

Counterfeit Electronics NASA Update

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Counterfeit Electronic Components Committee

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Agenda

- Counterfeit Parts in the News
- NASA Updates
- SAE AS5553 Updates





Federal agencies launch "Operation Chain Reaction"

U.S. Immigration and Customs Enforcement (ICE) sent this bulletin on 06/14/2011 03:08 PM EDT

Federal agencies launch "Operation Chain Reaction"

Operation will focus on counterfeit items entering the US government supply chain

WASHINGTON - The [National Intellectual Property Rights Coordination Center \(IPR Center\)](#) has announced "Operation Chain Reaction," a new comprehensive initiative targeting counterfeit items entering the supply chains of the Department of Defense and other U.S. government agencies.

Nine of the 18 IPR Center members are participating in "Operation Chain Reaction." They include:

- U.S. Immigration and Customs Enforcement (ICE), Homeland Security Investigations (HSI)
- U.S. Customs and Border Protection
- Federal Bureau of Investigation
- Naval Criminal Investigative Service
- Defense Criminal Investigative Service (DCIS)
- U.S. Army Criminal Investigative Command, Major Procurement Fraud
- General Services Administration, Office of Inspector General
- Defense Logistics Agency, Office of Inspector General
- U.S. Air Force, Office of Special Investigations

Although not listed in this news release, NASA-OIG is an active participating member of "Operation Chain Reaction"

"Counterfeit and pirated goods present a triple threat to America," said ICE Director John Morton. "They rob Americans of jobs and their innovative ideas; fuel organized crime; and create a serious



Examples of recent investigations involving counterfeit products entering the federal supply chain include:

- An investigation uncovered the purchase of counterfeit Cisco Gigabit Interface Converters by an individual - since sentenced to prison - who intended to sell them to the Department of Defense for use by the Marine Corps to transmit troop movements, relay intelligence and maintain security for a military base.
- An investigation uncovered a global procurement and distribution network based in California that provided counterfeit integrated circuits to various governmental agencies, including the military and prime Department of Defense contractors. Agents conducted undercover purchases from individuals within the company under official Navy contracts and were provided counterfeits for weapons platforms.
- An investigation identified a Florida-based electronics broker providing counterfeit integrated circuits to a Department of Defense prime contractor fulfilling a Navy contract for components destined for implantation into ship and land-based antenna.



U.S. Immigration and Customs Enforcement

- ICE HSI investigated nearly 2,000 intellectual property cases last fiscal year, which resulted in 365 arrests, 216 indictments and 170 convictions.
- ICE HSI and CBP also made 19,959 IPR seizures topping \$1.4 billion manufacturer's suggested retail price (MSRP) in FY 2010 - a 34 percent increase from the previous fiscal year.
- Computer hardware was one of the top commodities seized, increasing five-fold from FY 2009 to FY 2010, including a \$2.3 million ICE HSI seizure that included counterfeit military-grade semi-conductors.
- Report IP theft or learn more about the IPR Center at www.IPRCenter.gov

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111TH Congress - 2D Session - S. 3729

<http://www.govtrack.us/congress/bill.xpd?bill=s111-3729>

AN ACT to authorize the programs of the National Aeronautics and Space Administration for fiscal years 2011 through 2013, and for other purposes

SEC. 1206. COUNTERFEIT PARTS.

(a) **IN GENERAL.**—The Administrator shall plan, develop, and implement a program, in coordination with other Federal agencies, to detect, track, catalog, and reduce the number of counterfeit electronic parts in the NASA supply chain.



111TH Congress - 2D Session - S. 3729

(b) REQUIREMENTS.—In carrying out the program, the Administrator shall establish—

- 1) counterfeit part identification training for all employees that procure, process, distribute, and install electronic parts ...
- 2) an internal database to track all suspected and confirmed counterfeit electronic parts ...
- 3) a mechanism to report all information on suspected and confirmed counterfeit electronic parts to law enforcement agencies, industry associations, and other databases, and to issue bulletins to industry ...



111TH Congress - 2D Session - S. 3729

(c) REVIEW OF PROCUREMENT AND ACQUISITION POLICY.—

- 1) IN GENERAL.—In establishing the program, the Administrator shall amend existing acquisition and procurement policy to purchase electronic parts from trusted or approved manufacturers. To determine trusted or approved manufacturers, the Administrator shall establish a list, assessed and adjusted at least annually, and create criteria for manufacturers to meet in order to be placed onto the list.
- 2) CRITERIA.—The criteria may include ...



111TH Congress - 2D Session - S. 3729

(d) REPORT TO CONGRESS.—Within one year after the date of enactment of this Act, the Administrator shall report on the progress of implementing this section to the appropriate committees of Congress.



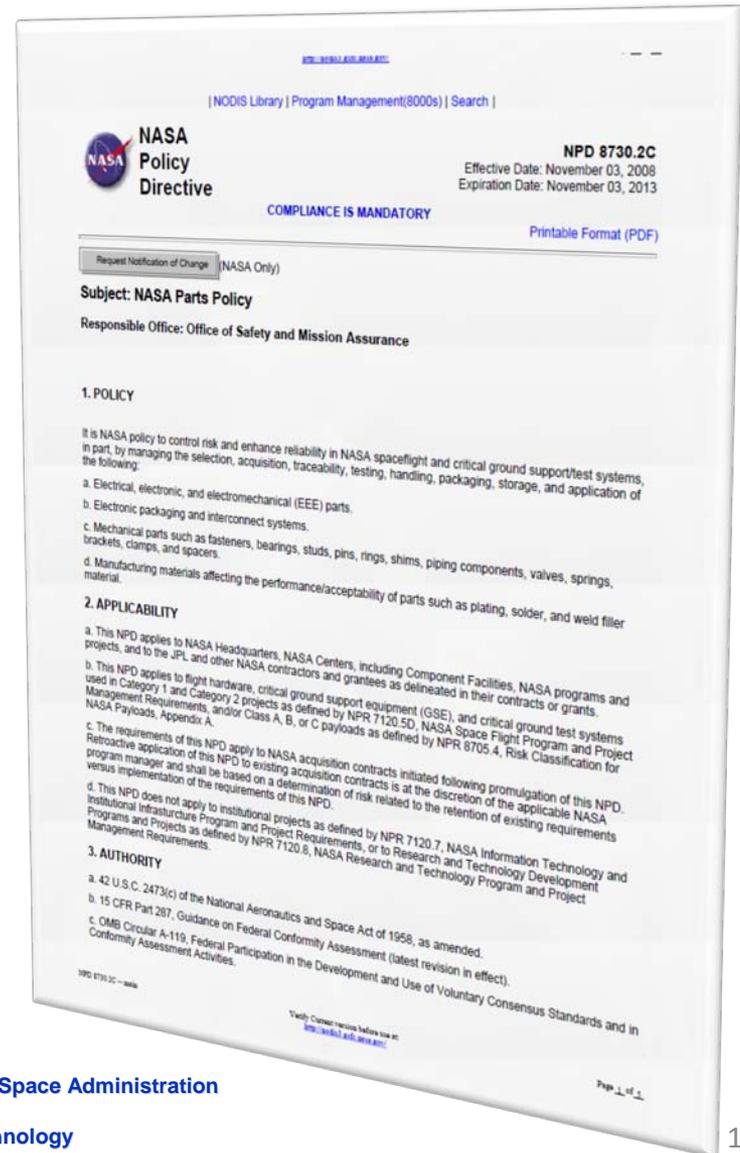
NPD 8730.2C, NASA Parts Policy

<http://nodis3.gsfc.nasa.gov/>

ATTACHMENT B: Counterfeit Parts Control Plan Contents

a. Parts Availability Process:

Maximize availability of authentic, originally designed, and qualified parts throughout the product's life cycle ...



NPD 8730.2C, NASA Parts Policy

b. Procurement Process:

- (1) Assess potential sources of supply to determine the risk of receiving non-authentic parts...
- (2) Mitigate risks of procuring counterfeit parts from sources other than OCMs or authorized suppliers.
- (3) Factor risk of receiving nonauthentic parts into the source selection process.
- (4) Ensure that approved/ongoing sources of supply are maintaining effective processes for mitigating the risks of supplying counterfeit EEE parts.



NPD 8730.2C, NASA Parts Policy

b. Procurement Process: cont'd

- (5) Include applicable contract/purchase order quality requirements related to counterfeit parts prevention. Examples of quality requirements are provided in AS5553, including: ...
- (6) Specify contractor flow down of applicable counterfeit parts prevention requirements to their subcontractors.



NPD 8730.2C, NASA Parts Policy

c. Product Assurance Process:

Verify receipt of authentic conforming parts, commensurate with product risk. Product risk is determined by the criticality of the part and the assessed likelihood of receiving a nonauthentic part...

d. Material Control and Disposition Process: ...

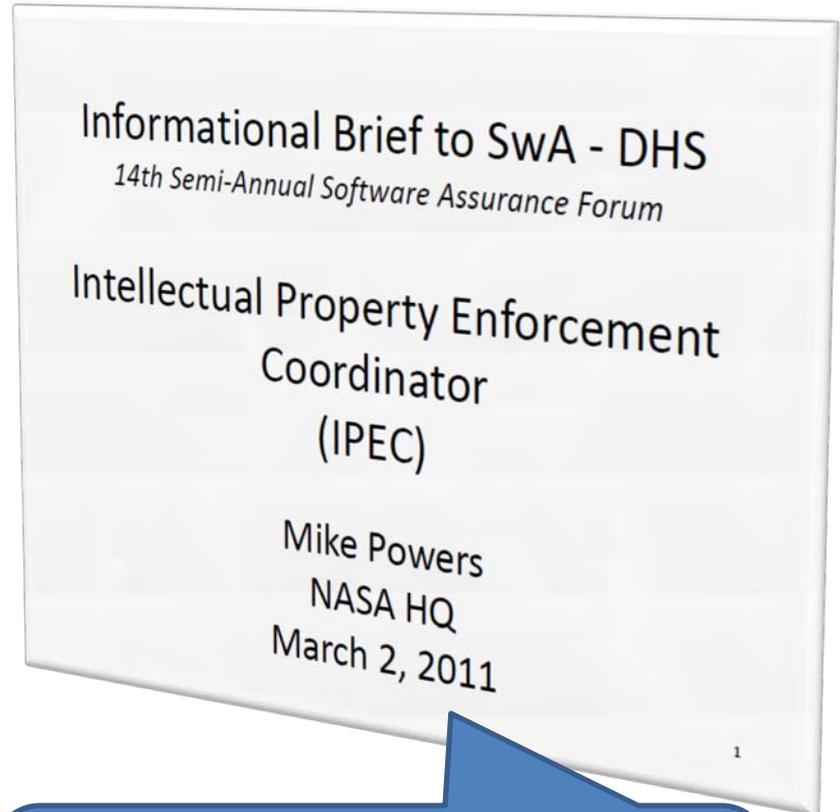
e. Reporting Process:

Report nonconforming, defective, and/or suspected counterfeit parts in accordance with NPR 8735.1, and for all cases involving counterfeit parts or other potential fraud, to the NASA Office of Inspector General and the NASA Director, Acquisition Integrity Program (AIP).



About IPEC

- PRO-IP Act 2008—Establishes a new executive branch office, Intellectual Property Enforcement Coordinator, within the Executive Office of the President.
- September 2009 -Victoria Espinel was appointed by the President to serve as the first Intellectual Property Enforcement Coordinator in developing and implementing the Administration's overall strategy for enforcement of intellectual property.
- June 2010 –Victoria Espinel submitted to Congress the 2010 Joint Strategic Plan on Intellectual Property Enforcement



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<http://www.whitehouse.gov/omb/intellectualproperty>

Counterfeit Parts Avoidance Training

FY11	NASA Center
October	GSFC
December	GRC
February	DFRC
March	KSC (Quality Leadership Forum)
April	SSC
May	GSFC
June	JSC



Counterfeit Parts Control Plans

- Pre-Draft
 - DFRC
 - Counterfeit parts avoidance is a key part of Procurement Quality Assurance process (documented in DCP-S-058) and includes:
 - Asking suppliers if they have a counterfeit parts avoidance plan per AS5553
 - Conducting supplier site visits
 - Plan in place to develop and release Center-wide Counterfeit Parts Control Plan through the Avionics Lab Branch with Quality Assurance Branch assistance



Counterfeit Parts Control Plans

- Drafted
 - GSFC
 - Draft in review/edit process
 - MSFC
 - MSFC-STD-3619 MSFC Counterfeit Control Requirements is to be released before December 2011
 - Final draft submitted to MSFC configuration management and currently undergoing format editing
 - When completed, the draft will be released for Center wide review through the MSFC RID process
 - Obsolescence management requirements will be released as a stand-alone document within three months



Counterfeit Parts Control Plans

- Released
 - GRC
 - Center directive “Space Assurance Requirements”, Sect. 5 “EEE and Mechanical Parts Control”, paragraph “Parts Procurement”:
 - “Parts **shall** be procured directly from the manufacturer or from the manufacturer’s authorized or franchised distributor. Parts may be purchased from independent distributors or brokers only when this is unavoidable, provided measures are taken to mitigate the risk of receiving counterfeit or discrepant parts.”



Counterfeit Parts Control Plans

- Released
 - GRC cont'd
 - EEE and Mechanical Parts Management” handbook, a guidelines document, section 7.2 Counterfeit Parts specifies:
 - Parts procurement from the manufacturer or from manufacturer’s authorized or franchised distributors
 - If necessary to purchase parts from independent distributors or brokers, steps shall be taken to reduce the risk presented by counterfeit parts through assessment of the ID’s compliance verification process, traceability documentation, purchasing and acceptance practices, and history of supplying genuine parts
 - Suspect counterfeit parts shall be reported through a GIDEP ALERT or Problem Advisory



Counterfeit Parts Control Plans

- Released
 - JPL
 - Counterfeit Electronic Parts Control Program, Rev. 0, Effective: Sep 13, 2010, Guideline, DocID: 78395
 - Institutional Parts Program (IPPR) , Effective May 19, 2011, Requirement, Doc ID: 57732 specifies:
 - Counterfeit parts control per JPL DocID 78395
 - Parts procurement from approved manufacturer or authorized (franchised) distribution
 - Traceability to a specific manufacturer, part number, and lot number or lot date code.
 - Non-conforming, defective, or suspected counterfeit parts reporting per GIDEP and NASA Advisories
 - Enhanced PQA Processes (e.g., supplier selection criteria, contract clauses, receiving inspection plans, etc.



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- SAE AS5553 Updates



SAE G-19 Committee

- September 2007 - G-19 Chartered
 - Develop Standard(s) suitable for use in aeronautic, space, defense, civil and commercial electronic equipment applications to mitigate the risks of counterfeit electronic components... will document recognized best practices in component management, supplier management, procurement, inspection, test/evaluation methods and response strategies when suspect or confirmed counterfeit components are detected.
- November 2008 - NASA adopts AS5553 with update to NPD 8730.2C, NASA Parts Policy
- April 2009 - SAE International released aerospace standard AS5553, Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition
- August 2009 - DoD adopts AS5553

SAE G-19 Members

from Government, Defense and Industry Sectors

Government Members ...

- Defense Logistics Agency (DLA)
- Defense Contract Management Agency (DCMA)
- DOE - National Nuclear Security Administration (NNSA)
- Federal Aviation Administration (FAA)
- Intelligence Advanced Research Projects Activity (IARPA)
- Ministry of Defence, UK
- National Aeronautics and Space Administration (NASA)
- USAF/NRO (The Aerospace Corporation)
- USAF Wright Patterson AFB
- US Army - AMCCC Business Operations HQAMC
- US Army Aviation & Missile Command
- US Army Redstone Arsenal
- US Missile Defense Agency (MDA)
- US Navy - Naval Air Warfare Center
- US Navy - Naval Surface Warfare Center (NSWC)Crane
- US Navy - NAVSEA Crane
- US Navy, Submarine Maintenance Engineering, Planning and Procurement (SUBMEPP) Activity
- US Department of Transportation

Note: Members function as individuals intending to represent the best interests of the industry, and not as agents or representatives of any organization with which they may be associated

SAE G-19 Members

from Government, Defense and Industry Sectors

Participating Industry Associations ...

- ACLASS Accreditation Services
- Aerospace Industries Association (AIA)
- ANSI-ASQ Accreditation Board (ANAB)
- Component Obsolescence Group (COG)
- The Electronic Components Supply Network
- EIA Standards and Technology Electronic Components
- ERAI, Inc.
- Independent Distributors of Electronics Association (IDEA)
- International Electrotechnical Commission Quality Assessment System for Electronic Components (IECQ)
- Performance Review Institute
- UK Electronics Alliance (UKEA)

SAE G-19 Members

from Government, Defense and Industry Sectors

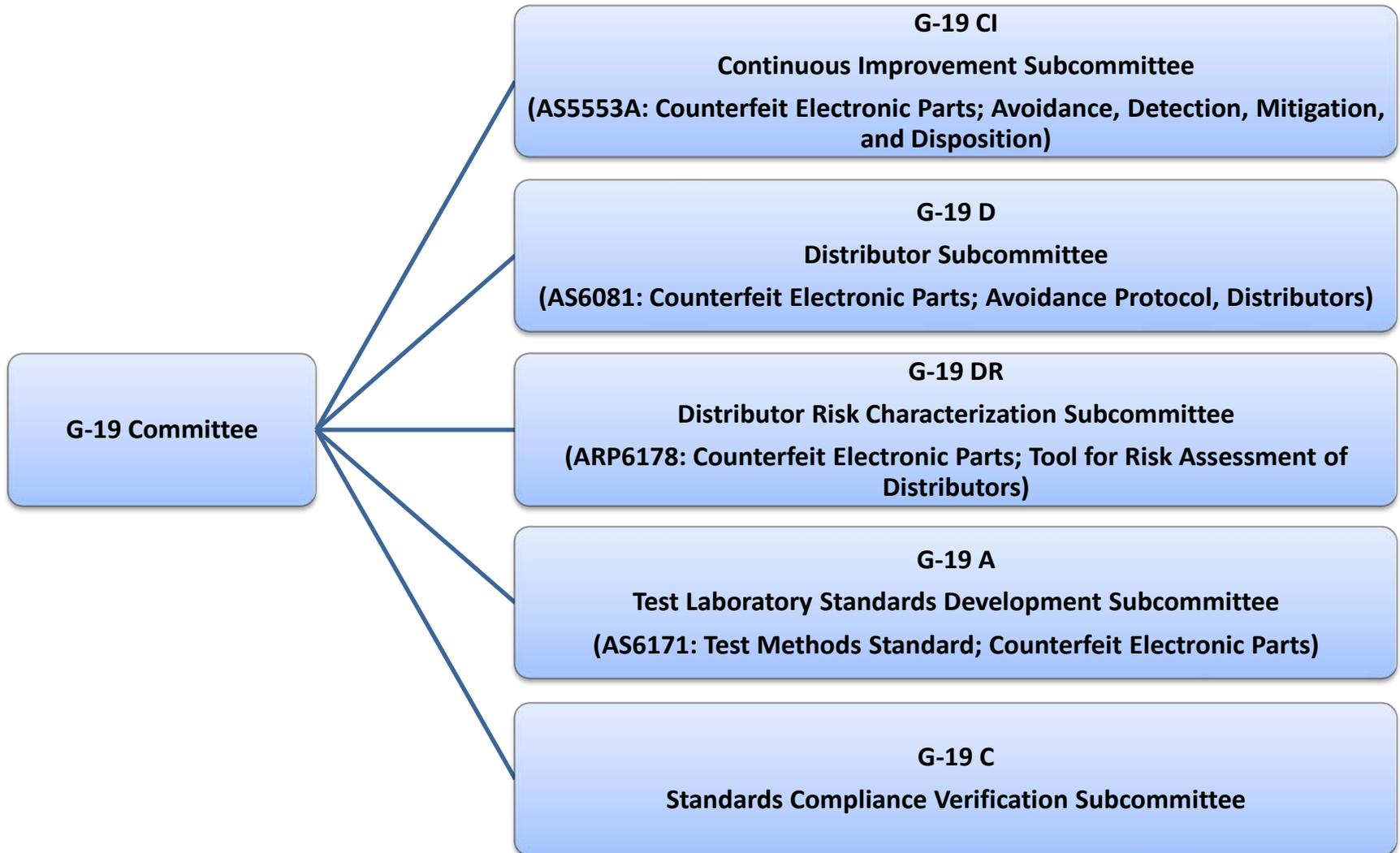
Industry Members ...

Adaptive Management Solutions
Aero Engine Controls
American Electronic Resource
Analytical Alternatives
Analytical Solutions
Applied DNA Sciences
Arcadia Components
Ares Corp
Arrow Electronics
Astute Electronics
BAE Systems (Operations)
BAE Systems
Ball Aerospace & Technologies
Boeing
Boeing Advanced Systems
Business Quality Process Management
Bechtel Plant Machinery
CALCE University Of Maryland
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China Aero-Polytechnology Establishment
Creative Electron
Crestwood Technology Group
DA-Tech
Derf Electronics
Det Nortske Veritas (DNV)
DPA Components International
Electronic Supply Chain Solutions

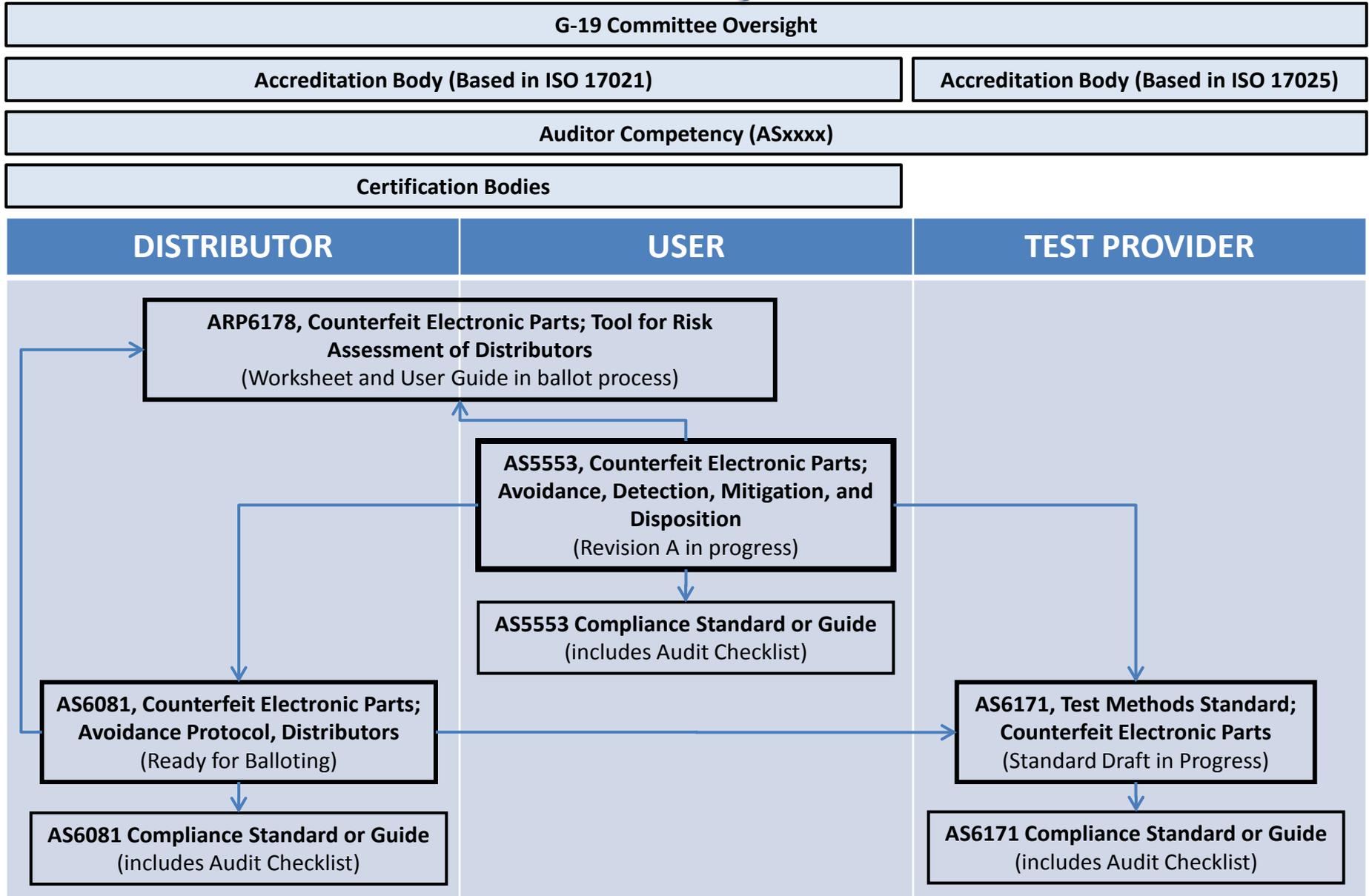
Eltek Semiconductors
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GE Aviation
Glenbrook Technologies
Goodrich Control Systems
Greenberg & Bass
Harris
Hi-Reliability Microelectronics
Hi-Rel Laboratories
Honeywell Aerospace Electronic Systems
Honeywell Int'l
Honeywell Technology Solutions
Infineon Technologies AG
Integra Technologies
Jabil Circuits
Jacobs Engineering
Jet Propulsion Laboratory
L-3 Communications - CSW
Left Coast Technical Solutions
Lockheed Martin Aeronautics
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Sandia National Laboratories
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Selex Galileo
Silicon Cert Laboratories
SMT Corp
SolTec Electronics
Sonix
Sonoscan
SRI International Sarnoff
Star Associates International
Trace Laboratories
TTI
Underwriters Laboratories, UL DQS
Westland Helicopters
White Horse Laboratories
World Data Products
World Micro
Wyle Laboratories

G-19 Subcommittees



Document Roadmap since AS5553



Summary

- U.S. Government and multiple Federal Agencies are reacting to the increasing threat of fraudulent and counterfeit electronic parts in the supply chain
- NASA is responding to these same threats through proactive involvement in IPEC, Parts Policy Directives, Awareness Briefings at the NASA QLF, enhanced suspect Parts database reporting, support of VCS development and Counterfeit Parts Awareness Training of personnel
- The SAE G-19 Committee is addressing the global counterfeit electronic components threat through a set of international standards that establishes risk-based methods, practices and requirements for the entire supply chain



Thank you!

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

SAE International

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STANDARDS

SAE Home > Standards

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

Product Code: AS5553
Date Published: 2009-04-02

Issuing Committee:
G-19ci Continuous Improvement

Scope
This document is intended for use in aviation performance/reliability electronic equipment use by all contracting organizations that procure directly or integrated into electronic parts. This standard is generic and intended to procure electronic parts, regardless of source.

Product Status: In Stock

File Size: 314K

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Standard	Date published
AS5553	2009-04-02
AS5553-01	2009-04-02

To order AS5553:

NASA Technical Standards Program:
<https://standards.nasa.gov/>
or
T: 877-606-7323
F: 724-776-0790
E: CustomerService@sae.org
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Backup

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Chairman, SAE International G-19

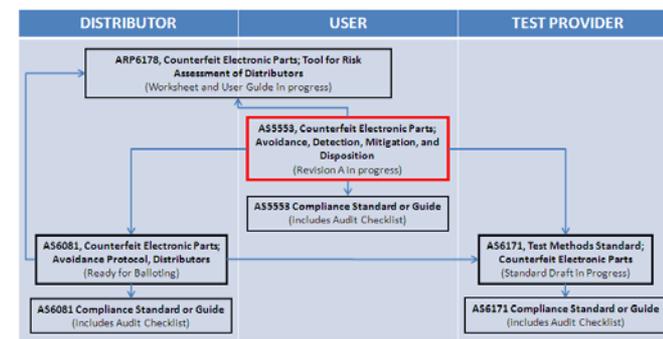
Counterfeit Electronic Components Committee

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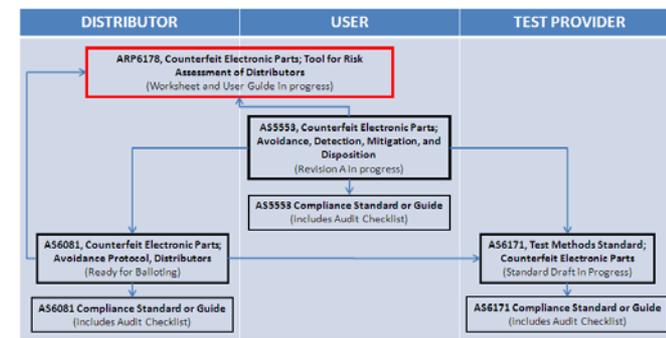


AS5553 - Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition



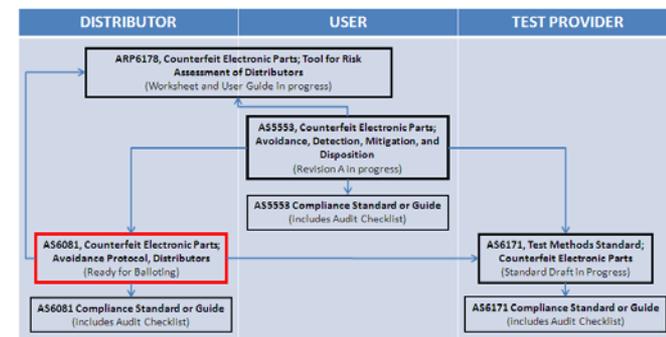
- Intended for use by Original Equipment Manufacturers (OEMs), organizations that procure electronic components/parts and/or assemblies containing such items
- Requirements to be applied/flowed down through the supply chain to all organizations that procure electronic components/parts and/or assemblies, regardless of type, size and product provided
- Mitigation of counterfeit electronic components/parts is risk-based and varies, depending on the desired performance or reliability of the equipment/hardware

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



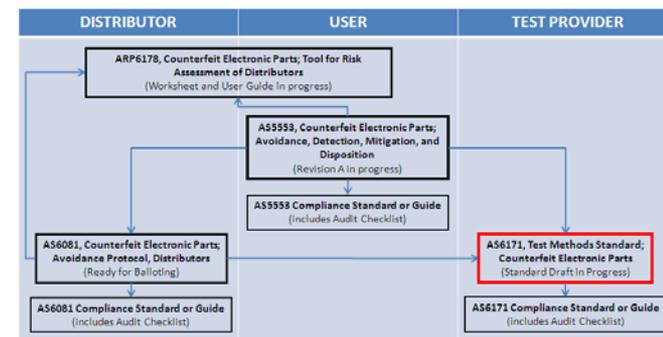
- Intended for use by organizations that procure electronic components from suppliers other than the original component manufacturer (OCM)
- Provides organizations with a tool to assess a supplier's capability to prevent, detect, contain and report suspect or confirmed counterfeit electronic components
- Not intended to replace certification compliance criteria

AS6081 - Counterfeit Electronic Parts; Avoidance Protocol, Distributors



- Similar to AS5553, but contains prescriptive counterfeit parts avoidance requirements intended for distributors that purchase from the open market
- OEMs can specify their suppliers comply with AS6081 to meet selected flow-down requirements of AS5553
- AS6081 requirements are intended to be applied/flowed down to distributor's suppliers
- Independent, third-party certification bodies (CBs) verify of compliance to AS6081

AS6171 - Test Methods Standard; Counterfeit Electronic Parts



- Standardize practices to detect suspect counterfeit electronic parts and to ensure consistency of test techniques and requirements across the supply-chain
- Includes external visual inspection, radiological inspection, x-ray fluorescence, tests for remarking and resurfacing, delid physical analysis, electrical tests, acoustic microscopy, optical/SEM inspection, FTIR/DSC/TMA testing and miscellaneous testing
- Level of testing is risk-based and includes sampling plans
- Accreditation of the Test Laboratory will be through ACLASS to ensure the impartiality and competence of the Test Lab

Terms and Definitions

Approved Supplier

Refurbished

Counterfeit Part

Suspect Part

Authority Having Jurisdiction

Upscreened

Aftermarket Manufacturer



Fraudulent Part

Refinished

Stocking Distributor

Homogeneous Lot

Franchised Distributor

Broker Distributor

Upgraded

Independent Distributor

Authorized Supplier

Definition – Suspect, Fraudulent and Counterfeit Part

Suspect Part

A part in which there is an indication by visual inspection, testing, or other information that it may have been misrepresented by the supplier or manufacturer and may meet the definition of fraudulent part or counterfeit part provided below.

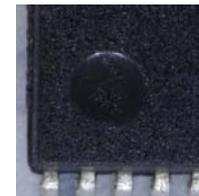
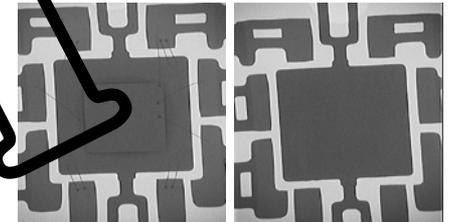
Fraudulent Part

Any suspect part misrepresented to the customer as meeting the customer's requirements.

Counterfeit Part

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.

DEFINITION



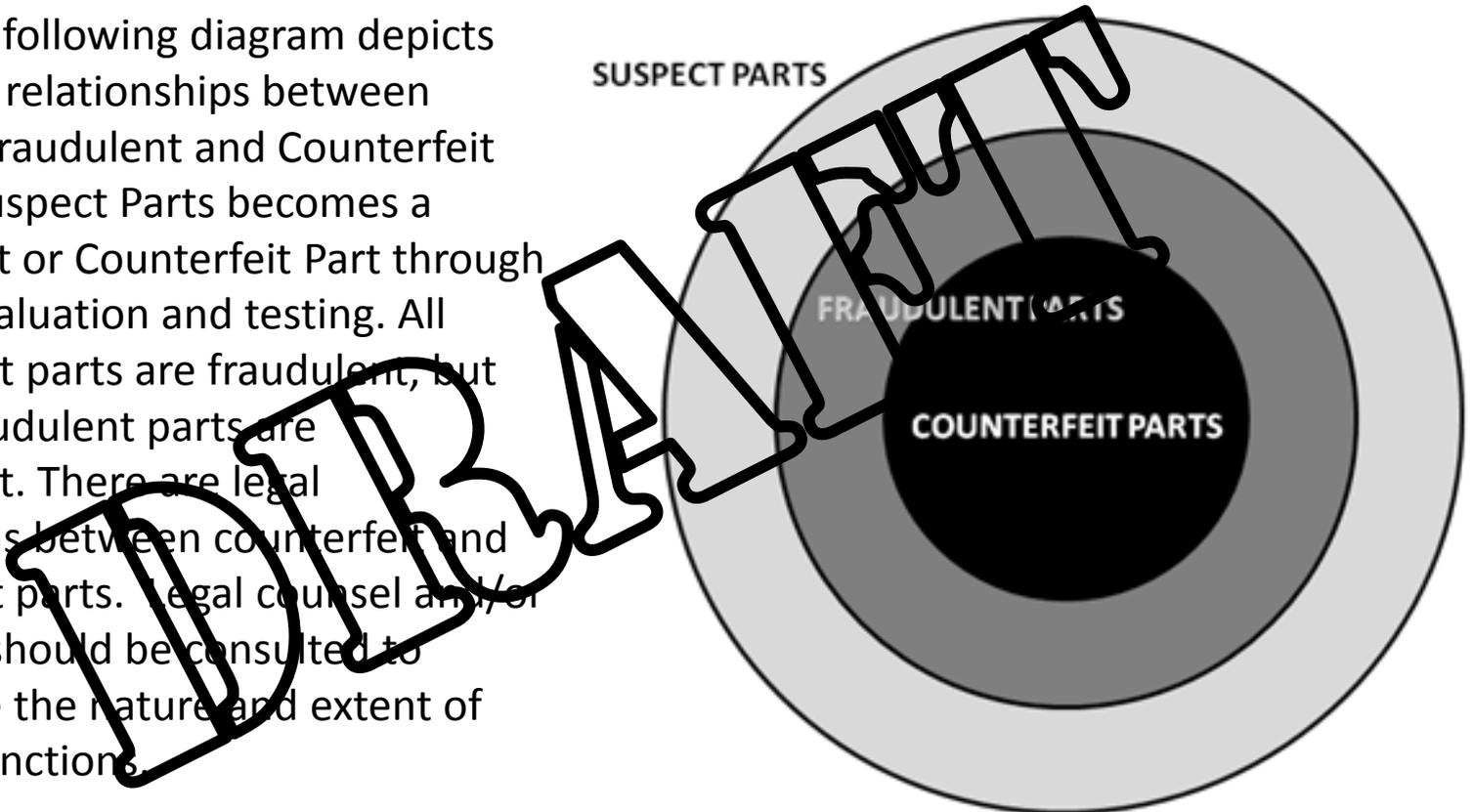
<http://www.aeri.com/counterfeits.html>



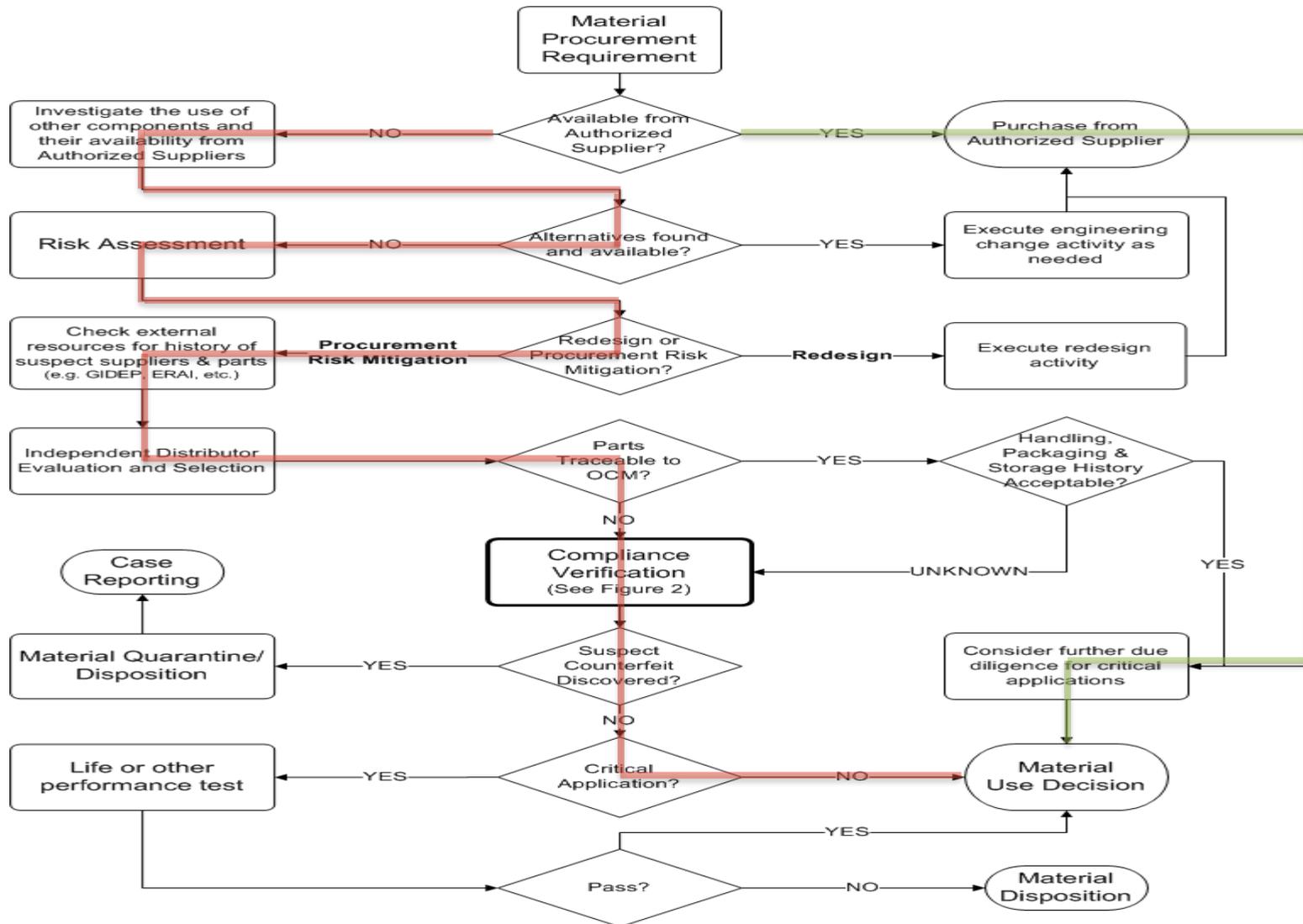
<http://www.aeri.com/counterfeits.html>

Definition – Suspect, Fraudulent and Counterfeit Part

Note: The following diagram depicts the above relationships between Suspect, Fraudulent and Counterfeit Parts. A Suspect Parts becomes a Fraudulent or Counterfeit Part through further evaluation and testing. All counterfeit parts are fraudulent, but not all fraudulent parts are counterfeit. There are legal distinctions between counterfeit and fraudulent parts. Legal counsel and/or the OCM should be consulted to determine the nature and extent of these distinctions.



Risk Mitigation



AS5553 Revision A

- Worked by the G-19 Continuous Improvement (G-19 CI) Subcommittee, co-chaired by G-19 members from Selex Galileo UK and Component Obsolescence Group (COG)
- Majority of members from OEM/Aerospace/Defense/Hi-Rel community and seeking same type of members from other countries
 - Recently added member from the UK Ministry of Defence (MoD)
- Primary tasks are to add international content, applicable global references and integrate selected AS6081 content