proposing to expand the above to include a new clause, Sources of Electronic Parts, whenever procuring—

- Electronic parts;
- End items, components, parts, or assemblies containing electronic parts; or
- Services, if the contractor will supply electronic parts or components, parts, or assemblies containing electronic parts as part of the service.



PREVENTION: RISK MITIGATION PROCESS AND ACTIONS

Source of Supply Counterfeit Risk





Counterfeit Parts Standards

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New and Improved?



SAE Int'l CP Standards



**ARP6178 Counterfeit Electronic Parts;
Tool for Risk Assessment of
Distributors**

**AS6171 Test Methods
Standard; Counterfeit
Electronic Parts**

**AS6496 Authorized
Distributor Counterfeit
Mitigation**

**AS6081 Counterfeit Electronic
Parts Avoidance – Independent
Distributors**

**AS6174 Counterfeit
Materiel; Assuring
Acquisition of Authentic
and Conforming Materiel**

**AS6301 Fraudulent/Counterfeit Electronic
Parts: Avoidance, Detection, Mitigation, and
Disposition – Independent Distributors
Verification Criteria**

**AS5553 Counterfeit
Electronic Parts; Avoidance,
Detection, Mitigation, and
Disposition**

**AS6462 Verification Criteria for
Certification against AS5553**



Other CP Standards

IEC/TS 62668-1 *Process Management for Avionics – Counterfeit prevention – Avoiding the use of counterfeit, fraudulent and recycled electronic components*

IEC/TS 62668-2 *Process Management for Avionics - Counterfeit prevention - Managing electronic components from non-franchised sources*

U.S. DoD MIL-STD-3018 - Parts Management

U.S. DoD MIL-STD-11991A - General Standard for Parts, Materials, and Processes

UK MOD Def Stand 05-135 - Avoidance of Counterfeit Materiel

IDEA-STD-1010 Acceptability of Electronic Components Distributed in the Open Market



Revision Status of Standards



- SAE AS5553A to B – ballot soon
- SAE AS6171 not published – ballot soon
- SAE AS6174A to B – in revision
- SAE AS6081A to B – in revision
- SAE AS6301 – Published 2014
- SAE AS6496 – Published 2014

Revisions for some to incorporate Assessment sheets





Counterfeit Parts Definitions



There are A LOT of them too!



Counterfeit Part Definitions



U.S. Defense Federal Acquisition Regulation 202.101

Counterfeit electronic part means an unlawful or unauthorized reproduction, substitution, or alteration that has been knowingly mismarked, misidentified, or otherwise misrepresented to be an authentic, unmodified electronic part from the original manufacturer, or a source with the express written authority of the original manufacturer or current design activity, including an authorized aftermarket manufacturer. Unlawful or unauthorized substitution includes used electronic parts represented as new, or the false identification of grade, serial number, lot number, date code, or performance characteristics.



Counterfeit Part Definitions



SAE Int'l AS5553A and AS6081A

A fraudulent part that has been confirmed to be a copy, imitation, or substitute that has been represented, identified, or marked as genuine, and/or altered by a source without legal right with intent to mislead, deceive, or defraud.

SAE Int'l AS6174A

Fraudulent materiel that has been confirmed to be a copy, imitation or substitute that has been represented, identified, or marked as genuine, and/or altered by a source without legal right with intent to mislead, deceive or defraud.



Counterfeit Part Definitions

The UK Defence Standard definition

Materiel whose origin, age, composition, configuration, certification status or other characteristic (including whether or not the materiel has been used previously) has been falsely represented by:

- a) misleading marking of the materiel, labelling or packaging;
- b) misleading documentation; or
- c) any other means, including failing to disclose information;

except where it has been demonstrated that the misrepresentation was not the result of dishonesty by a supplier or sub-supplier within the supply chain.



Counterfeit Part Definitions



AS5553 Rev. B (proposed)

(1) an unauthorized a) copy, b) imitation, c) substitute, or d) modified materiel or EEE part, which is knowingly, recklessly, or negligently misrepresented as a specified genuine item from an authorized manufacturer; or

(2) a previously used materiel or EEE part which has been modified and is knowingly, recklessly, or negligently misrepresented as new without disclosure to the customer that it has been previously used.



Counterfeit Part Definitions



PROPOSED NEW DEFINITION AS9100

An unauthorized copy, imitation, substitute, or modified part, which is knowingly misrepresented as a specified genuine part of an original or authorized manufacturer.

Note: Examples of a counterfeit part (e.g., material, part, component) can include, but are not limited to; the false identification of marking or labeling, grade, serial number, date code, documentation or performance characteristics.

Similar to AS5553 B proposal





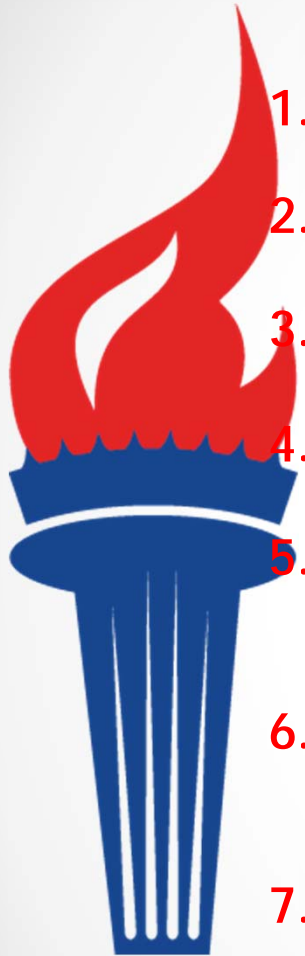
Counterfeit Parts Control Requirements

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There are A LOT of them too!



Requirements in DFAR 252.246.7007



1. The training of personnel.
2. The inspection and testing of electronic parts
3. Processes to abolish counterfeit parts proliferation.
4. Processes for maintaining electronic part traceability
5. Use of suppliers that are the original manufacturer, or [an authorized supplier]
6. Reporting and quarantining of counterfeit electronic parts and suspect counterfeit electronic parts
7. Methodologies to identify suspect counterfeit parts and to rapidly determine if a suspect counterfeit part is, in fact, counterfeit



Requirements in DFAR 252.246.7007



8. Design, operation, and maintenance of systems to detect and avoid counterfeit electronic parts and suspect counterfeit electronic parts
9. Flowdown of counterfeit detection and avoidance requirements
10. Process for keeping continually informed of current counterfeiting information and trends
11. Process for screening GIDEP reports and other credible sources of counterfeiting information to avoid the purchase or use of counterfeit electronic parts.
12. Control of obsolete electronic parts



AS 6174A - Assuring Acquisition of Authentic and Conforming Materiel

Scope

- This document standardizes requirements, practices, and methods related to: (a) materiel management, parts management, supply chain management, procurement, inspection, test/evaluation to assure the authenticity and conformance of materiel being acquired, and (b) response strategies when suspect or confirmed counterfeit materiel is discovered.

Purpose

- This standard was created to provide uniform requirements, practices and methods to improve the likelihood of only acquiring authentic and conforming materiel of any type in any industry sector.

Applicability

- Suppliers, processors, and end product organizations.

Supply Chain Sector

- Any industry sector.

Commodity(s) Covered

- All materials and parts except electronic, electrical & electromechanical (EEE).

AS6496- Authorized Distribution CP Mitigation

Scope

- Authorized Distributor when performing Authorized Distribution.

Purpose

- Practices to procure, authenticate, trace and minimize risk of CP in authorized supply chain

Supply Chain Applicability

- Authorized Distributor Activities
- AD Customers to understand what to expect from Authorized Distribution

Commodity Covered

- Electronic parts—electronic components, assemblies, supplies and equipment



8.1.4 Counterfeit Part Prevention

9100 / 9110 / 9120

The organization shall plan, implement and control a process, appropriate to the product, that prevents the use of counterfeit or suspect counterfeit product and their inclusion in product(s) delivered to the customer.

NOTE: Counterfeit product prevention processes should consider:

- training of appropriate persons in the awareness and prevention of counterfeit product;
- application of a parts obsolescence monitoring program;
- procurement requirements for assuring traceability of parts and components to their original authorized manufacturers;
- verification and test methodologies to detect counterfeit product;
- monitoring of counterfeit product reporting from external sources;
- quarantine and reporting of suspect or detected counterfeit product.

Deliberately modeled after the DFAR 7007 items.



91xx 8.4.2 Control of External Providers

Verification activities of externally provided processes, products, and services shall be performed according to the risks identified by the organization. These shall include inspection or periodic testing, as applicable, when there is high risk of nonconformities including counterfeit parts.

- Added requirement for inspection or testing when there is a risk of counterfeit parts being prevalent (9100/9120)



91xx 8.4.3 Information to External Providers



The need to: (9100)

- *prevent the use of counterfeit parts (see 8.1.4);*

The need to: (9120)

- *prevent the use of suspected unapproved, unapproved, and counterfeit parts (see 8.1.4 & 8.1.5);*

Nothing for 9110



91xx 8.7 Control of Nonconforming Outputs

NOTE: The term "nonconforming outputs" includes suspected unapproved, unapproved, counterfeit and nonconforming product or service generated internally, received from an external provider, or identified by a customer. (9120)

Counterfeit, or suspect counterfeit, parts shall be controlled to prevent reentry into the supply chain. (9100/9120)

Unsalvageable and counterfeit parts shall be conspicuously and permanently marked, or positively controlled, until physically rendered unusable to prevent restoration. (9110)



Counterfeit Quarantine Issue



- Depending on what the counterfeit item is and where in the supply chain the item is discovered and affect the quarantine issue.
- Words crafted to allow for needed flexibility to cover all products.
- 9100 and other standards always 'defer' to contractual requirements...such as DFAR requirements which would take precedence.





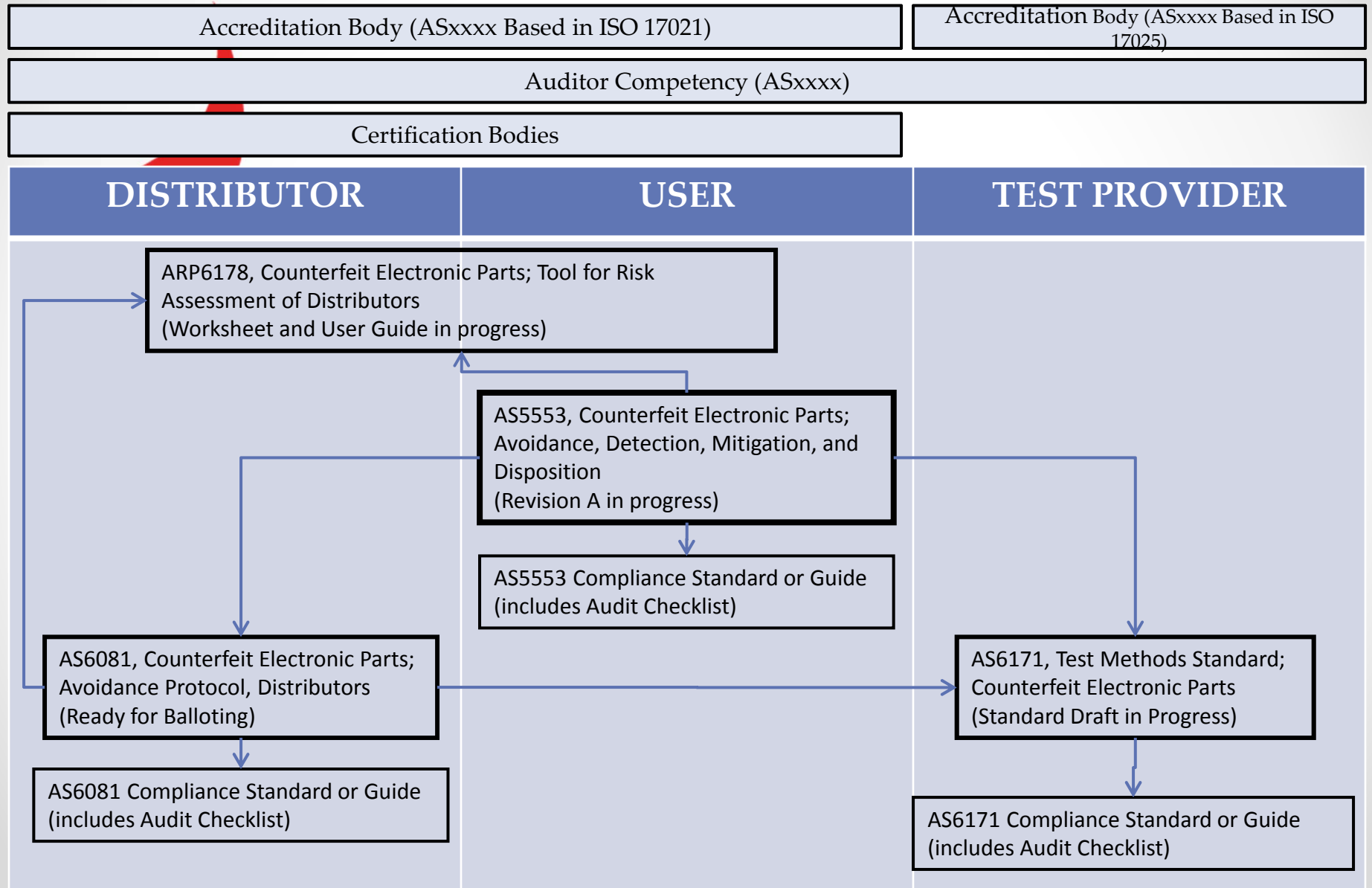
Counterfeit Parts Certification Programs

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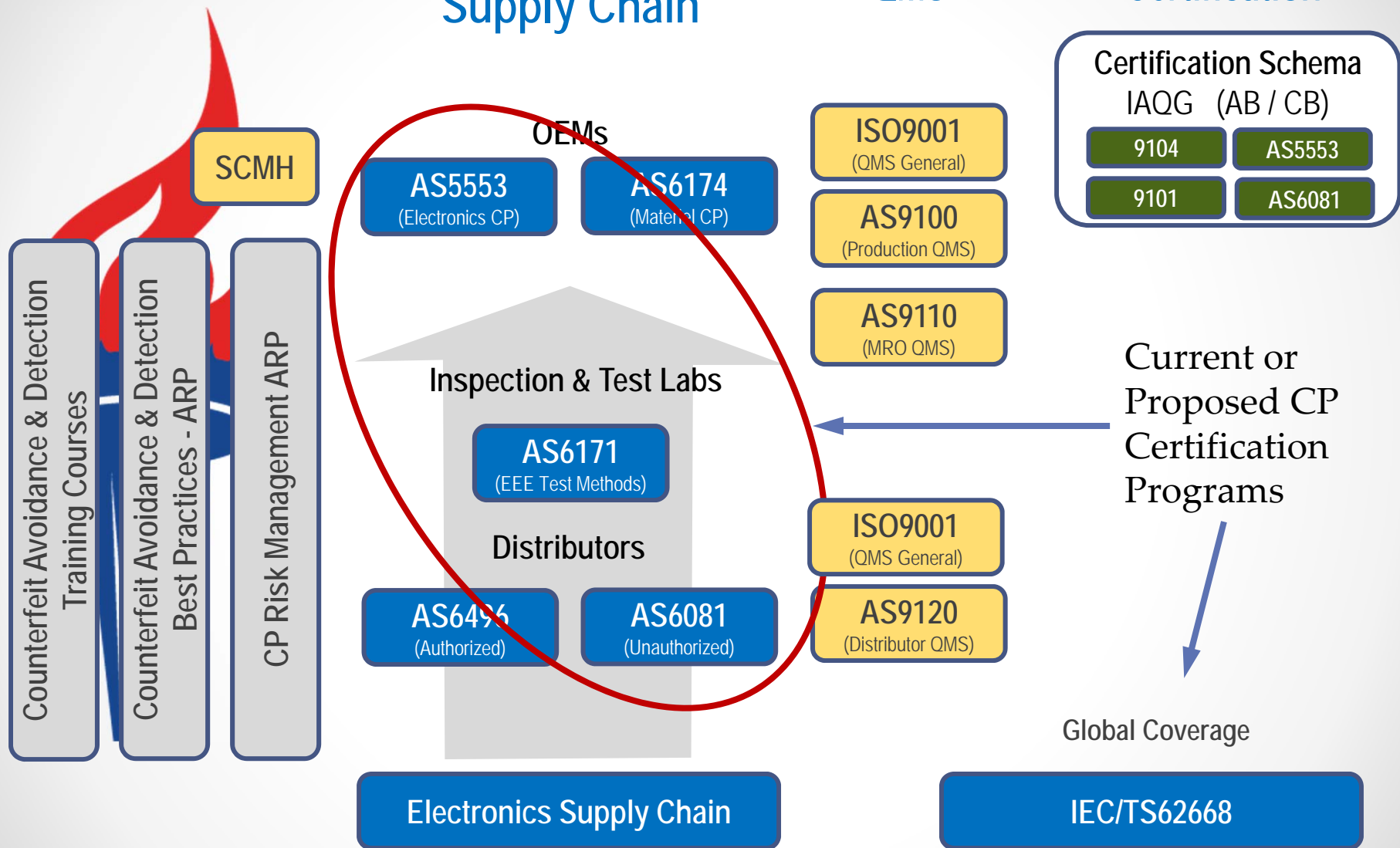
A work in progress



Original Counterfeit Parts Roadmap



Aerospace & Defense Supply Chain



Counterfeit Parts Accredited Certification Programs



- AR 36 - Accreditation Program for Avoidance of Counterfeit Electronic Parts Management Systems (ACEPMS)
 - AS5553 / AS6081
 - Only 1 CB for 6081
- AR 42 - IECQ Counterfeit Avoidance Program (IECQ AP-CAP)



Counterfeit Parts Accredited Certification Programs



- **AR 36 - Accreditation Program**
- The CB shall be accredited or attain accreditation concurrently to ISO/IEC 17021 or ISO/IEC 17021-1 to certify organizations for ISO 9001 or ISO 13485 quality management systems or AS9104/1 to certify organizations for an ISO 9001-based sector-specific standard (e.g., AS9100, AS9120). **Use AS6462 checklist**
- The CB shall issue certificates for ACEPMS only to organizations with valid certification accredited by an IAF MLA signatory (www.iaf.nu) for ISO 9001, ISO 13485, or an ISO 9001-based sector-specific standard (e.g., AS9100, AS9120). **Use AS6301 checklist**



Counterfeit Parts Accredited Certification Programs



- **AR 36 - Accreditation Program**
- The current version of AS6462, Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition Verification Criteria, is intended to be used by accredited CBs for certification to AS5553.
- The current version of AS6301, Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition – Distributors Verification Criteria, is intended to be used by accredited CBs for certification to AS6081.



Counterfeit Parts Accredited Certification Programs



- **AR 42 - Accreditation Program**
- The CB shall be accepted in the IECQ system for IECQ AP-CAP and be accredited by ANAB for ISO 9001 or ISO 13485 quality management systems or for an ISO 9001-based sector-specific standard (e.g., AS9100 or AS9120).
- No current application



Counterfeit Parts Accredited Certification Programs



AS6171 – EEE Parts Testing Labs

- Lab Accreditation Program being considered for AS6171 testing organizations

ISO/IEC 17025 Requirement Documents

- MA 2001, Accreditation Manual for Laboratory-related Programs
 - Establishes policies for and describes generic requirements for ANAB accreditation for laboratory-related programs
- MA 2003, Requirements for ISO/IEC 17025 Testing Laboratories
 - Companion to MA 2001, MA 2003 establishes policies for and describes the ISO/IEC 17025 accreditation process for testing laboratories



- Questions

