Counterfeit Electronic Parts

NEPP Electronics Technology Workshop

June 22-24, 2010

Brian Hughitt, NASA Headquarters

Office of Safety and Mission Assurance

NASA Satellites Get 'Counterfeit' Parts; Taxpayers Pay

Agency Chief Says Suppliers Sometimes Skip Safety Tests

By NED POTTER
March 7, 2009

abc NEWS
15 comments

Watch Video


WATCH: Digging Up Shakespeare


WATCH: Baby Elephant Gets a Jumbo Leg


WATCH: Facebook and Myspace Dominate E-Mail

Maybe it was something he didn't mean to say. Or maybe NASA has a problem.

FONT SIZE A A A
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PRINT
RSS
DIGG
SHARE

At a House subcommittee hearing on NASA's cost overruns, the agency's acting administrator, Christopher Scolese, was

Counterfeit Electronic Parts

1. Definitions and Examples
2. Scope, Magnitude, and Trend
3. Sources
4. Product and Mission Impact
5. Solutions
6. Resources
7. The Way Forward
8. Help from Above

What are Counterfeit Parts?

Electronics Manufacturing Industry

- **Substitutes or unauthorized copies**
- **A part in which the materials used or its performance has changed without notice**
- **A substandard component misrepresented by the supplier**

Electronics Distributor Industry

- **Items that are produced or distributed in violation of intellectual property rights, copyrights, or trademark laws**
- **Items that are deliberately altered in such a way as to misrepresent the actual quality of the item with intent to defraud or deceive the purchaser.**
  - **Any information omitted or means taken to mislead the purchaser to believe that such items are authentic or lawful**

US Department of Energy / SAE AS5553

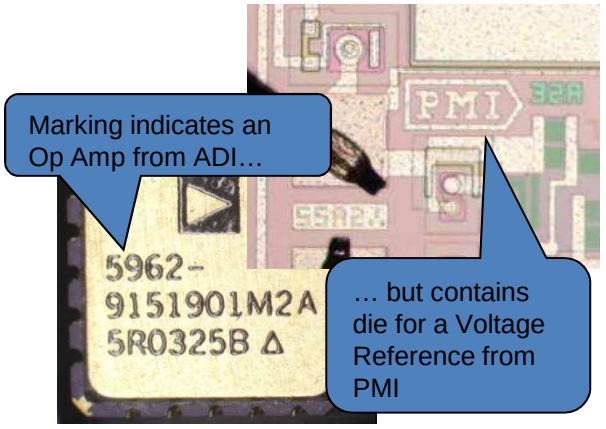
- **A copy or substitute without legal right or authority to do so, or one whose material, performance, or characteristics are knowingly misrepresented**

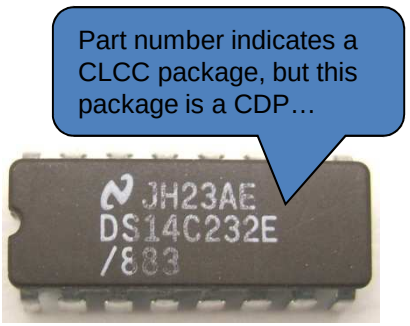
EIA/G-12 Committee

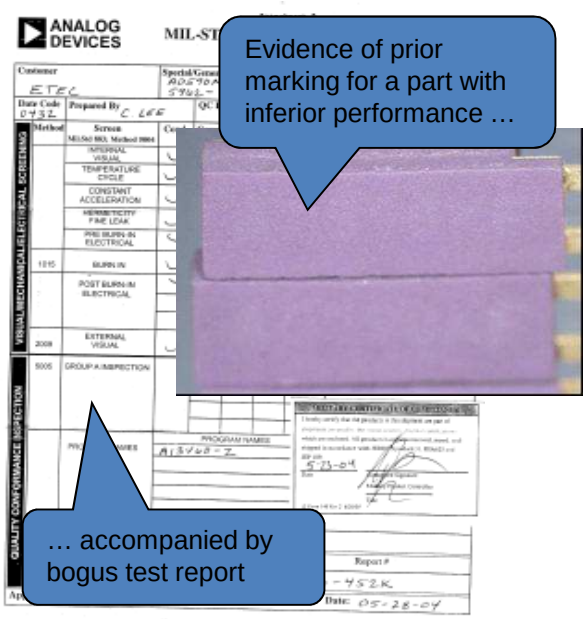
- **An item whose identity or pedigree has been deliberately altered or misrepresented by its supplier**

Counterfeit Electronic Parts

- Parts re-topped &/or remarked to disguise parts differing from those offered by the original part manufacturer
- Defective parts scrapped by the original part manufacture
- Previously used parts salvaged from scrapped assemblies
- Devices which have been refurbished, but represented as new product.

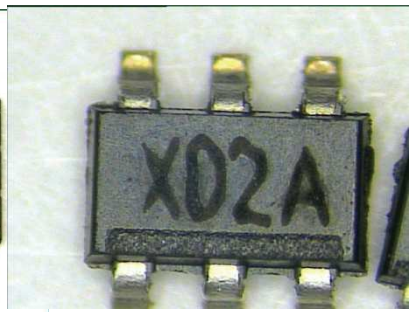






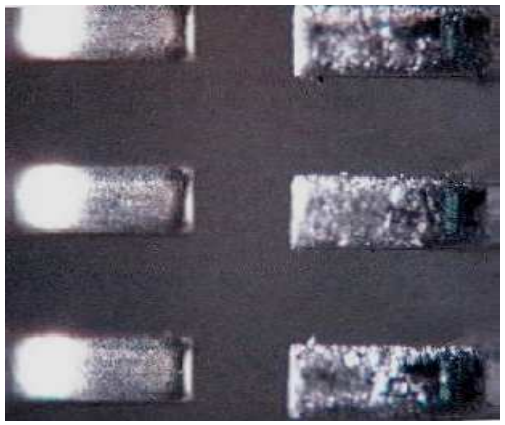
Re-topping

Remarking

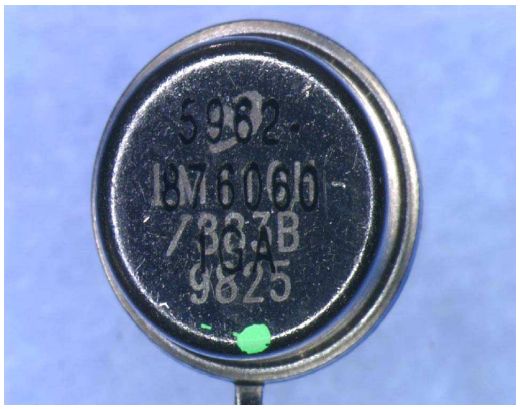


Counterfeit Part Examples

New versus Refurbished leads

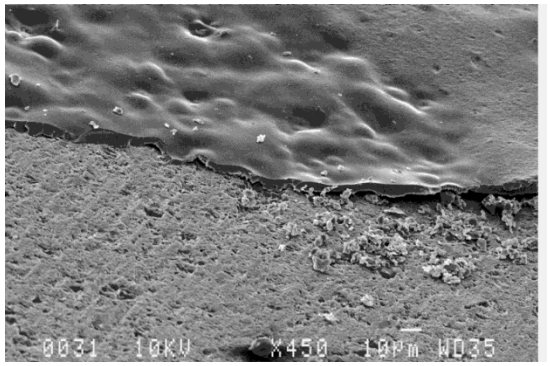


Dual Markings

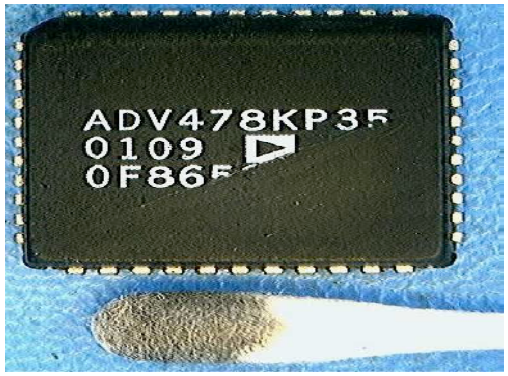


National Semiconductor does not use " : " in part numbers

Blacktop peeling away. Sand marks evident



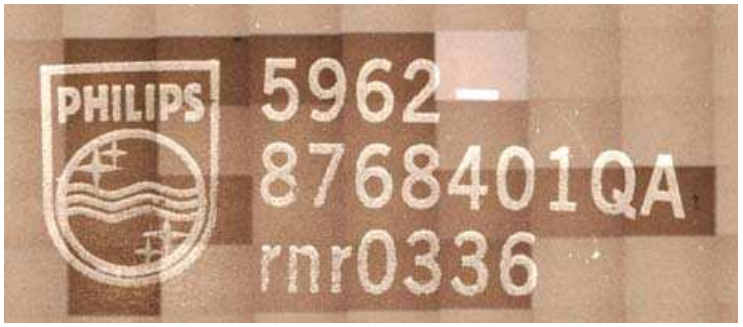
Acetone Swipe



Missing Serial Number

Counterfeit Part Examples

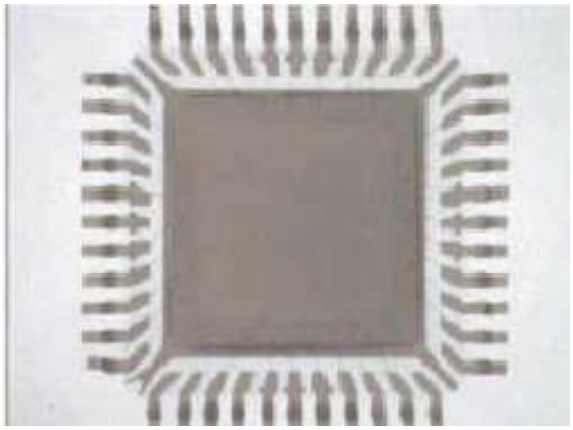
Package Marking
Is Phillips



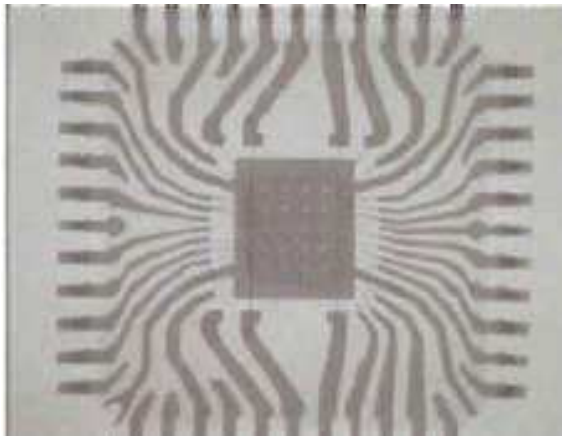
Die Marking
Is Intel

Counterfeit Part Examples

X-Ray showing die pattern of known good part



X-Ray showing die pattern of counterfeit

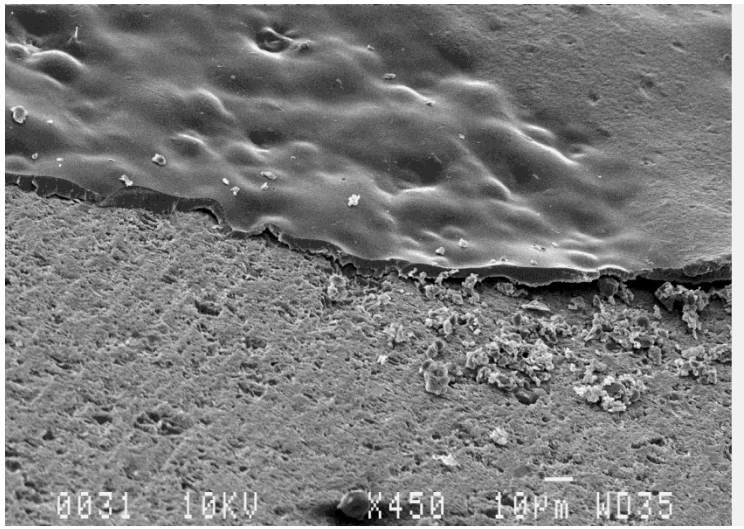


Which Device is Counterfeit?

Counterfeit

Known Good Part

Blacktopping and Remarking



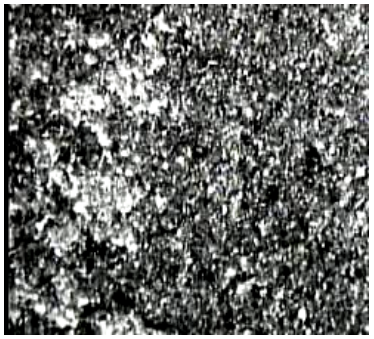
REMARKED. Used in medical product. Markings sanded off. Blacktopped. Allegro logo illegally tampered. Blacktop peeled away with normal process handling, taking markings with it. SEM photo at right shows detail of differences in texture - coating (top) and sanded surface (bottom). Striations in the sanded surface were made by abrasive grains (450x).

Innovative / Hi-Tech Re-Marking

We of course run a lab and we could see that the surface had been etched, how???. This unfortunately is not the first time we have seen this type of damage.

IT IS A FORM OF PLASMA ETCH!!!

We do not have any detail of how, use your imagination, at any rate these parts have had the marking etched away, this way it saves them from sanding, then blacktopping, and finally remarking. They simply etch and remark



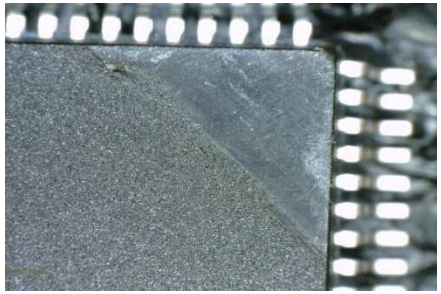
Yes these are the same surfaces

Innovative / Hi-Tech Re-Marking

Exemplar Top Surface

Suspect Top Surface

Pure Acetone / 7 Day Soak- No Affect

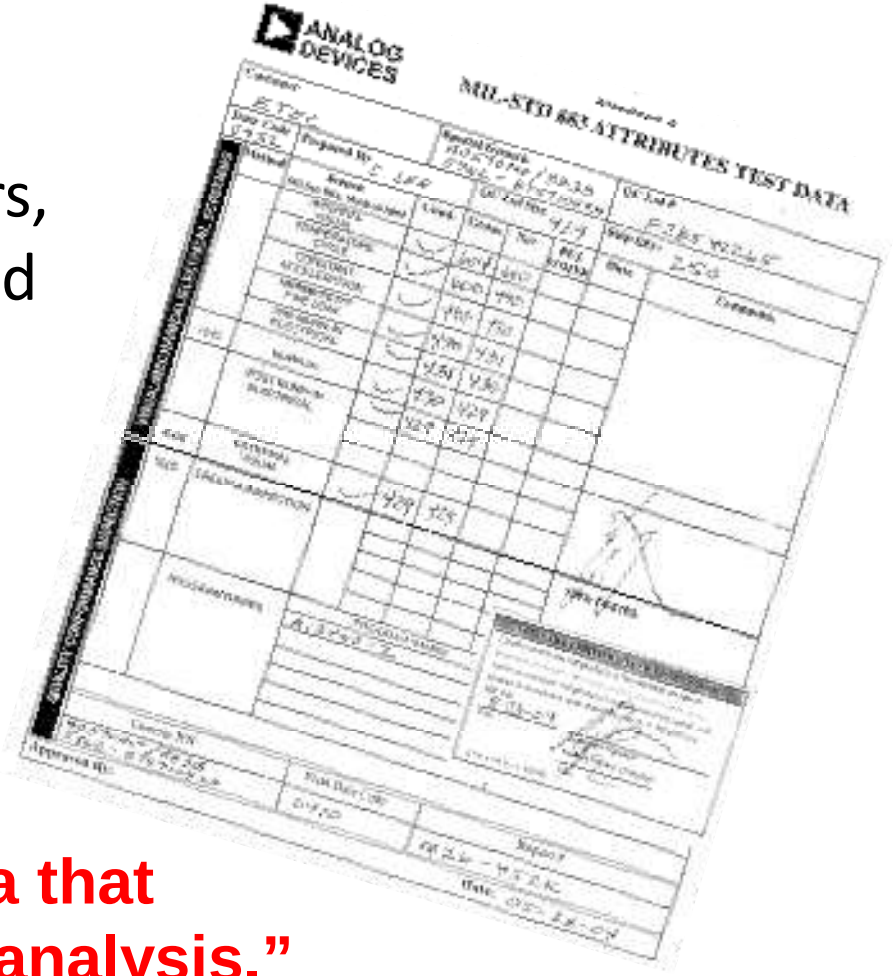


New Blacktop Material Can Only Be Removed With an X-acto Knife

Bogus Test Reports

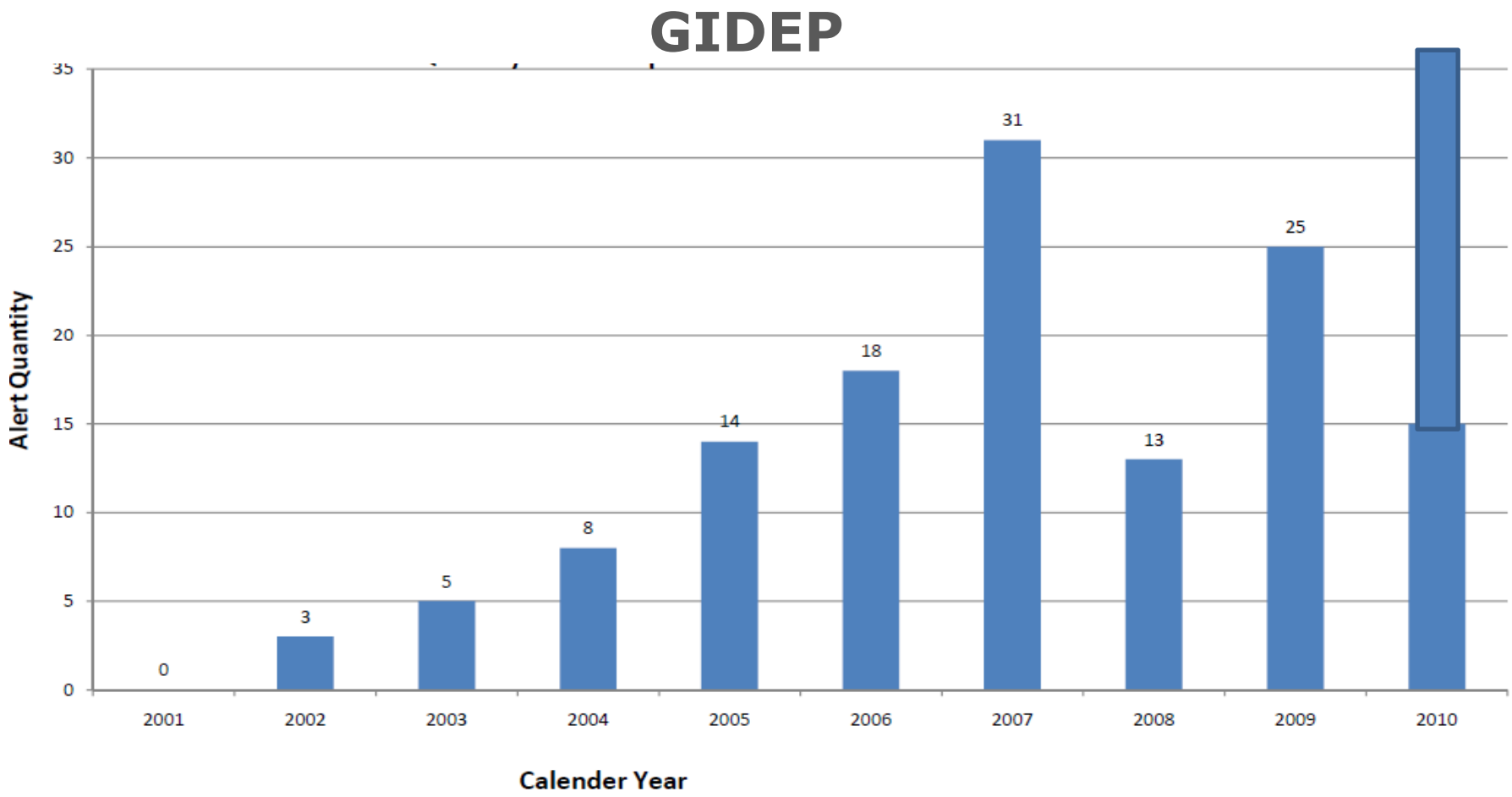
25 companies, 19% of those employing testing contractors, had problems with U.S.-based firms concerning faulty or forged testing.

- The parts were cleared by the testing house, but were later found to be counterfeit by the customer.



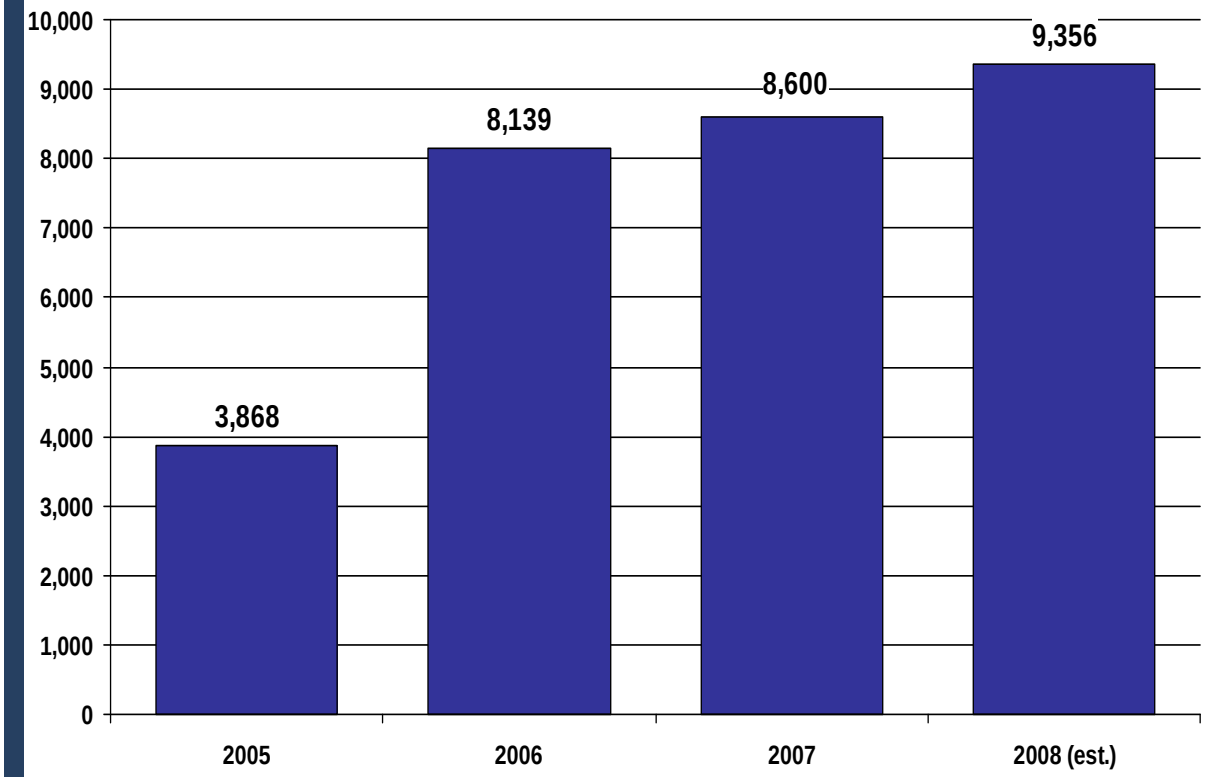
"This is an area that deserves further analysis."

Counterfeiting Trend



Counterfeiting Trend and Magnitude

Total Counterfeit Incidents:



U.S. Customs Notifications

Year	Number of Incidents
2005	1
2006	29
2007	169
2008	604

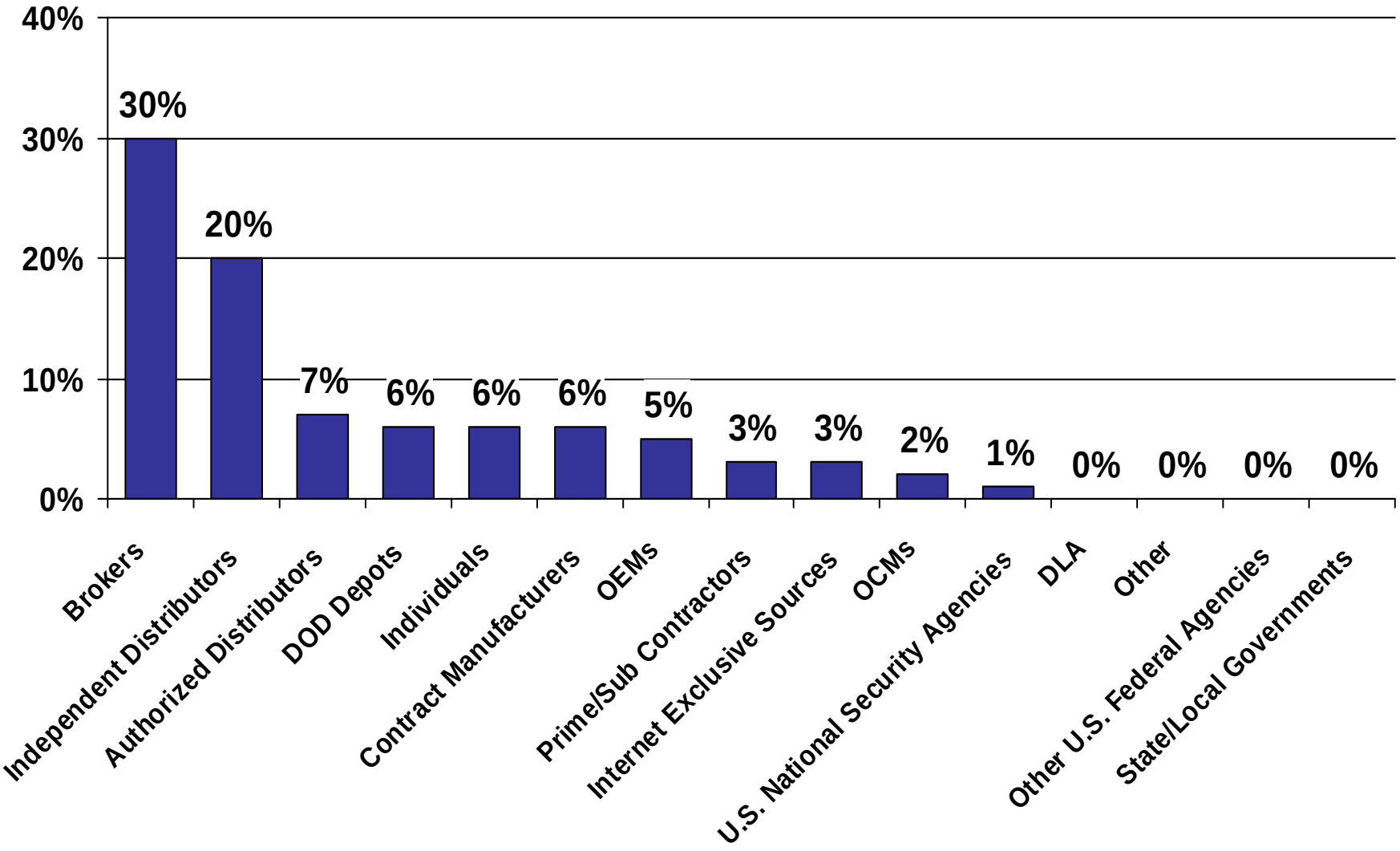
Semiconductor Manufacturer Survey

In June 2006, the Semiconductor Industry Association (SIA) established the Anti-Counterfeiting Task Force (ACTF) consisting of semiconductor manufacturing company members involved in the investigation of counterfeiting and coordination with law enforcement.

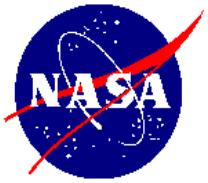
Semiconductor Manufacturer disclosures …

- Company A: Over 100 part numbers have been counterfeited in last 3 years.
- Company B: 19 cases reported involving 97,000 units.
- Company C: Since June 2006, there have been 4 seizures of counterfeits of our products by U.S. Customs; units seized ranged from 6000 to 60,000.
- Company D: "We estimate that 2-3 percent of purchases of our brand are counterfeit"
- Company E: A broker website indicated 40,000 or our devices available, but our company had only made less than 200 units of that device with the specified date code. If all 40K were available it would result in a $34 million loss.

Sources of Counterfeiting



Sources of Counterfeiting



"Most broker organizations are very small and do not have established quality control procedures in place. We have more than 10,000 brokers in our database. Of those only 200 have more than 10 employees and quality control procedures for their staff. That leaves us 9,800 to fall victim to. Many brokers are working out of their home. All someone needs is a phone, fax and e-mail address and they are in business."

American Electronic Resource, Inc.

Sources of Counterfeiting

Broker with Cage Code in California

Address is a private home

Is this Broker selling genuine product?

Is he maintaining the product under proper conditions?

Do you Really Know this Supplier???

Bogus Qualifications

Multiple Alias's

SIA SEMICONDUCTOR INDUSTRY ASSOCIATION

Sources of Counterfeiting

More than a Backyard Industry!

Millions of Scrap Boards

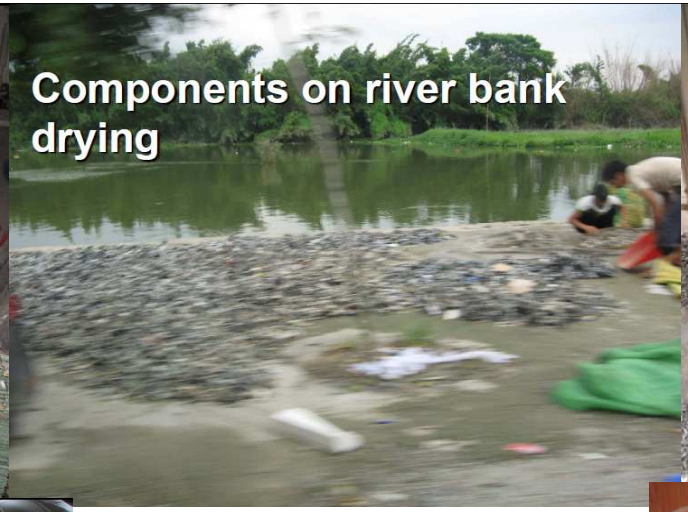
Component Removal

Sorted by size, similarity and lead count

Re-processed

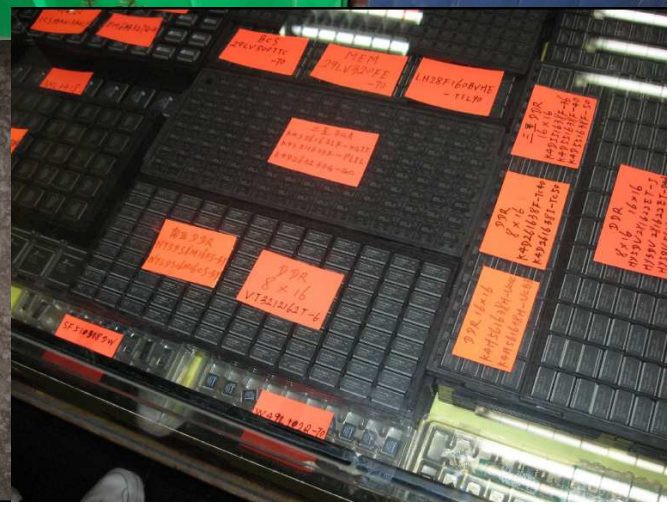
Workers extract plastics from discarded electronics in Guiyu, a few hours' drive northeast of Hong Kong. The city has 5,500 family workshops handling e-waste.

Laborer de-soldering circuit boards over a coal-fired grill. Rock in the box is where boards are hit to remove solder. Pliers are used to pluck off chips which go into various buckets. The boards are then tossed into a pile for open burning.



Slide courtesy of

SMT



http://www.businessweek.com/magazine/content/08_41/b4103034193886.htm?chan=top+news_top+news+index+-+temp_top+story

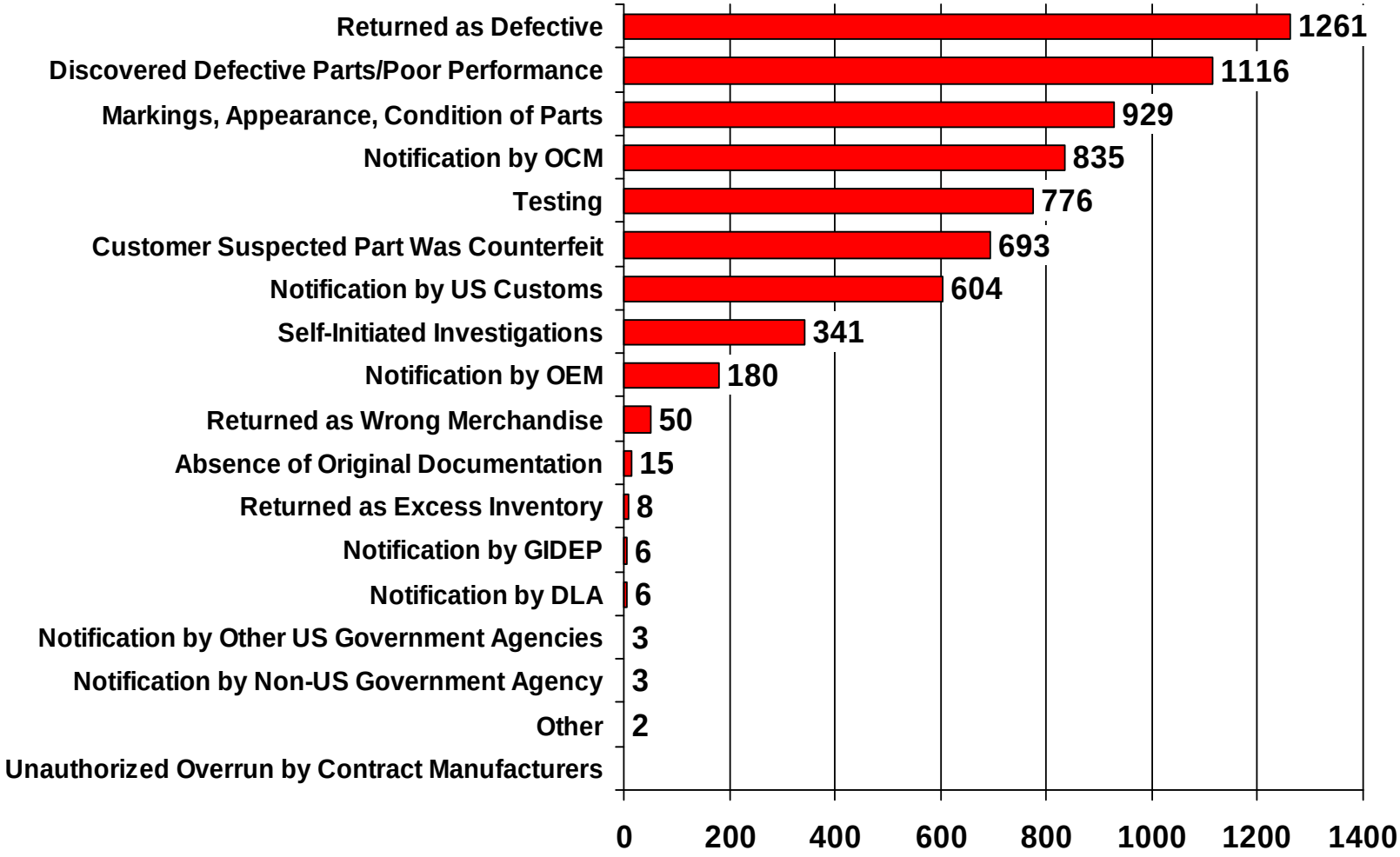
http://www.businessweek.com/technology/special_reports/20100302ceo_guide_to_counterfeit_tech.htm

Product Impact

GIDEP Counterfeit Case Summaries

EE-A-06-01	Test failures at a defense contractor were found to be microcircuits containing many different chips
EE-A-06-03	Supplier of military hardware found suspect counterfeit microcircuits having dual part number markings
EE-A-06-04	Microcircuits that failed product testing were found to have chips from another source
M9-A-07-01	During manufacturing of a military product, suspect counterfeit transistors were functional failures
6E-P-07-01	Memory device supplier confirmed parts marked with their name did not contain their chips
UY7-P-07-01	Microcircuits, that failed electrical testing, were found to contain chips from another manufacturer
NB4-P-07-01	Suspect counterfeit microcircuits, from an unauthorized distributor, found during testing at an aerospace supplier
J5-A-07-01	Independent distributor supplied suspect counterfeit parts (not available from original supplier) to defense plant
J5-A-07-02	Microcircuits, supplied by an independent distributor, were suspect counterfeit (device markings not authentic)
A2W-A-07-01	Suspect counterfeit transistors failed electrical tests; found to have many different chips
J5-A-07-06	Programmable logic devices found to be suspect counterfeit (lot code was after manufacturer discontinued parts)
J5-A-07-09	Microcircuits found to be suspect counterfeit as the lot date code was after the manufacturer stopped production
UE-A-07-01	Suspect counterfeit microcircuits failed electrical tests; contained chips from another manufacturer
AAN-U-08-052	A government entity reported counterfeit circuit breakers in nuclear power plants
CE9-P-08-02	Military parts manufacturer reported U. S. authorities have recently intercepted many counterfeit parts shipments
UL-P-08-01	Distributor unable to provide test reports on suspect counterfeit microcircuits that failed during factory testing
D4-A-09-01	Military hardware manufacturer found suspect counterfeit programmable devices showed part remarking

How Companies Are Uncovering Counterfeits



Product Impact

What “failed parts” mean to NASA

Schedule slippage

Cost Increase

Reduced performance

Poor reliability

Product failure

- Personnel Safety
- Mission Success

Decline in mission readiness

Resources

Work Groups/Committees/Associations

- US Chamber of Commerce Coalition Against Counterfeiting and Piracy (CACP)
- Semiconductor Industry Association (SIA) Anticounterfeiting Task Force (ACTF)
- SAE G-19 Counterfeit Electronic Parts Technical Committee
- Center for Advanced Lifecycle Engineering (CALCE)
- Surface Mount Technology Association (SMTA)
- TechAmerica G-12 Counterfeit Task Group
- Aerospace Industries Association (AIA) Counterfeit Parts Integrated Process Team
- International Microelectronics and Packaging Society (IMAPS)
- Components Technology Institute (CTI)
- NASA Quality Leadership Forum (QLF)
- Independent Distributors of Electronics Association (IDEA)
- ERAI
- SEMI
- DoD trusted Defense Systems Workshop
- DoD Trusted Foundry Program
- Defense Logistics Agency (DLA) Counterfeit Parts Integrated Process Team (IPT)

COUNTERFEIT PARTS PRESENTATIONS

- **Fraud Detection Awareness** – Roger Moerman , Technical Services Associates & Thomas Williams, Department of Energy
- **Legal Issues Surrounding Fraud** – Monica Aquino-Thieman, NASA Office of General Counsel
- **Suspected Unapproved Parts Program** – Beverly Sharkey, Federal Aviation Administration (FAA)
- **EEE Parts Quality Concerns – Counterfeiting, Lead-Free Solder, Tin Whiskers** – Phil Zueleta, JPL
- **ERAI Role in Prevention of Counterfeit Parts** – Mark Snider, ERAI
- **Counterfeit Parts Standard** – Phil Zueleta, JPL
- **Using a Supplier for Protection of Counterfeit Parts** – Robb Hammond, AERI
- **Counterfeit Components Avoidance** – Leon Hamiter, CTI
- **Counterfeit Electrical, Electronic, and Electromechanical (EEE) Parts Panel** –

  Michael Sampson, Goddard Space Flight Center (GSFC);
  John O'Boyle, QP Semiconductor, Inc.;
  Henry Livingston, BAE SYSTEMS;
  David Meshel, Aerospace Corporation;
  Charlie Whitmeyer, Orbital Sciences Corporation;
  Debra Eggeman, Independent Distributors of Electronics Association (IDEA)

Training Opportunities

IDEA-ICE-3000

Professional Inspector's Certification Exam

Available to Employees of:

- IDEA Member Companies
- OEMs
- CM/EMS'

The IDEA Professional Inspector's Certification Exam is designed to demonstrate inspection competency for the benefit of all stakeholders. Successful examination provides the employee and the employer with a heightened degree of confidence in the basic working knowledge and resource-ability of the inspector.

IDEA Members $ 200.00 USD	Add to Cart
OEM's/CM's/EMS' $ 395.00 USD	Add to Cart
IDEA Member Exam Renew $ 100.00 USD	Add to Cart
Click "View Cart" to checkout	View Cart

When personnel who conduct visual inspection of product from the excess market have been certified, the company's stakeholders are provided objective evidence of inspection competency and therefore reason for increased confidence that customer satisfaction will be achieved and further offer increased marketability of products and services.

Upon successfully passing the IDEA Professional Inspector's Exam (IDEA-ICE-3000) the candidate will be awarded a certificate stating that the individual has passed the exam and their name will be maintained on record at IDEA as having met this achievement.

Training (cont)

Counterfeit Parts Avoidance Training

Counterfeit Parts in the News

- In 2009, Acting Administrator Christopher Scolese disclosed to Congress that counterfeit parts are a significant cause of budget over-runs for NASA
  - Estimated cost to NASA - *unknown*
- In late 2007, the US Patent and Trademark Office estimated that counterfeiting and piracy drain about $250 billion out of the US economy each year along with 750,000 jobs
- Counterfeit EEE parts comprise about 10% of the parts in the supply chain
- In December 2008, four executives at Western Titanium, Inc were indicted for fraud
- US Dept of Commerce Bureau of Industry and Security survey reveals China as biggest geographical source of counterfeit electronic parts

Class Date and Time

- The QLF class is scheduled for September 29 2009, 1:00 – 5:00 p.m.
- Enrollment requests should be submitted to Diana Shellman

Please contact
Katherine Whittington
Katherine.V.Whittington@jpl.nasa.gov
or 818.354.8749
for information about the class content or related questions.

Class Details

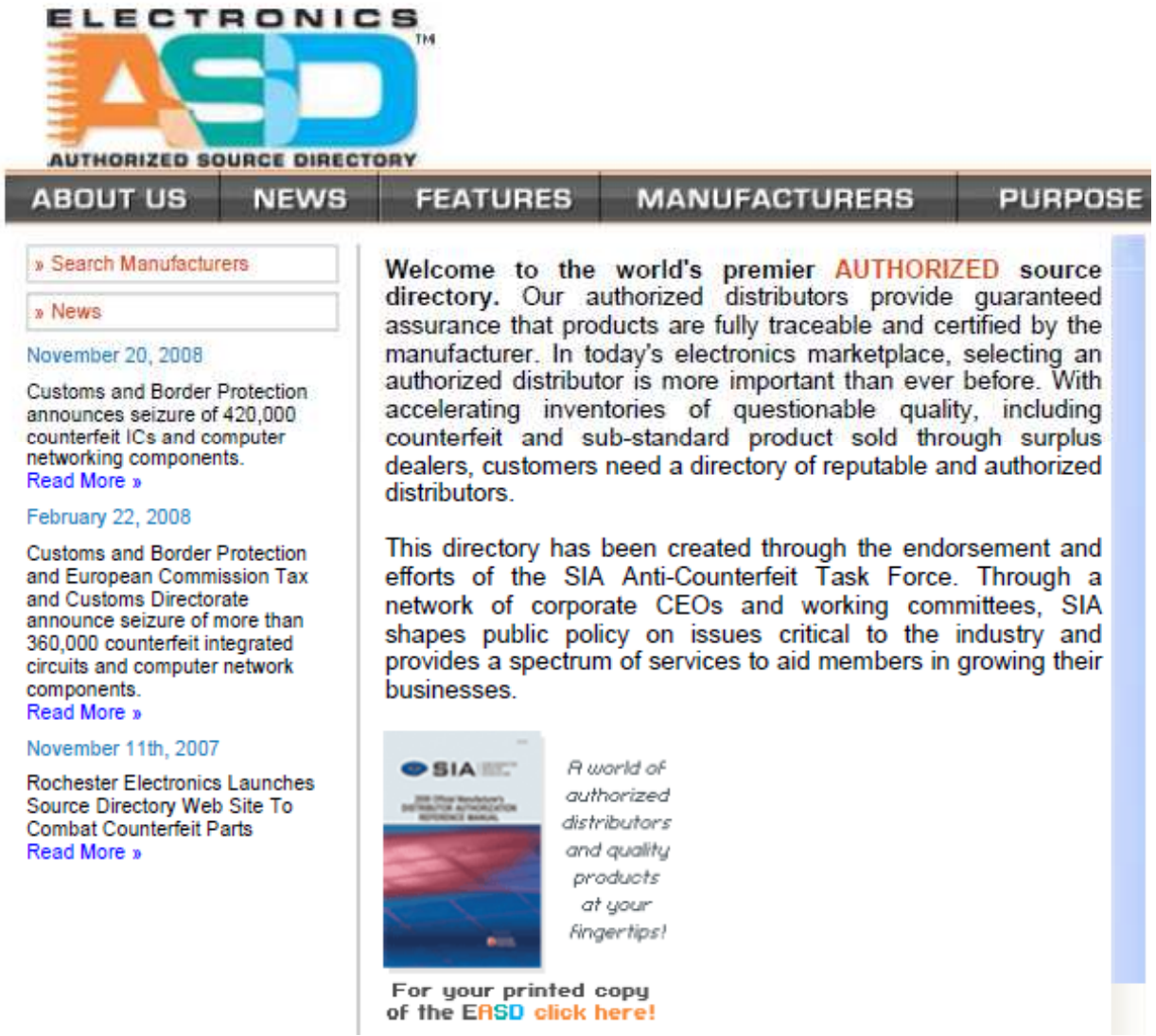
Class Objectives

- To learn about counterfeit parts and why they are a significant risk.
- To learn inspection methods to be used for the detection and avoidance of counterfeit parts.
- To mitigate the risks of acquiring counterfeit parts and to eliminate the risk of introducing counterfeit parts into flight hardware.
- To apply inspection techniques during an individual hands-on examination of counterfeit EEE parts, with microscopes.

4-hour class is for anyone who works with EEE parts and includes the following:

- Terms and Definitions Overview
- Counterfeit Parts in the Industry
- JPL's Counterfeit Parts Mitigation Strategy
- Best Industry Practices
- Case Studies of Counterfeit Investigations
- Hands-On Training and Written Exam

Resources


ELECTRONICS
ASD™
AUTHORIZED SOURCE DIRECTORY
ABOUT US
NEWS
FEATURES
MANUFACTURERS
PURPOSE
» Search Manufacturers
» News
November 20, 2008
Customs and Border Protection announces seizure of 420,000 counterfeit ICs and computer networking components.
Read More »
February 22, 2008
Customs and Border Protection and European Commission Tax and Customs Directorate announce seizure of more than 360,000 counterfeit integrated circuits and computer network components.
Read More »
November 11th, 2007
Rochester Electronics Launches Source Directory Web Site To Combat Counterfeit Parts
Read More »
Welcome to the world's premier AUTHORIZED source directory. Our authorized distributors provide guaranteed assurance that products are fully traceable and certified by the manufacturer. In today's electronics marketplace, selecting an authorized distributor is more important than ever before. With accelerating inventories of questionable quality, including counterfeit and sub-standard product sold through surplus dealers, customers need a directory of reputable and authorized distributors.
This directory has been created through the endorsement and efforts of the SIA Anti-Counterfeit Task Force. Through a network of corporate CEOs and working committees, SIA shapes public policy on issues critical to the industry and provides a spectrum of services to aid members in growing their businesses.
SIA
A world of authorized distributors and quality products at your fingertips!
For your printed copy of the EASD click here!

Resources (cont)

Welcome to the DMSMS & Standardization Conference 2009

The theme for this year's conference is: New Directions and Challenges. The focus areas are: Strategic Partnerships, Visibility into Total Ownership Costs, Opportunities for Partnering, and Standardization Enablers.

A Message from the Chairman

As this year's Chairman, I would like to invite you to participate in the DMSMS and Standardization 2009 Conference. With a new administration taking the helm of the federal government, there will be change. The theme of this year's conference - "New Directions and Challenges" - will focus on what changes to expect and how these changes will affect the DMSMS and standardization communities.

The target audiences for this conference are DMSMS and standardization professionals who wish to hone their skills and be a part of shaping the future of DoD acquisition and sustainment policies. In addition to a full day of tutorials taught by some of the top experts in government and industry and hands-on experience with some of the latest automated information tools, this conference gives attendees access to the new incoming DoD acquisition and sustainment leadership and a chance to hear first hand about their goals, objectives, and direction.

After the incoming DoD leadership has set the stage for our new directions and challenges, there will be workshops and discussion panels to allow audience participation and input into future DMSMS and standardization policies, procedures, guidance, and automated tools. We have also invited an outstanding array of experts to share their experiences through technical presentations on how they have successfully addressed the challenges of obsolescence, counterfeiting, standardization, parts management, lead-free, and many other related technical issues.

SD-22

Diminishing Manufacturing Sources and Material Shortages (DMSMS) Guidebook

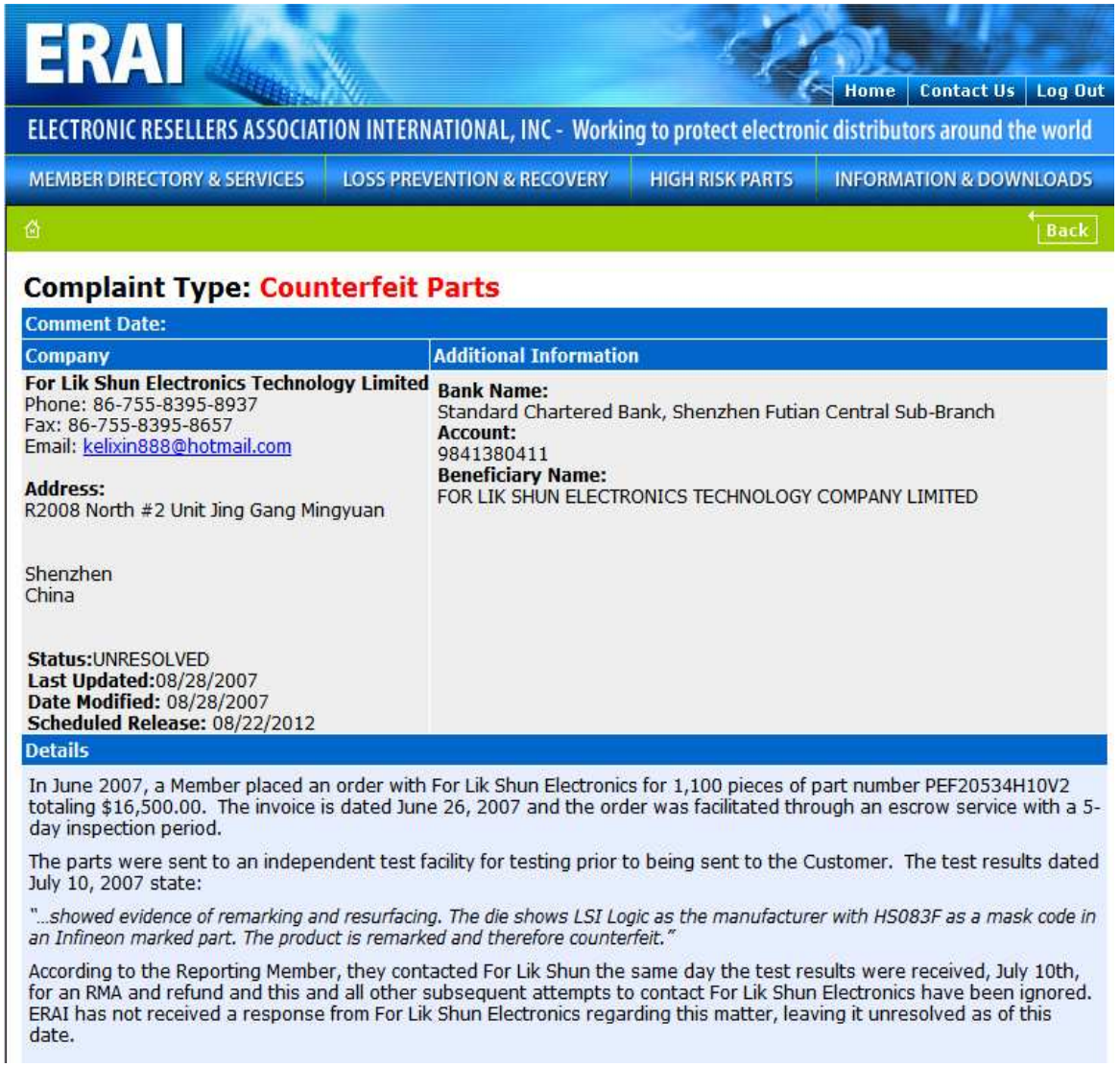
Office of the Under Secretary of Defense
Acquisition, Technology, & Logistics

November 1, 2006

SDMP

Resources (cont)

Resources (cont)



ERAI

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ELECTRONIC RESELLERS ASSOCIATION INTERNATIONAL, INC - Working to protect electronic distributors around the world

MEMBER DIRECTORY & SERVICES | LOSS PREVENTION & RECOVERY | HIGH RISK PARTS | INFORMATION & DOWNLOADS

Back

Complaint Type: Counterfeit Parts

Comment Date:

Company	Additional Information
For Lik Shun Electronics Technology Limited Phone: 86-755-8395-8937 Fax: 86-755-8395-8657 Email: kelixin888@hotmail.com **Address:** R2008 North #2 Unit Jing Gang Mingyuan Shenzhen China **Status:**UNRESOLVED **Last Updated:**08/28/2007 **Date Modified:** 08/28/2007 **Scheduled Release:** 08/22/2012	**Bank Name:** Standard Chartered Bank, Shenzhen Futian Central Sub-Branch **Account:** 9841380411 **Beneficiary Name:** FOR LIK SHUN ELECTRONICS TECHNOLOGY COMPANY LIMITED

Details

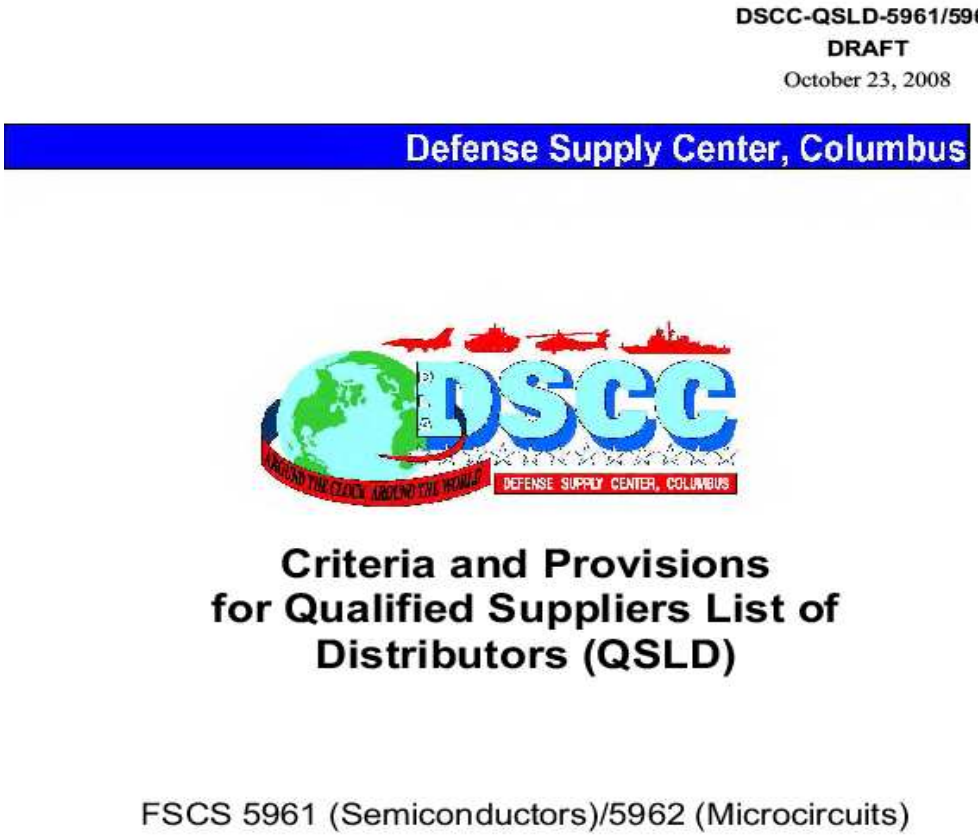
In June 2007, a Member placed an order with For Lik Shun Electronics for 1,100 pieces of part number PEF20534H10V2 totaling $16,500.00. The invoice is dated June 26, 2007 and the order was facilitated through an escrow service with a 5-day inspection period.

The parts were sent to an independent test facility for testing prior to being sent to the Customer. The test results dated July 10, 2007 state:

"...showed evidence of remarking and resurfacing. The die shows LSI Logic as the manufacturer with HS083F as a mask code in an Infineon marked part. The product is remarked and therefore counterfeit."

According to the Reporting Member, they contacted For Lik Shun the same day the test results were received, July 10th, for an RMA and refund and this and all other subsequent attempts to contact For Lik Shun Electronics have been ignored. ERAI has not received a response from For Lik Shun Electronics regarding this matter, leaving it unresolved as of this date.

Resources (cont)


DSCC-QSLD-5961/5962
DRAFT
October 23, 2008

Defense Supply Center, Columbus

DSCC

DEFENSE SUPPLY CENTER, COLUMBUS

Criteria and Provisions
for Qualified Suppliers List of
Distributors (QSLD)

FSCS 5961 (Semiconductors)/5962 (Microcircuits)

- Pre-qualified distributors
- Semiconductors and Microcircuits
- Distributors with demonstrated quality assurance practices
- Qualification based on JESD31 QMS requirements, e.g.:
  - Traceability
  - Certificate of Compliance
  - Handling and storage

US Chamber of Commerce

Coalition Against Counterfeiting and Piracy (CACP)

CACP

Coalition Against Counterfeiting and Piracy

To fight the growing threat of counterfeiting and piracy to the economy, jobs, and consumer health and safety, the business community, led by the U.S. Chamber of Commerce's Global Intellectual Property Center, organized itself through a broad-based business coalition, the Coalition Against Counterfeiting and Piracy (CACP).

Formed in 2004, the CACP has grown to more than 600 members, making it the largest business coalition of its kind. The coalition is committed to increasing the understanding of the negative impact of counterfeiting and piracy and to finding real solutions by working with governments, industry, opinion leaders, the media, and consumers. This year, the CACP is focusing on a few primary goals, which we believe will make a measurable impact in the fight against counterfeiting and piracy.

2009 Goals:

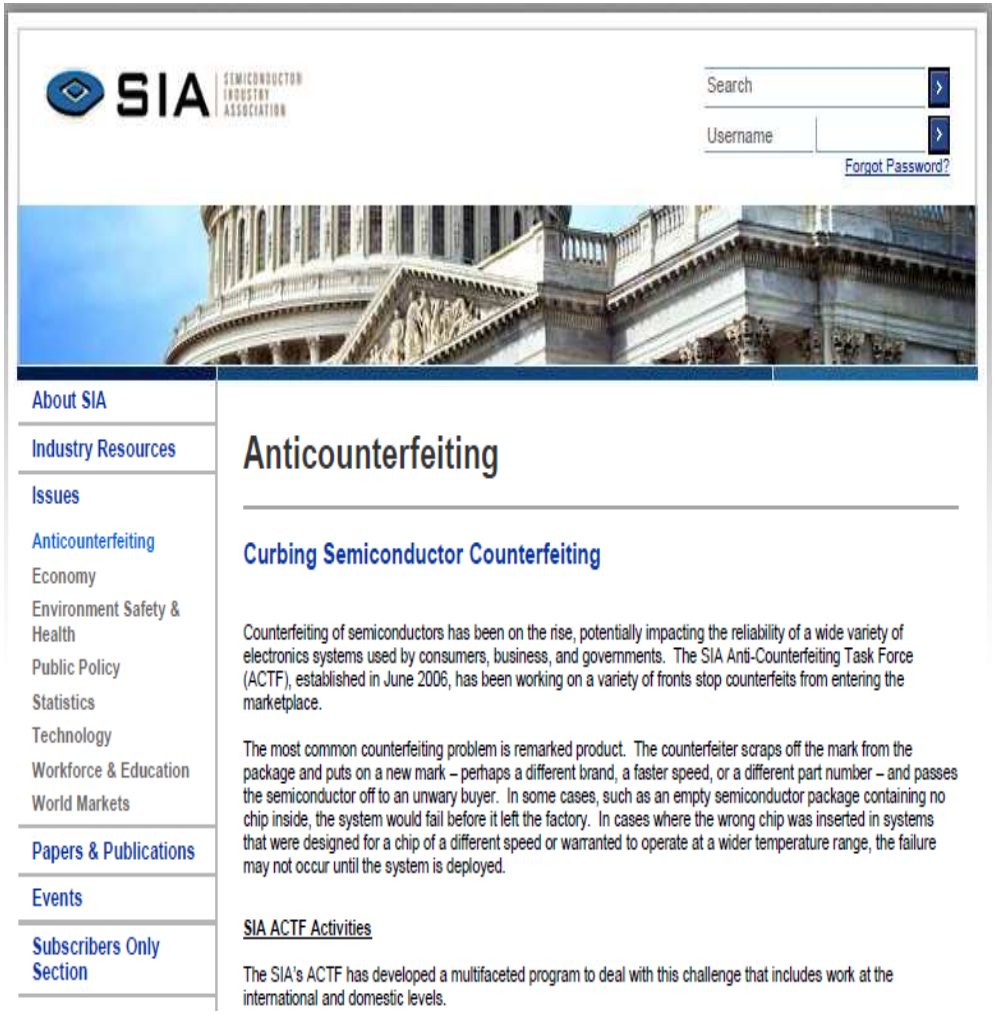
- Pass, fund and implement all components of the Campaign to Protect America. (Learn more)
- Strengthen state and local anti-counterfeiting and piracy enforcement efforts. (Learn more)
- Conclude a strong and enforceable ACTA and improve existing trade policy tools. (Learn more)
- Promote industry-led, market based, technological solutions to intellectual property protection by all industries involved in the manufacture, distribution and marketing of IP-based products and services.

Upcoming Events

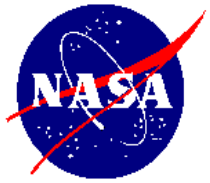
October CACP Meeting
October 9, 2009
Briefing Center
U.S. Chamber of Commerce
Click here for more information or to register
6th Annual Global Intellectual Property Center Summit
September 30, 2009
Hall of Flags
U.S. Chamber of Commerce
Click here for more information

Semiconductor Industry Association (SIA)

Anticounterfeiting Task Force (ACTF)



- **Goal is to stop counterfeit IC's from entering the global marketplace through education, awareness and enforcement**
- **Aligns with the China RECS program**
- **Aligns with the China QBPC**
- **Partnered with and trained US Customs in detection of counterfeit IC's**
- **Partnered with DoD, NASA, NCIS, FBI criminal investigators**
- **Actively Seeking cooperative efforts with United States, China and European Union officials.**
- **Partnered with the DOJ/DHS National IPR Coordinating Center to investigate and prosecute importers of counterfeit semiconductors**
- **Working with outside counsel to gather and collate industry data for case development and presentation to law enforcement and IPR Ctr**



Solutions

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

SAE AS5553

Issued Proposed Draft 2008-11-07

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

RATIONALE

This standard was created in response to a significant and increasing volume of counterfeit electronic parts entering the aerospace supply chain, posing significant performance, reliability, and safety risks.

This standard was created to provide uniform requirements, practices and methods to mitigate the risks of receiving and installing counterfeit electronic parts.

FOREWORD

To assure customer satisfaction, aerospace industry organizations must produce, and continually improve, safe, reliable products that meet or exceed customer and regulatory authority requirements. The globalization of the aerospace industry and the resulting diversity of regional/national requirements and expectations has complicated this objective. End-product organizations face the challenge of assuring the quality and integration of product purchased from suppliers throughout the world and at all levels within the supply chain. Aerospace suppliers and processors face the challenge of delivering product to multiple customers having varying quality expectations and requirements.

This document standardizes requirements, practices, and methods related to: parts management, supplier management, procurement, inspection, test/evaluation, and response strategies when suspect or confirmed counterfeit parts are discovered.

SAE G-19 Members

Representation from NASA, Aerospace Industry, Military, & Commercial

US Government Members …

- DSCC
- GIDEP
- MDA
- NASA
- US AF / NRO (Aerospace Corp.)
- US Army - AMRDEC
- US Navy - NAVAIR
- US Navy - NSWC
- US Navy - NCIS
- US Customs and Border Protection

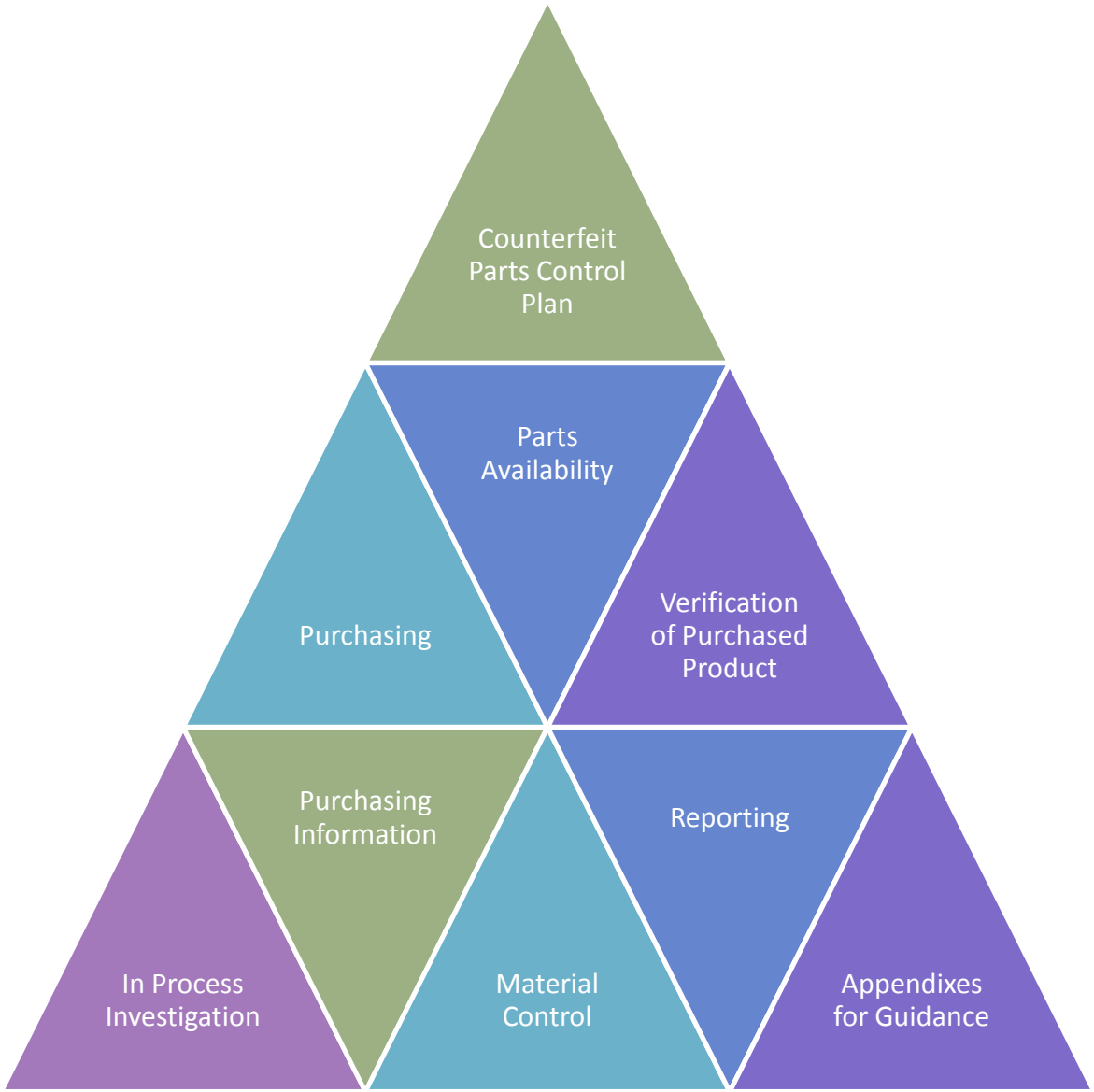
Industry Members …

- Arrow Zeus Electronics
- BAE Systems
- Boeing
- General Dynamics
- Jabil Circuits
- Lockheed Martin
- Maxim Integrated Products
- Northrop Grumman
- Orbital Sciences
- QP Semiconductor
- Raytheon

Industry Associations …

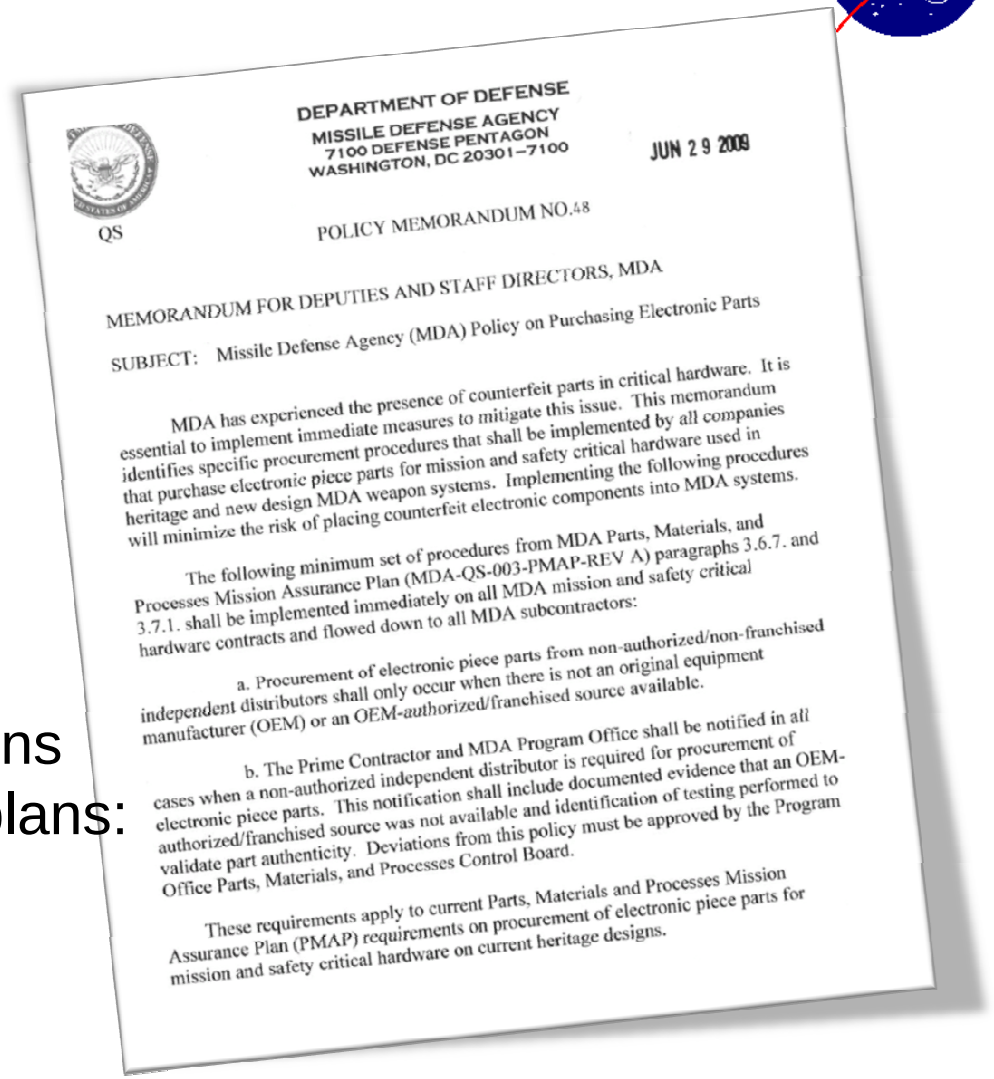
- Aerospace Industries Association (AIA)
- Best Manufacturing Practices Center of Excellence (BMPCOE)
- ERAI, Inc.
- Government Electronics & Information Technology Association (GEIA)
- Independent Distributors of Electronics Association (IDEA)

SAE AS5553 Requirements



Organizations Adopting SAE AS5553

- NASA Policy Directive
- Missile Defense Agency Policy Memorandum
- DOD adopts SAE AS5553 August 2009
- Private Industry Organizations with counterfeit avoidance plans:
  - BAE Systems
  - Orbital Sciences Corp.
  - Lockheed
  - L3 Communications



DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
7100 DEFENSE PENTAGON
WASHINGTON, DC 20301-7100

JUN 29 2009

QS

POLICY MEMORANDUM NO.48

MEMORANDUM FOR DEPUTIES AND STAFF DIRECTORS, MDA

SUBJECT: Missile Defense Agency (MDA) Policy on Purchasing Electronic Parts

MDA has experienced the presence of counterfeit parts in critical hardware. It is essential to implement immediate measures to mitigate this issue. This memorandum identifies specific procurement procedures that shall be implemented by all companies that purchase electronic piece parts for mission and safety critical hardware used in heritage and new design MDA weapon systems. Implementing the following procedures will minimize the risk of placing counterfeit electronic components into MDA systems.

The following minimum set of procedures from MDA Parts, Materials, and Processes Mission Assurance Plan (MDA-QS-003-PMAP-REV A) paragraphs 3.6.7. and 3.7.1. shall be implemented immediately on all MDA mission and safety critical hardware contracts and flowed down to all MDA subcontractors:

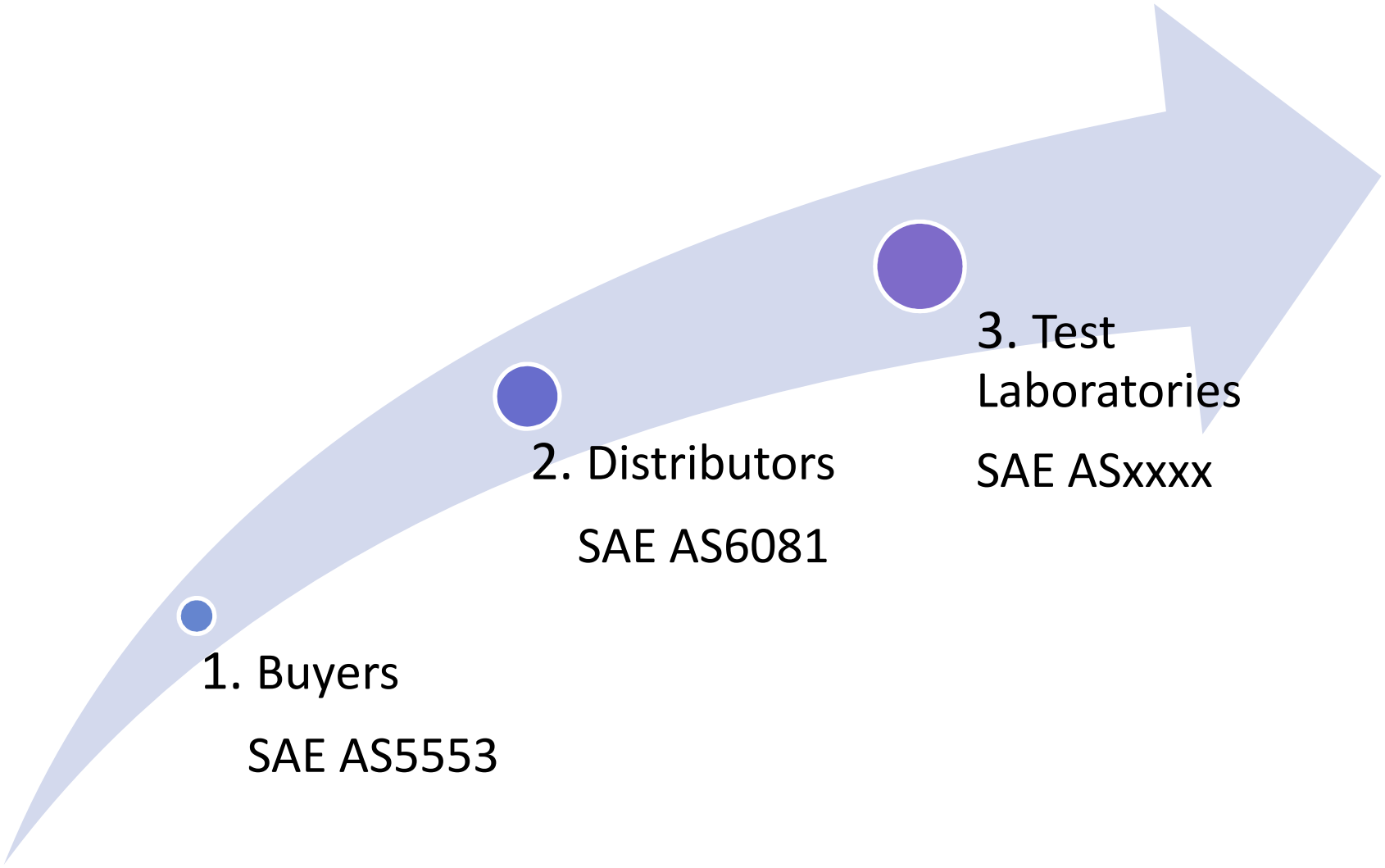
a. Procurement of electronic piece parts from non-authorized/non-franchised independent distributors shall only occur when there is not an original equipment manufacturer (OEM) or an OEM-authorized/franchised source available.

b. The Prime Contractor and MDA Program Office shall be notified in all cases when a non-authorized independent distributor is required for procurement of electronic piece parts. This notification shall include documented evidence that an OEM-authorized/franchised source was not available and identification of testing performed to validate part authenticity. Deviations from this policy must be approved by the Program Office Parts, Materials, and Processes Control Board.

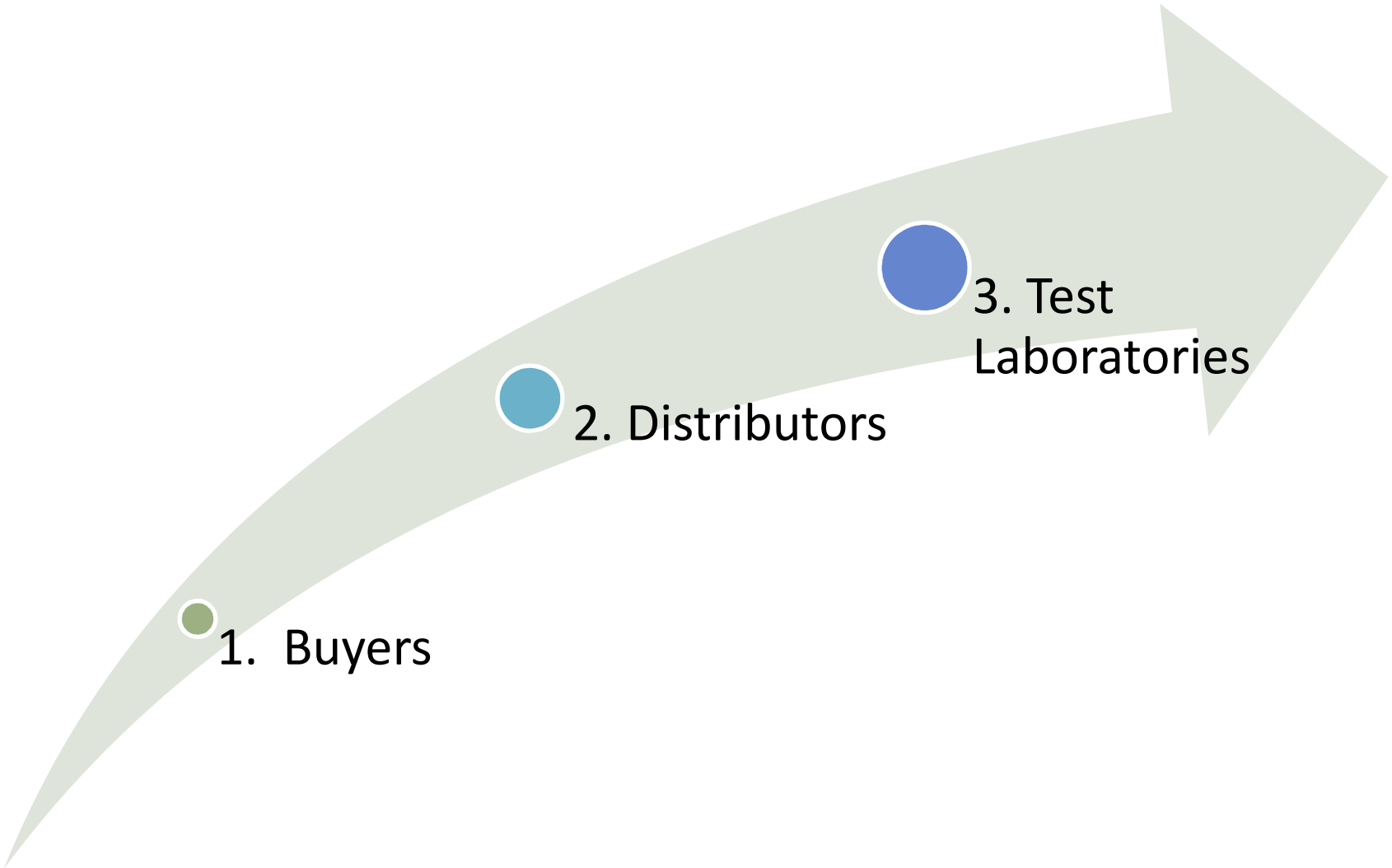
These requirements apply to current Parts, Materials and Processes Mission Assurance Plan (PMAP) requirements on procurement of electronic piece parts for mission and safety critical hardware on current heritage designs.

The Way Forward

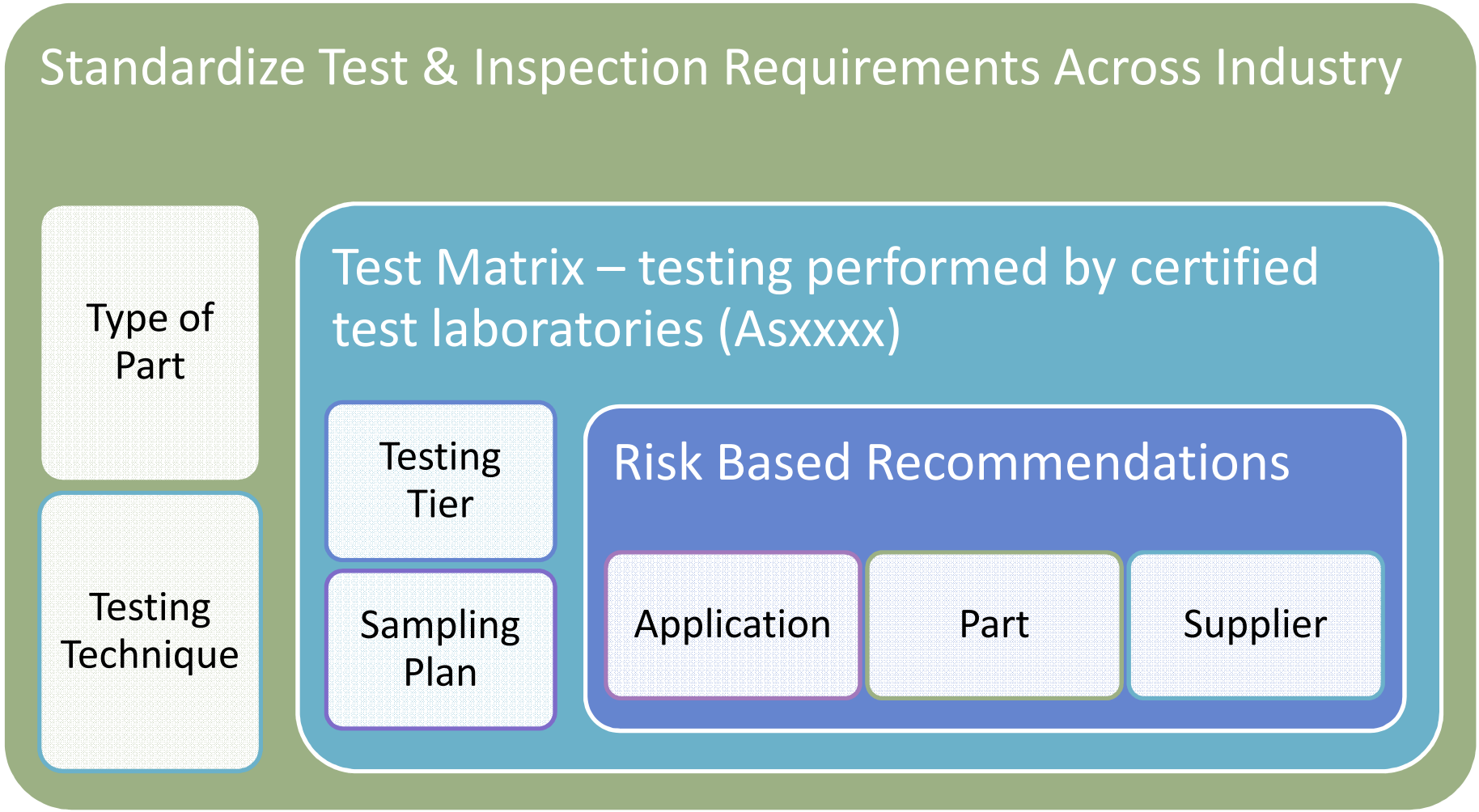
SAE G-19 Technical Standards



Accreditation/Certification



SAE G-19 Test & Inspection Matrix Subcommittee



System intended to create standardized testing methodology throughout industry

Testing Level Based on Risk

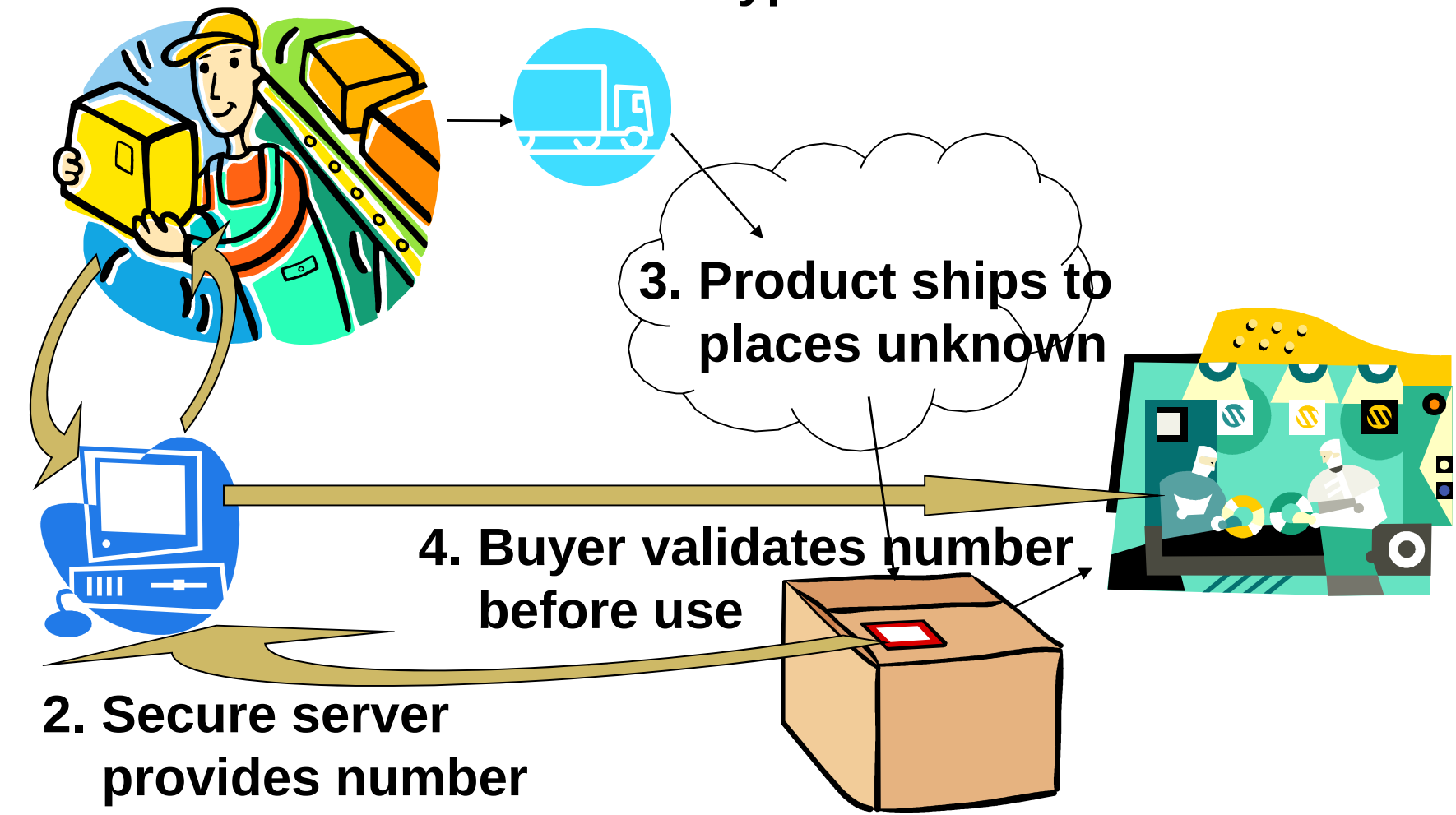
Level 0	•External Visual Inspection •Marking permanency •Internal Die De-cap and inspection •Optional: (X-RAY, XRF, Hermeticity, SAM, Solderability & others...)
Level 1	•25C limited DC testing at room temp •(Device pin DC characteristics)
Level 2	•DC parametric testing at 2 room temp •(Selected key DC datasheet parameters)
Level 3	•DC parametric testing & functionality at room temp •(Key DC datasheet parameters & basic device functionality)
Level 4	•DC parametric testing & AC parameters at room temp •(Key DC & AC datasheet parameters including device functionality)

Inspection & Test Matrix

Technique Category | Technique ->	External Visual exam	Physical dimensions	Real-time X-ray	XRF Analysis	Mark Perm	Resistance to Solvents (for evidence of re-marking)	Internal Visual Exam	DPA	Basic DC Test	Min Func Test 25C
Authenticity validation	yes - 100%	yes - sample	yes - 100%	yes - sample		yes - sample	yes - sample		yes - 100%	yes - 100%
Quality conformance/validation	yes - sample	yes - sample	yes - sample	yes - sample	yes - sample		no		yes - sample	yes - sample
Reliability assurance							no	yes - sample	yes - 100%	yes - 100%
Component Type										
Resistors - fixed value										
Resistors network - array										
Variable resistors										
Heating element/Resistance wire										
Thernistors										
Veristor										
Capacitor - fixed capacitance										
Capacitor network - array										
Variable capacitor										
Varicap diode										
Inductor, coil, choke										
Variable inductor/Saturable Inductor										

Authentication Service Provider Model

SEMI T20 System Architecture for Preventing/Detecting Semiconductor Counterfeit Products



Customs and Border Protection

NEWS

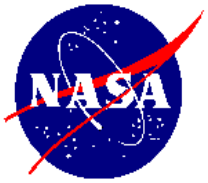
For Immediate Release:
September 22, 2009

USTR, U.S. Commerce Department, U.S. Customs and Border Protection and International Customs Experts Hold First Meeting to Address Semiconductor Counterfeiting

JEJU, KOREA – Today staff from the Office of the United States Trade Representative, U.S. Commerce Department and U.S. Customs and Border Protection concluded the first-ever meeting with customs authorities from all six major semiconductor producing economies to discuss the problems posed by trade in counterfeit semiconductor products. Customs experts from China, Chinese Taipei, the European Union, Japan, Korea and the United States convened in Korea before the launch of the annual Governments/Authorities Meeting on Semiconductors (GAMS), with representatives of their respective industries and trade ministry officials. The two-day meeting was an important opportunity for the participants to discuss counterfeiting of semiconductor products.

Help from Above

PRO-IP Act



Phone: 202-463-5682 | 888-249-NEWS | E-mail: press@uschamber.com

U.S. CHAMBER OF COMMERCE NEWS

Global Intellectual Property Center

FOR IMMEDIATE RELEASE October 13, 2008 Contact: Alex Burgos 202-463-5831

U.S. Chamber Celebrates Enactment of Intellectual Property Law

Donohue hails victory for America's innovation economy

WASHINGTON, D.C.—The U.S. Chamber of Commerce today hailed the PRO-IP Act becoming law, a major step toward improving the federal government's capacity to protect intellectual property (IP).

"For nearly eight years, this Administration has devoted considerable resources and energy to protect American innovation and intellectual property," said Tom Donohue, president and CEO of the U.S. Chamber of Commerce, following President Bush signing the Prioritizing Resources and Organization for Intellectual Property Act. "By becoming law, the PRO-IP Act sends the message to IP criminals everywhere that the U.S. will go the extra mile to protect American innovation. Congress and President Bush have done their part to support America's innovators, workers and consumers, who all depend on intellectual property."

The PRO-IP Act toughens civil and criminal laws against counterfeiting and piracy, provides enhanced IP enforcement and prosecutorial resources, and improves IP coordination within the executive branch. S. 3325 was introduced in July 2008 by Senators Patrick Leahy (D-VT) and Arlen Specter (R-PA), and passed the Senate by unanimous consent. The U.S. House of Representatives, which earlier passed a similar bill championed by Judiciary Chairman John Conyers (D-MI) and Ranking Member Lamar Smith (R-TX), approved the bill in September.

"The PRO-IP Act marks a signature achievement in protecting intellectual property," added Donohue. "We look forward to working with the next Congress and Administration to fully implement this law."

Intellectual property in the U.S. is worth more than $5 trillion, accounts for more than half of all U.S. exports, and helps drive 40% of U.S. economic growth. Intellectual property-intensive industries employ an estimated 18 million Americans.

FAR Case 2008-019

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DEPARTMENT OF DEFENSE

GENERAL SERVICES ADMINISTRATION

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

48 CFR Parts **2**, 4, 12, 39, 52

[FAR Case 2008-019; Docket 2008-XXXX; Sequence X]
RIN: 9000-XXXX

Federal Acquisition Regulation; FAR Case 2008-019;
Authentic Information Technology Products

AGENCIES: Department of Defense (DoD), General Services Administration (GSA), and National Aeronautics and Space Administration (NASA).

ACTION: Advance notice of proposed rulemaking; public meeting.

SUMMARY: The Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (the Councils) are seeking comments from both Government and industry on whether the Federal Acquisition Regulation should be revised to include a requirement that contractors selling information technology (IT) products (including computer hardware and software) represent that such products are authentic. The Councils are also interested in comments regarding contractors' liability if IT products sold to the Government, by contractors, are not authentic. Additionally, the Councils are seeking comments on whether

Preliminary Draft FAR Text

- Electronic Parts Procured as Discrete Units -

"All procurements for electrical, electronic, or electromechanical (EEE) parts that will be used in critical applications shall evaluate the risk of obtaining counterfeit parts and shall utilize an appropriate acquisition strategy to manage that risk. That strategy may include direct procurement of parts from OEMs or authorized suppliers; Government performed or approved tests and inspections to assure the authenticity of parts; and/ or an evaluation factor or criterion that assesses each non-authorized offeror's ability and practices to assure authenticity of parts. A non-authorized offeror's ability to assure authenticity of EEE parts includes the offeror's clear representation and demonstration that parts originate from an OEM and are not counterfeit. Representation is fulfilled in a supplier certificate of conformance, and demonstration is fulfilled by a copy of one or more of the following: 1) the OEM's original certificate of conformance, 2) records providing unbroken supply chain traceability to the OEM, 3) test and inspection records demonstrating authenticity of the parts."

Title 18, United States Code

- Proposed Legislation -

SEC.__ PREVENTION OF COUNTERFEITING OF ELECTRONIC COMPONENTS.

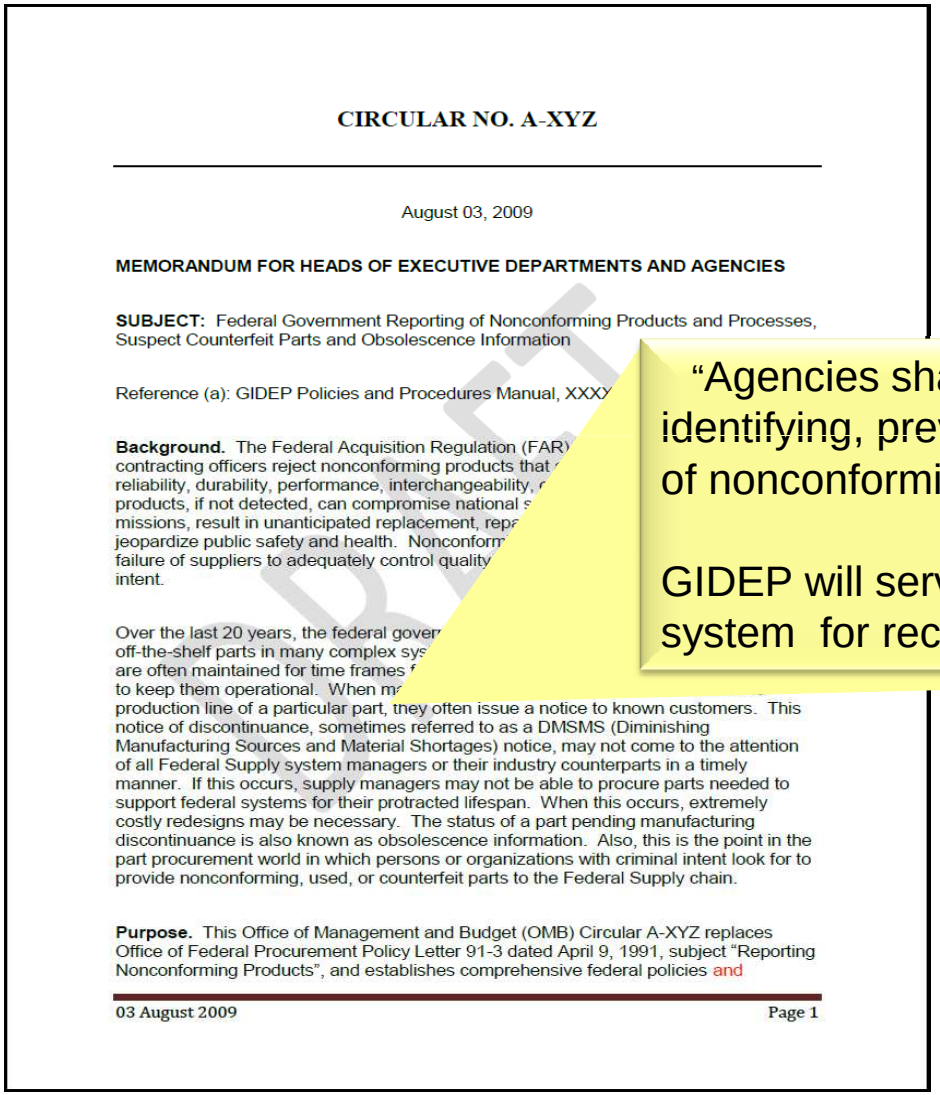
(a) AUTHORITY IN TITLE 18, UNITED STATES CODE.—

(1) IN GENERAL.—Chapter 25 of title 18, United States Code, is amended by inserting after section 514 the following new sections:

"§ 515. Counterfeit Electronic Parts Causing Loss of Life

"(a) Whoever knowingly delivers an end item, component, or part containing or consisting of a counterfeit electronic part to the Department of Defense or National Aeronautics and Space Administration for use in any national security system, weapons system, vessel, or vehicle, which after delivery causes the system, vessel, or vehicle to fail, or causes a disruption of performance, and that failure or disruption results in the loss of life, shall be punished as follows:

Draft OMB Circular
Mandatory GIDEP Reporting



CIRCULAR NO. A-XYZ

August 03, 2009

MEMORANDUM FOR HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

SUBJECT: Federal Government Reporting of Nonconforming Products and Processes, Suspect Counterfeit Parts and Obsolescence Information

Reference (a): GIDEP Policies and Procedures Manual, XXXX

Background. The Federal Acquisition Regulation (FAR) contracting officers reject nonconforming products that reliability, durability, performance, interchangeability, products, if not detected, can compromise national missions, result in unanticipated replacement, repa jeopardize public safety and health. Nonconform failure of suppliers to adequately control quality intent.

Over the last 20 years, the federal gover off-the-shelf parts in many complex sys are often maintained for time frames to keep them operational. When m production line of a particular part, they often issue a notice to known customers. This notice of discontinuance, sometimes referred to as a DMSMS (Diminishing Manufacturing Sources and Material Shortages) notice, may not come to the attention of all Federal Supply system managers or their industry counterparts in a timely manner. If this occurs, supply managers may not be able to procure parts needed to support federal systems for their protracted lifespan. When this occurs, extremely costly redesigns may be necessary. The status of a part pending manufacturing discontinuance is also known as obsolescence information. Also, this is the point in the part procurement world in which persons or organizations with criminal intent look for to provide nonconforming, used, or counterfeit parts to the Federal Supply chain.

Purpose. This Office of Management and Budget (OMB) Circular A-XYZ replaces Office of Federal Procurement Policy Letter 91-3 dated April 9, 1991, subject "Reporting Nonconforming Products", and establishes comprehensive federal policies and

03 August 2009 Page 1

"Agencies shall assess their programs for identifying, preventing and reporting the acquisition of nonconforming and suspect counterfeit products.

GIDEP will serve as the central data management system for receiving and disseminating information."

Report to Congress

IB

Union Calendar No. 99

111TH CONGRESS
1ST SESSION

H. R. 2701

[Report No. 111–186]

To authorize appropriations for fiscal year 2010 for intelligence and intelligence-related activities of the United States Government, the Community Management Account, and the Central Intelligence Agency Retirement and Disability System, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JUNE 4, 2009

Mr. REYES introduced the following bill; which was referred to the Select Committee on Intelligence (Permanent Select)

JUNE 26, 2009

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed

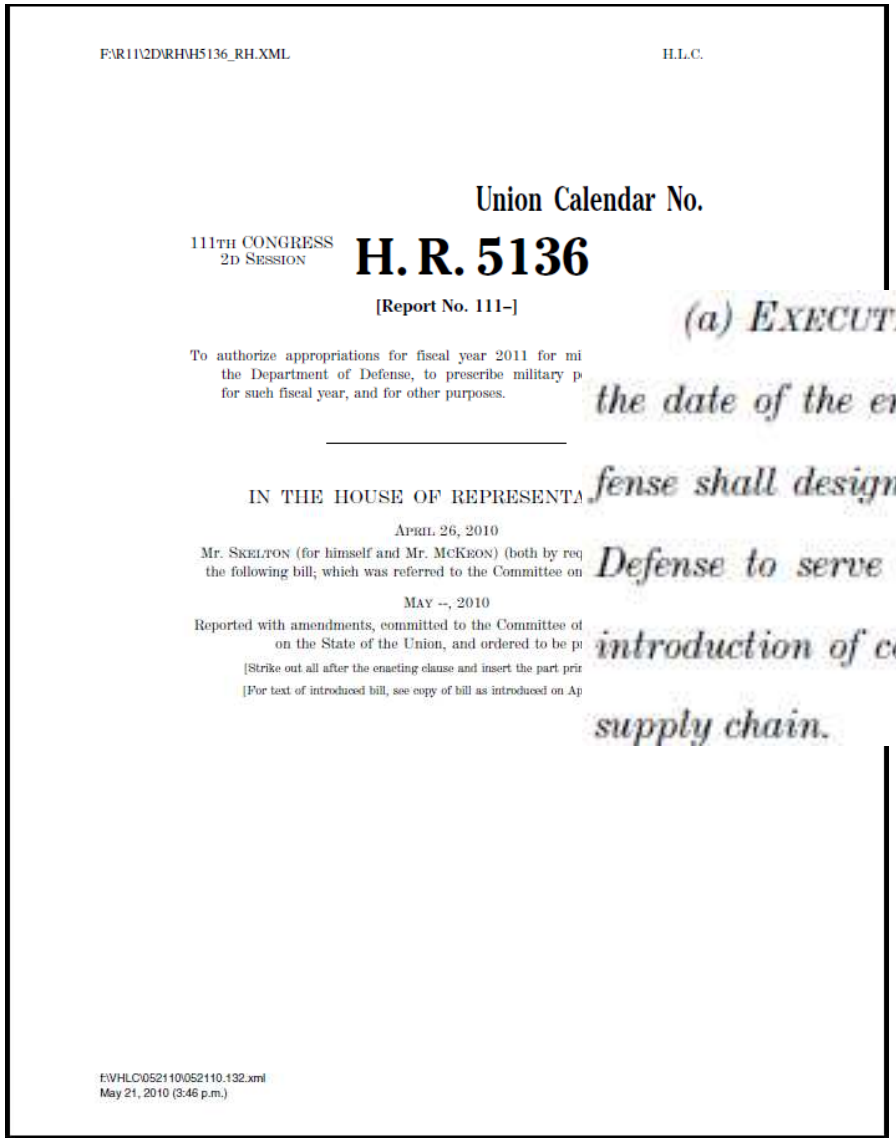
[Strike out all after the enacting clause and insert the part printed in italic]

[For text of introduced bill, see copy of bill as introduced on June 4, 2009]

SEC. 347. NATIONAL INTELLIGENCE ESTIMATE ON GLOBAL SUPPLY CHAIN VULNERABILITIES.

(a) REPORT.—Not later than one year after the date of the enactment of this Act, the Director of National Intelligence shall submit to Congress a National Intelligence Estimate or National Intelligence Assessment on the global supply chain to determine whether such supply chain poses a risk to defense and intelligence systems due to counterfeit components that may be defective or deliberately manipulated by a foreign government or a criminal organization.

2011 Defense Appropriation Bill



F:\R11\2D\RH\H5136_RH.XML H.L.C.

Union Calendar No.

111TH CONGRESS
2D SESSION

H. R. 5136

[Report No. 111–]

To authorize appropriations for fiscal year 2011 for mi
the Department of Defense, to prescribe military p
for such fiscal year, and for other purposes.

IN THE HOUSE OF REPRESENTA

APRIL 26, 2010

Mr. SKELTON (for himself and Mr. MCKEON) (both by req
the following bill; which was referred to the Committee on

MAY --, 2010

Reported with amendments, committed to the Committee of
on the State of the Union, and ordered to be p

[Strike out all after the enacting clause and insert the part prin

[For text of introduced bill, see copy of bill as introduced on Ap

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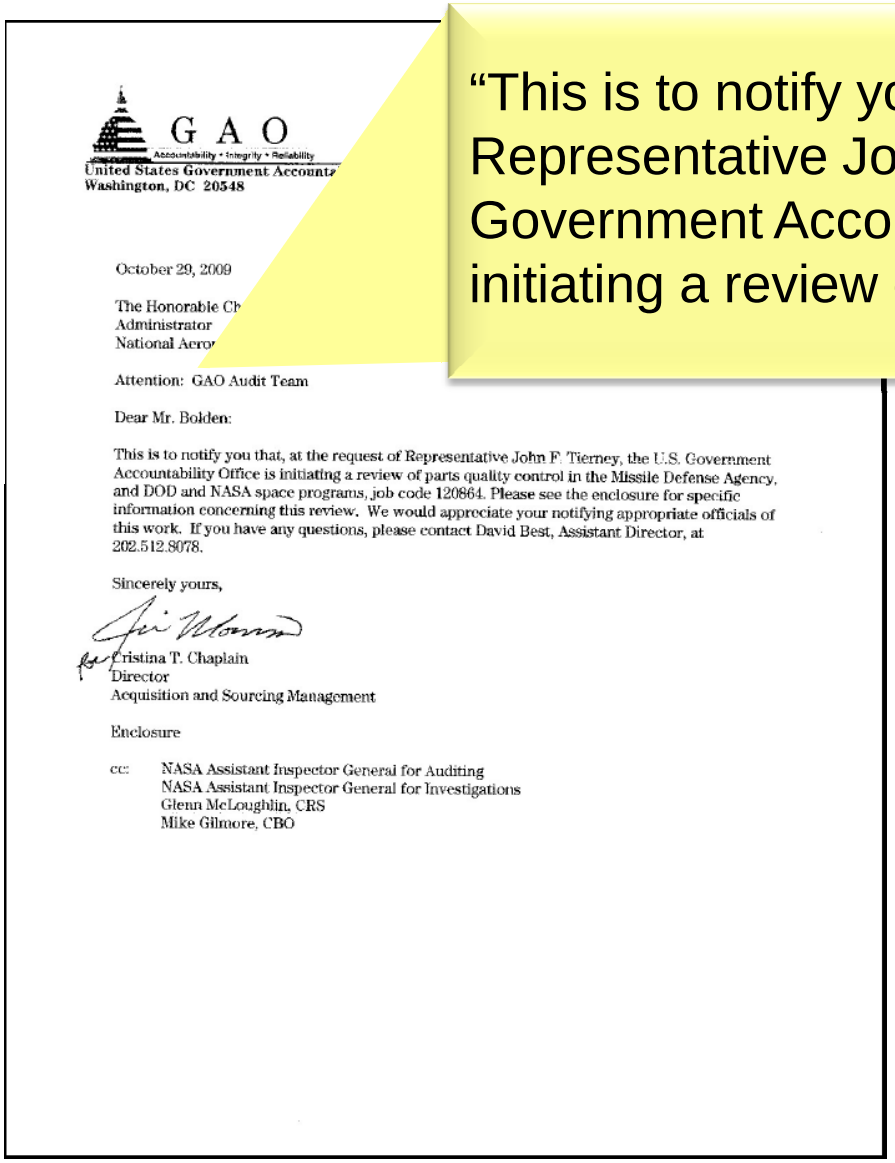
May 21, 2010 (3:46 p.m.)

(a) EXECUTIVE AGENT.—Not later than 90 days after the date of the enactment of this Act, the Secretary of Defense shall designate a senior official of the Department of Defense to serve as the executive agent for preventing the introduction of counterfeit microelectronics into the defense supply chain.

GAO Interest



GAO
Accountability * Integrity * Reliability
United States Government Accounta
Washington, DC 20548

October 29, 2009

The Honorable Ch
Administrator
National Aero

Attention: GAO Audit Team

Dear Mr. Bolden:

This is to notify you that, at the request of Representative John F. Tierney, the U.S. Government Accountability Office is initiating a review of parts quality control in the Missile Defense Agency, and DOD and NASA space programs, job code 120864. Please see the enclosure for specific information concerning this review. We would appreciate your notifying appropriate officials of this work. If you have any questions, please contact David Best, Assistant Director, at 202.512.8078.

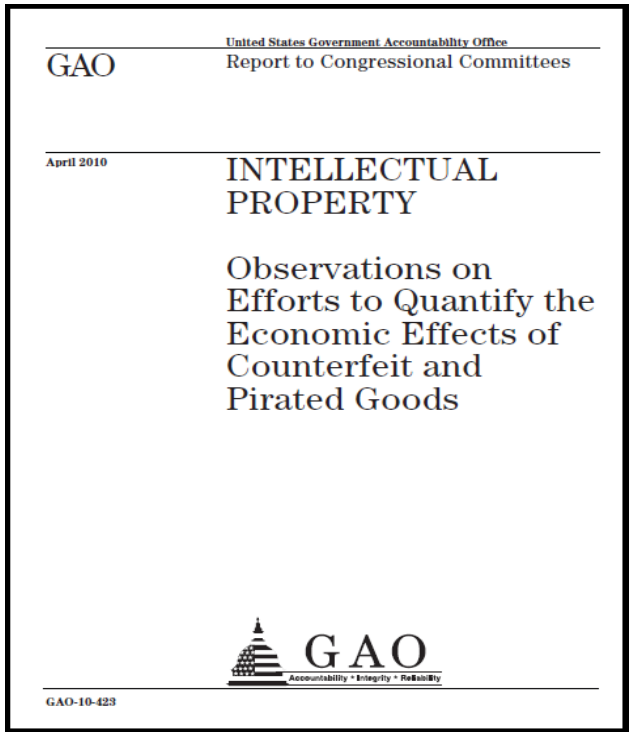
Sincerely yours,

Cristina T. Chaplain
Director
Acquisition and Sourcing Management

Enclosure

cc: NASA Assistant Inspector General for Auditing
NASA Assistant Inspector General for Investigations
Glenn McLoughlin, CRS
Mike Gilmore, CBO

"This is to notify you that, at the request of Representative John F. Tierney, the US Government Accountability Office is initiating a review of parts quality control..."



United States Government Accountability Office
GAO
Report to Congressional Committees

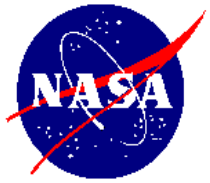
April 2010

INTELLECTUAL PROPERTY

Observations on Efforts to Quantify the Economic Effects of Counterfeit and Pirated Goods

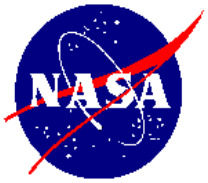
GAO
Accountability * Integrity * Reliability

GAO-10-423



Back-up Slides

Purchasing Process:



Source of Supply

- Determine risk of receiving counterfeit part…
- Actions may include surveys, audits, review…
- Specify a preference to procure directly from OCMs…

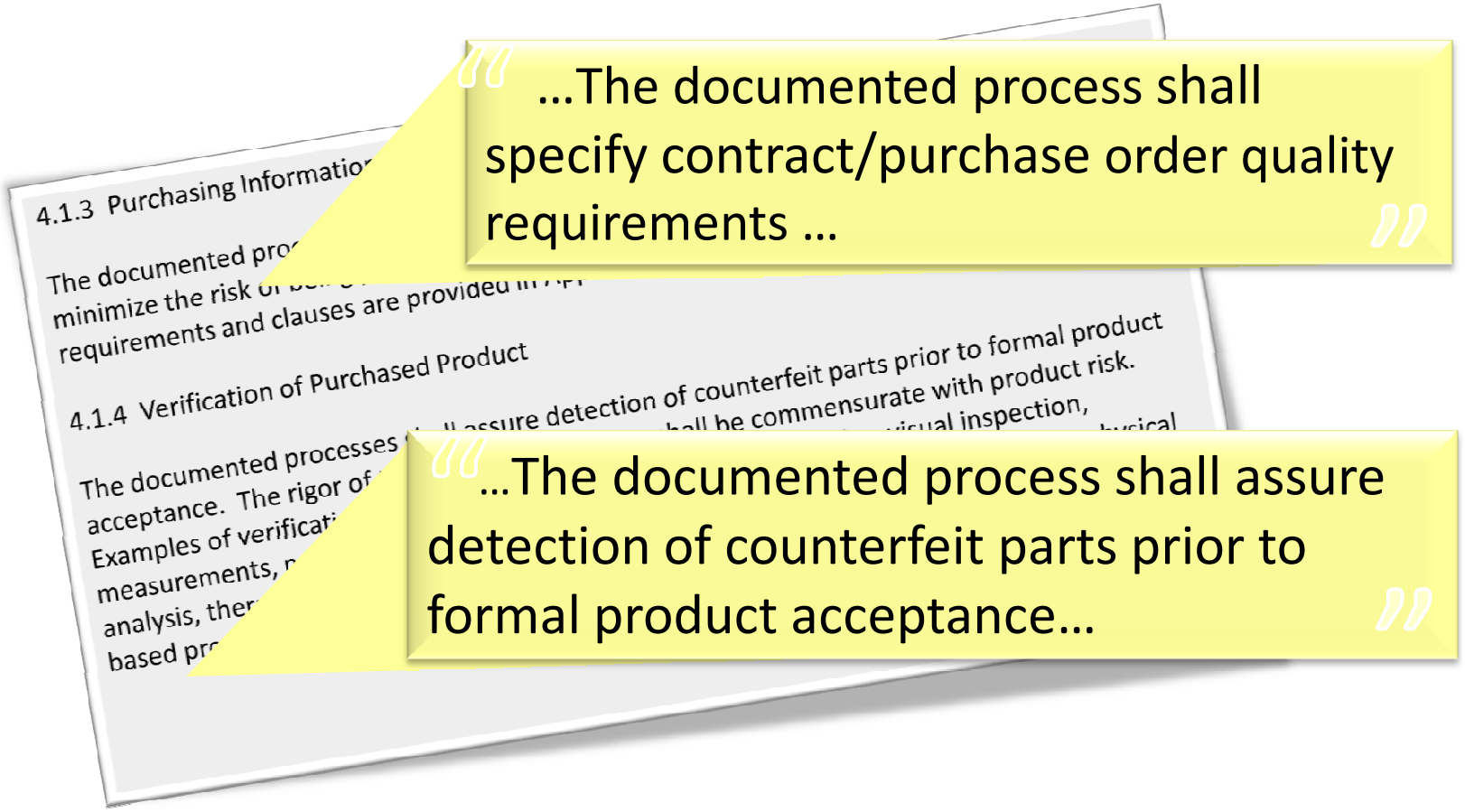
Approved Suppliers

- Maintain a register of approved suppliers
- Guidance on source selection and approval process
- Assure sources of supply are maintaining processes for counterfeit risk mitigation

Risk Mitigation

- Mitigate the risks of procuring counterfeit parts from sources other than OCMs…
- Specify supply chain traceability to the OCM…
- Specify flow down of applicable requirements to contractors and sub-contractors…

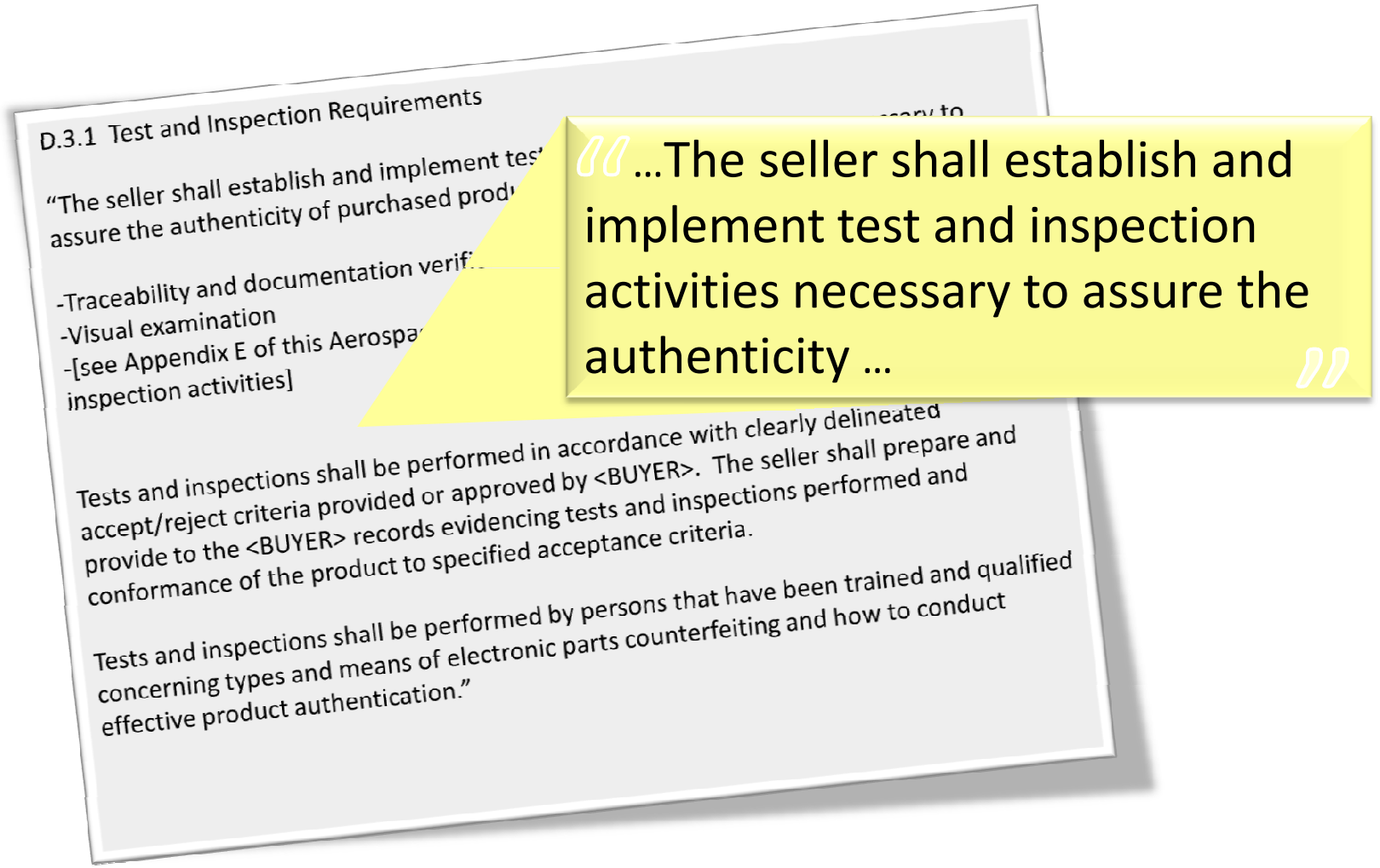
Purchasing Information
Purchasing Verification



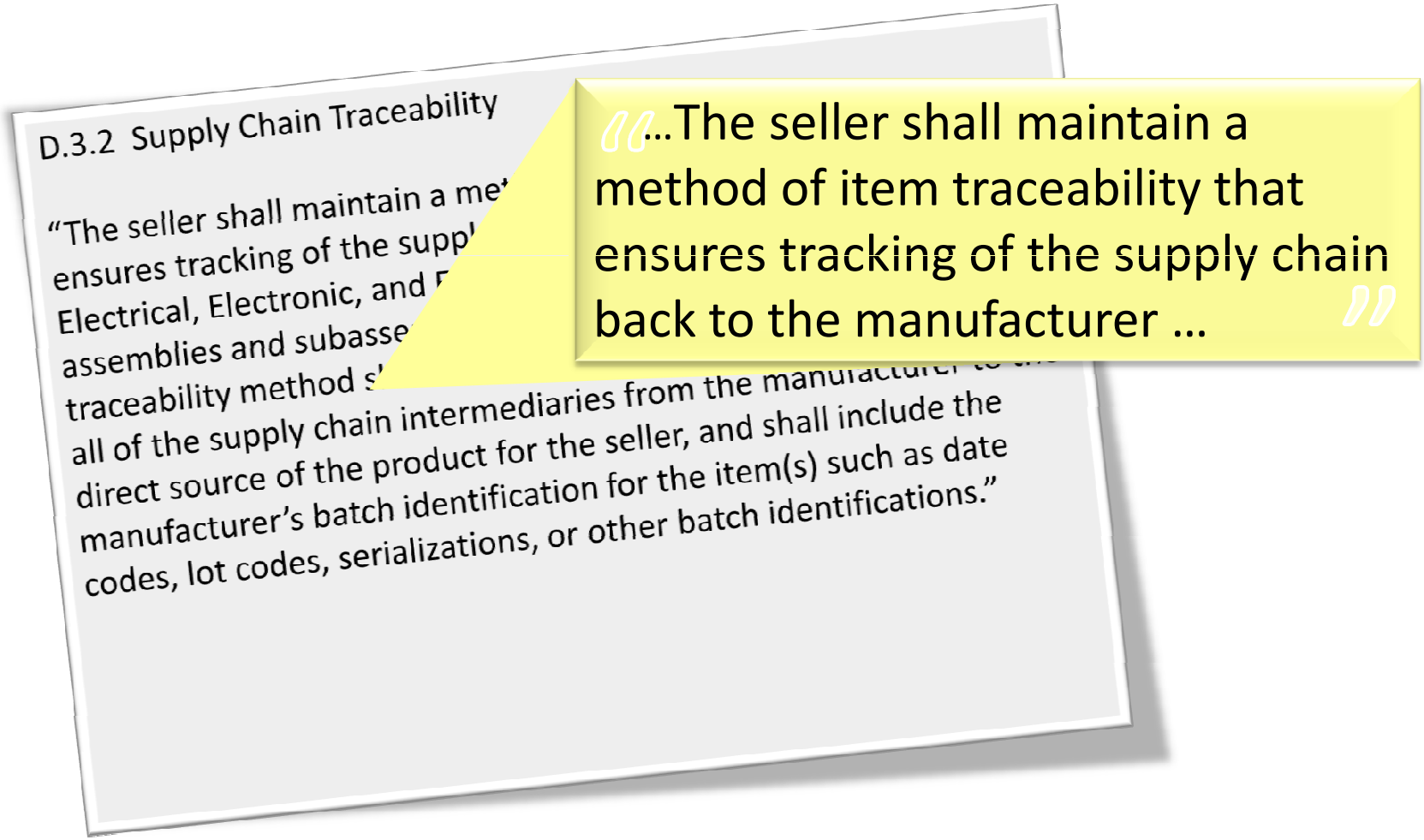
"…The documented process shall specify contract/purchase order quality requirements …"

"…The documented process shall assure detection of counterfeit parts prior to formal product acceptance…"

Procurement Clauses



Procurement Clauses



Procurement Clauses


D.3.3 Certificate of Conformance

"The seller shall approve, retai
Electromechanical (EEE) part

Manufactures' CoCs shal

a. Manufacturer

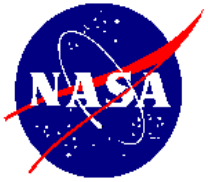
b. Manufact

c. Batch
serializations, or other batch

d. Signature or stamp with title of seller's authorized personnel signing the certificate.

NOTE: Distributors shall, in addition to the above, include their name for each part shipped."

"…The seller shall approve, retain, and provide copies of Electrical, Electronic, and Electromechanical (EEE) part Manufacturer Certificate of Conformance (CoC)…."



In Process Investigation

Shall address the detection, verification, and control of … counterfeit parts.

Material Control

Shall control … nonconforming parts from entering supply chain

Shall control counterfeit parts to preclude their use …

Reporting

Shall assure that all occurrences of counterfeit parts are reported…

SAE AS5553 Guidance

Risk Charts