



The Source for Critical Information and Insight™

Counterfeit Risk Mitigation



Parts Standardization & Management Committee
Fall 2011 Conference, Seattle
Sr. Director Product Development & Management, IHS



IHS – The Leading Information Provider

- Founded in 1959: To provide product catalogs for aerospace engineers
- Today: Leading global source of critical information and insight dedicated to providing the most complete and trusted information and expertise
- Employs 5,100 people in 30 countries

Strong, Growing Products and Financials:

- Revenue: \$1.3B (2010)
- **80% of global fortune 500 are our customers**
- **Strong A&D focus**

Areas of Expertise & Content

Energy & Power



Design & Supply Chain



Defense, Risk & Security



EHS & Sustainability



Country & Industry Forecasts

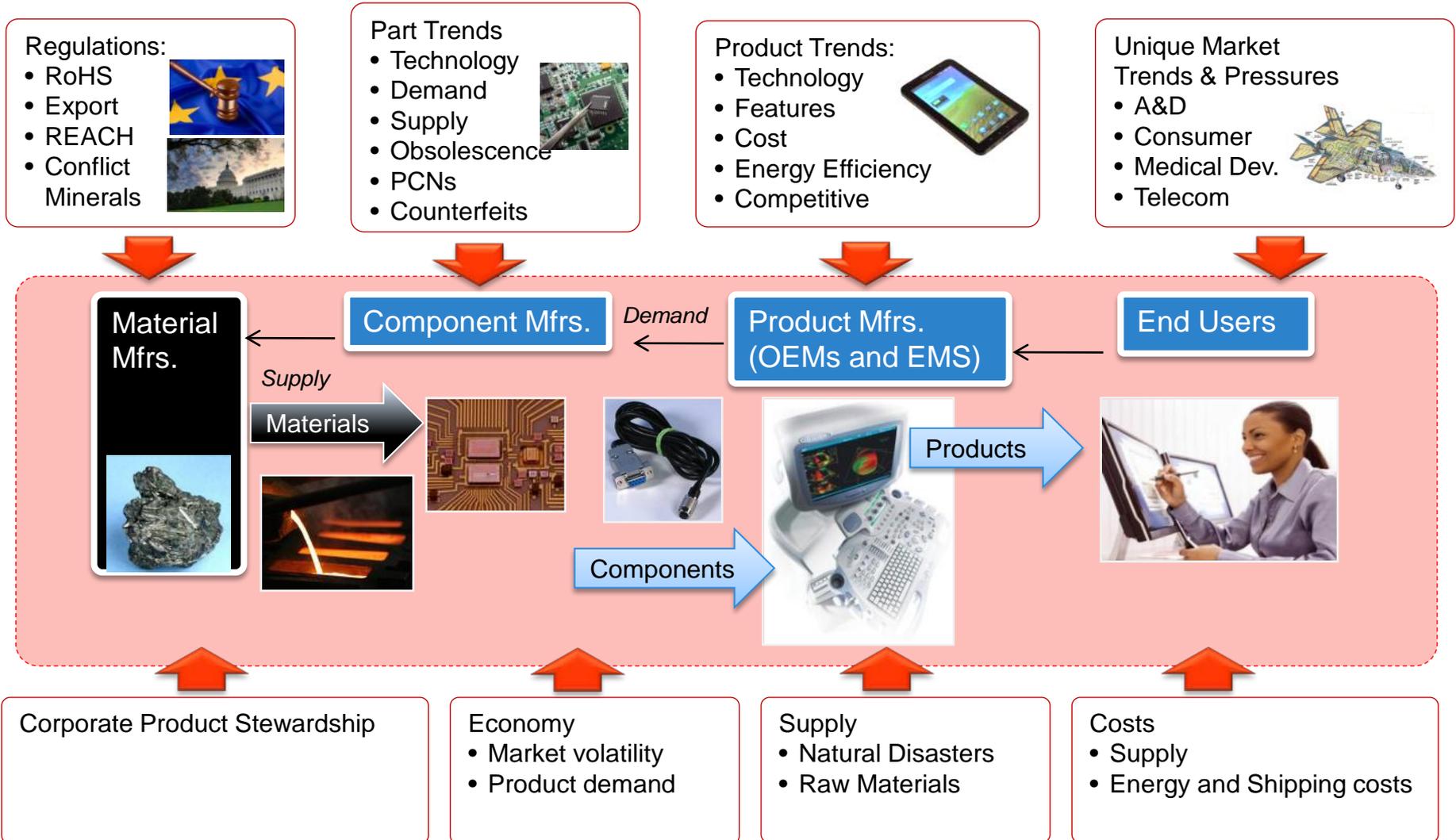


Commodities, Pricing & Cost



Dynamic Nature of Supply Chains

External forces impacting supply chains



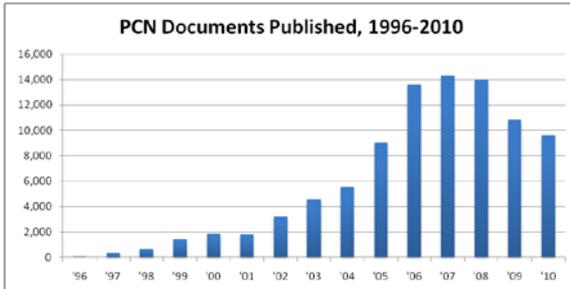
Dynamic Context



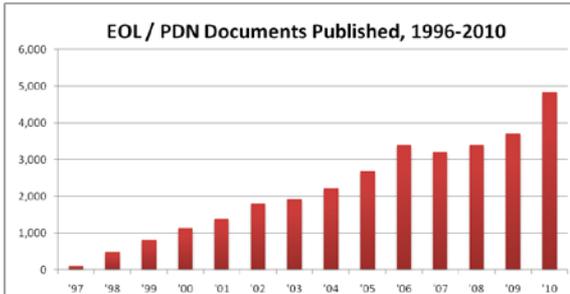
Dynamic Nature of Supply Chains

External forces impacting supply chains

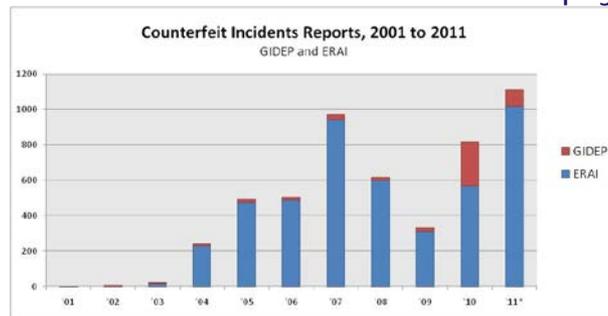
PCN increase of 34% / Yr



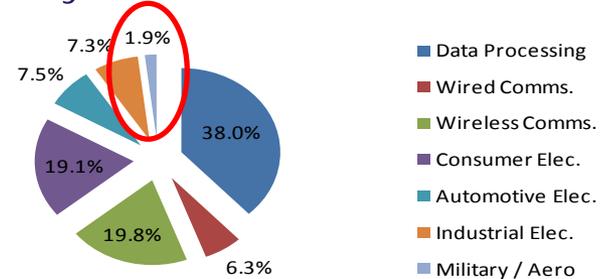
EOL increase of 25% / Yr



Counterfeits increase Steeply



Military/Aero < 2% Semicon Mkt



Shortage and Allocation Issues

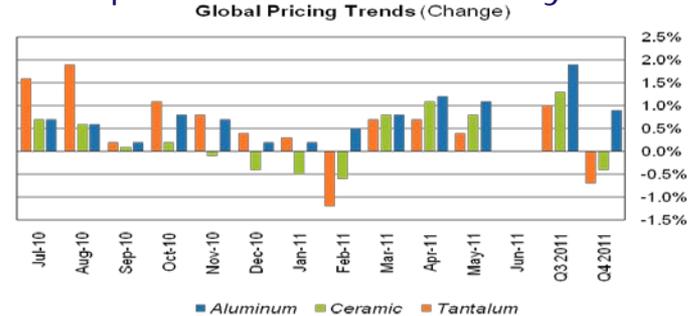
Capacitors

Flexibility

- Abundant Supply - Most Suppliers Are Able to Accept Significant Upsides; No Current Supply Issues
- Supply / Demand Equilibrium - Adequate Supply Exists; Significant Upsides in Demand Could Extend Lead Times
- Demand Exceeds Supply - Extending Lead Times; Potential for Shortages
- Allocation Market - Suppliers Are Unable to Respond to Unforecasted Demands; Shortage

Forecast	Aluminum			Ceramic			Tantalum		
	Flexibility	Lead Time (Weeks)	Global Pricing Trend	Flexibility	Lead Time (Weeks)	Global Pricing Trend	Flexibility	Lead Time (Weeks)	Global Pricing Trend
Q4 2011	Abundant	18	0.3%	Abundant	14	-0.4%	Allocation	20	-0.7%
Q3 2011	Abundant	18	1.5%	Abundant	14	1.3%	Allocation	20	1.8%
Jun-11	Abundant	18	1.1%	Abundant	14	0.8%	Allocation	20	0.4%
May-11	Abundant	18	1.1%	Abundant	14	1.1%	Allocation	20	0.7%

Component Price Volatility

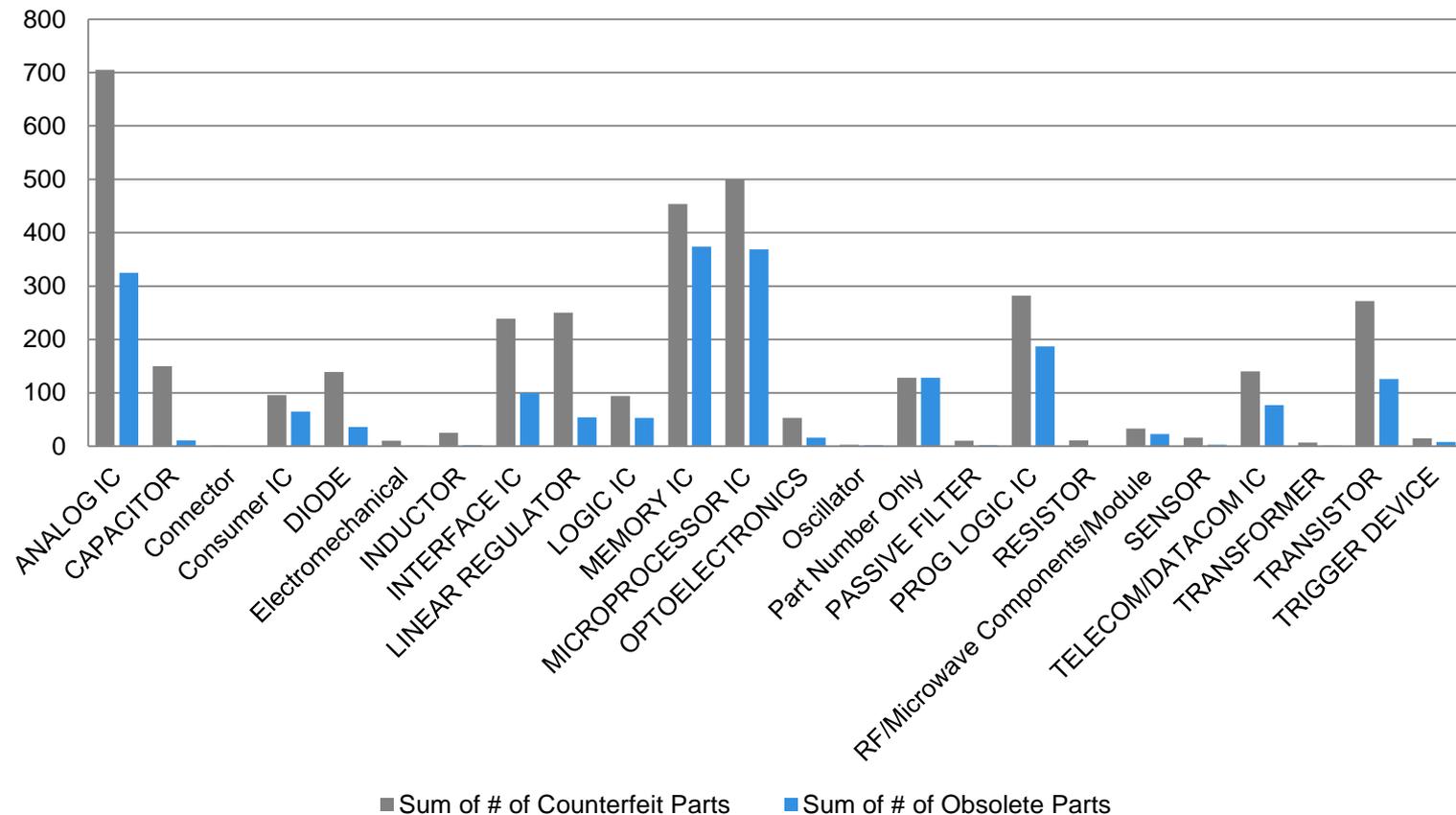


Obsolescence & Counterfeit Correlation

Where we see discontinued parts – we see counterfeits



Obsolescence associated with Identified Counterfeit Parts



What's Being Counterfeited?

All types of electronic components...



Top Counterfeit Incidents Reported by Part Class

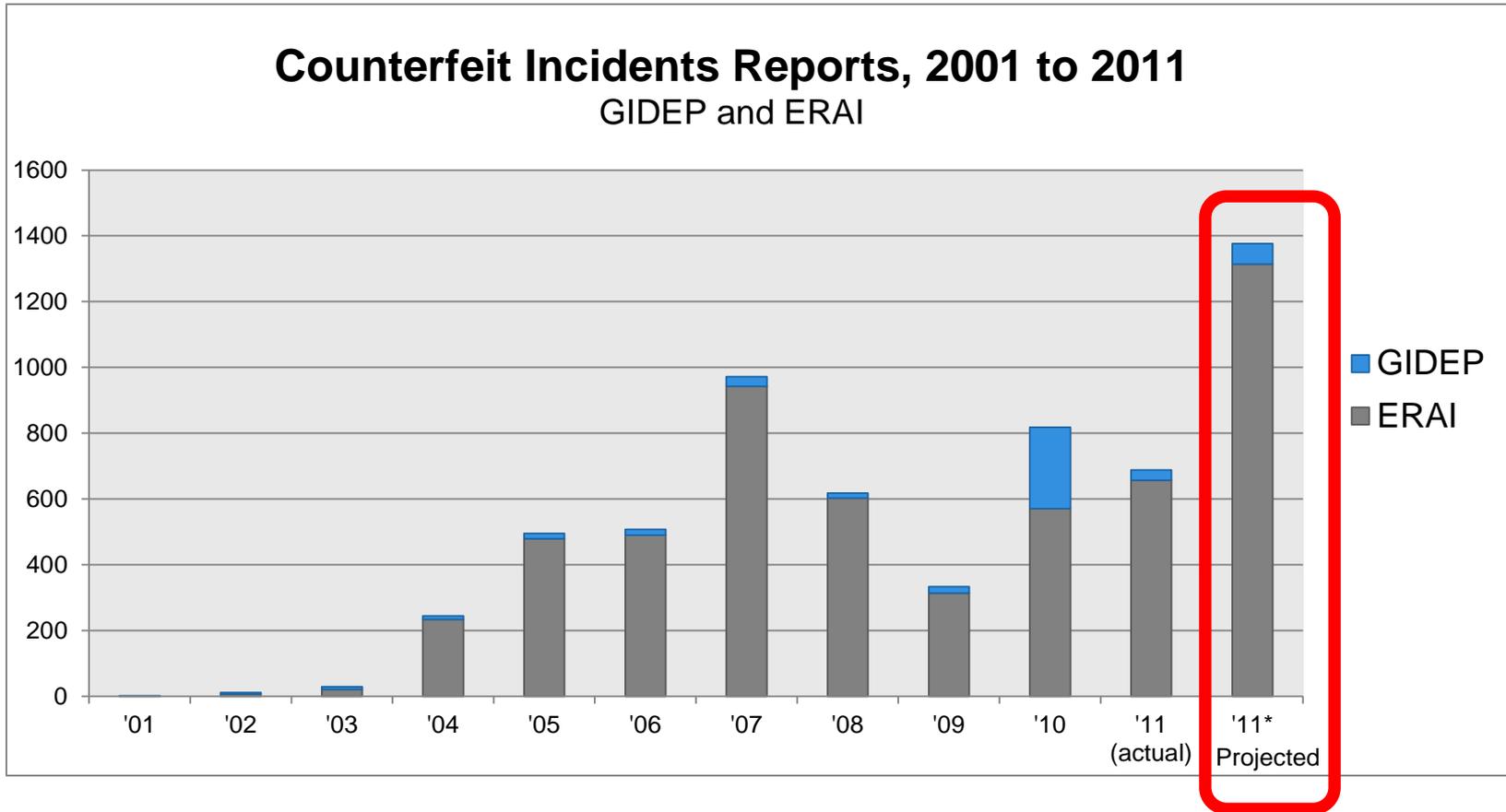
Classes with 1.5% or Greater Proportion of Total Incidents

Rank	Minor or Leaf Class	Major Class	# Incidents	% of Total
1	Operational Amplifier	ANALOG IC	194	6.0%
2	Programmable ROM	MEMORY IC	176	5.5%
3	Microcontroller	MICROPROCESSOR IC	157	4.9%
4	Static RAM	MEMORY IC	143	4.5%
5	Programmable Logic Device	PROG LOGIC IC	140	4.4%
6	FET General Purpose Power	TRANSISTOR	131	4.1%
7	Field Programmable Gate Array	PROG LOGIC IC	109	3.4%
8	Line Driver or Receiver	INTERFACE IC	100	3.1%
9	Analog to Digital Converter	ANALOG IC	96	3.0%
10	Switching Regulator or Controller	LINEAR REGULATOR	92	2.9%
11	Power Management Circuit	LINEAR REGULATOR	80	2.5%
12	Peripheral Driver	INTERFACE IC	60	1.9%
13	Digital to Analog Converter	ANALOG IC	57	1.8%
14	Ceramic Capacitor	CAPACITOR	56	1.7%
15	Microprocessor	MICROPROCESSOR IC	54	1.7%
16	Dynamic RAM	MEMORY IC	49	1.5%
				<u>52.8%</u>

Source: IHS Inc, 2011
GIDEP and ERAI Counterfeit Incidents



Counterfeit Statistics 2001 – 2011 (*Projected)



But No Supplier is Immune from Risk

Counterfeits unknowingly are entering the supply chain



Figure III-2: Percent of Distributors Purchasing Parts From Different Suppliers

Type of Supplier	Authorized Distributors	Unauthorized Distributors
OCMs	98%	79%
Authorized Distributors	78%	91%
Independent Distributors	47%	94%
Brokers	29%	92%
OEMs	11%	85%
Internet-Exclusive Sources	27%	58%
Contract Manufacturers	7%	66%
DOD Depots	2%	11%
DOD Manufacturing Centers	2%	9%
DOD Surplus	4%	4%
DLA	2%	2%

Source: U.S. Department of Commerce, Office of Technology Evaluation, Counterfeit Electronics Survey, November 2009.

“It is not uncommon, however, for authorized distributors to purchase parts outside of the OCM supply chain in order to fulfill customer requirements – 58 percent purchase parts from other sources.

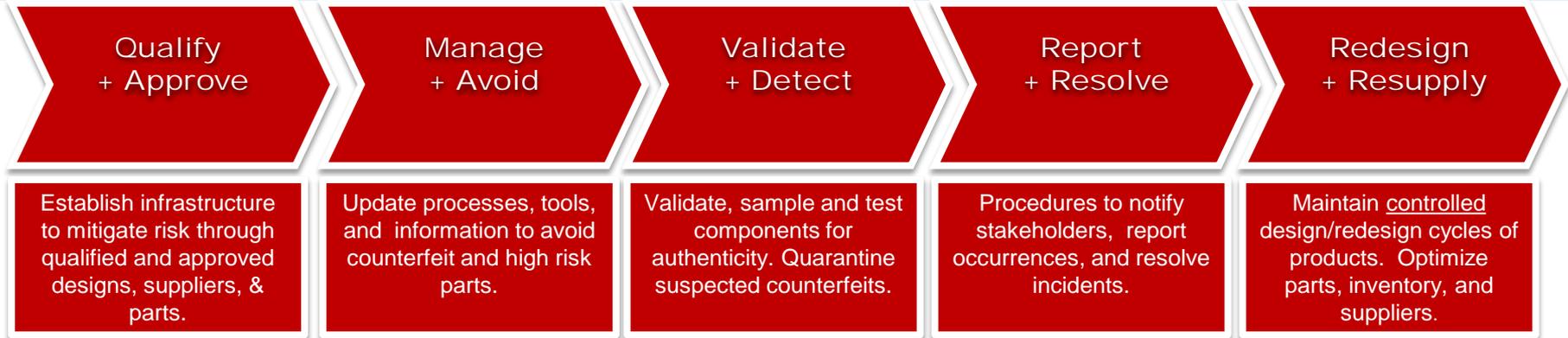
Specifically, 47% of authorized distributors procure parts from independent distributors, 29% procure from brokers, and 27% procure from Internet-exclusive sources.”

Source: U.S. Department of Commerce, Office of Technology Evaluation, Counterfeit Electronics Survey, November 2009.



Best Practices to Avoid Risk

Stay Within Your Trusted Supply Chain



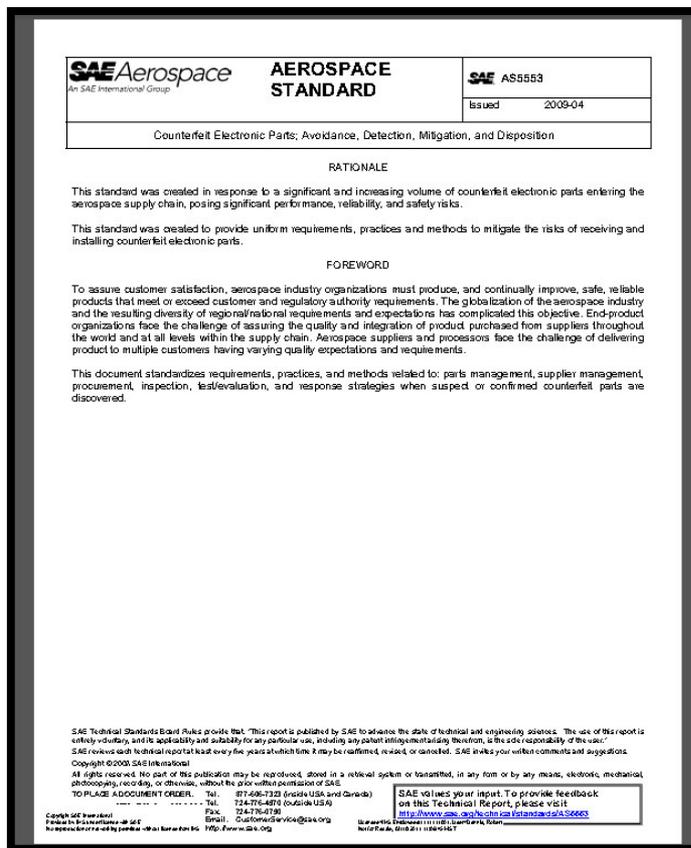
- 1. Procure from franchised and authorized sources**
- 2. Select a few preferred independent distributors**
 - Quality
 - Industry memberships - ERAI / IDEA
- 3. Contractually define your expectations**
- 4. Know what is being counterfeited**
- 5. Leverage a strong obsolescence approach**
 - Search for alternate part types & mfrs for known counterfeit parts
 - Review aftermarket sources
 - Leverage U.S. Government QML/QPL
- 6. Test appropriately**
- 7. Do not return known counterfeit parts**

Industry Standards & Reports

New & updated standards expected in 2011



SAE AS5553 issued April 2009



IDEA 1010B update

- Standard for electronic part inspection
- Released April 2011

AS5553A update intended for OEMs

- Expected in balloting by end of 2011

AS6171 intended for Test Providers

- Standardize practices to detect counterfeits & ensure consistency of test techniques
- Expected in balloting by end of 2011

AS6081 intended for Distributors

- Counterfeit avoidance requirements
- Currently in balloting

• ARP6178 tool to access counterfeit risk of Distributors

- Expected in 2011

IHS Parts Universe

Alerts are accessible via the IHS product



IHS ONLINE Parts Universe User: IHS User Home | [Advanced Search](#) | [Results](#) | [Preferences](#) | [IHS Menu](#)

Results: Part Number Documents Details Environmental Compare Transfers Mfr Info Alerts Life Cycle Export

Category: Part [Edit Search](#)

Clr	Rel. Info	Part Number	Mfr Name	PS	Part Description	Category	Part Type
<input type="checkbox"/>		BTS716G*					
<input type="checkbox"/>		BTS716G	Infineon	A	5.3 A 4 CHANNEL, BUF OR INV BASED PRPHL DRVR, PDSO20	Peripheral Driver	INTERFACE
<input type="checkbox"/>		BTS716GB	Infineon	A	5.3 A 4 CHANNEL, BUF OR INV BASED PRPHL DRVR, PDSO20	Peripheral Driver	INTERFACE

2 items [Export](#) [Compare](#)

Results History: Operational Amplifier | Graphics Processor | Part Number

Results: Part Number Documents Details Environmental Compare Transfers Mfr Info Alerts Life Cycle Export

Part Number: BTS716G Mfr Name: Infineon PS: A [Print](#)

Product Change Notices

Alert Number	Number	Description	Type	Issue Date
1821113080	066/10	THE INFORMATION NOTE NO 066/10, DATED 16. 11. 2010 HAS BEEN CANCELLED	PRODUCT CHANGE NOTIFICATION	01-Dec-2010
1820986479	066/10	MODIFIED CARRIER TAPE DESIGN	PRODUCT CHANGE NOTIFICATION	16-Nov-2010
1809877243	2008-119-A	IMPLEMENTATION OF A GREEN VERSION FOR INFINEON SSMART PRODUCTS IN TO263 AND DSO300 PACKAGE	PRODUCT CHANGE NOTIFICATION	14-Oct-2008
1749167946	001/07	CHANGE CANCELLED FOR THE CHANGE OF THE DATE CODE FORMAT FROM 6 DIGITS TO 4 DIGITS	PROCESS CHANGE NOTIFICATION	08-Jan-2008
1610769673	001/07	CHANGE OF THE INFINEON BARCODE PRODUCT LABEL CONTENT	PRODUCT CHANGE NOTIFICATION	15-Jan-2007
1747321819	059/05	IMPLEMENTATION OF MINOR LAYOUT CHANGES TO THE WAFER	PRODUCT CHANGE NOTIFICATION	09-Aug-2005
2107232666	2000-086-A3	CHANGE OF WAFER DIAMETER FROM 5 INCH TO 6 INCH & 5 INCH/6 INCH TO 8 INCH QUALIFICATION PLAN	PRODUCT CHANGE NOTIFICATION	25-Jun-2001

Failure Notices

Alert Number	Number	Problem Description	Action Taken/Planned	Mfr Issue	Batch/Serial Number	Alert Information Source
1822279781	20110124-01	COUNTERFEIT NOTICE-SUSPECTED COUNTERFEIT OR HIGH RISK PART ALERT		24-Jan-2011		ERAI

IHS Parts Universe

Customers alerted to counterfeit incident



4D ONLINE Parts Universe		User: IHS User	Home
Results: Part Number Documents Details Environmental Compare Transfers Mfr Info Alerts Life Cycle Export			
Part Number: BTS716G Mfr Name: Infineon PS: A			
Category	Peripheral Driver		
Part Description	5.3 A 4 CHANNEL, BUF OR INV BASED PRPHL DRVR, PDSO20		
Manufacturer Part Description	SMART HIGH-SIDE POWER SWITCH FOUR CHANNELS 4 X 140MILLI OHMS STA		
Manufacturer Package Description	GREEN, PLASTIC, SOP-20		
CAGE Code	C6489		
RoHS Compliant			
RoHS Exemption(s)			
SVHC Presence			
PDSL Presence			
China RoHS Compliant			
Lead Free			
Generic Number	716		
Peripheral Driver Type	BUF OR INV BASED PRPHL DRVR		
Qualification Status	COMMERCIAL		
Temperature Grade			
Number of Functions	4		
Output Peak Current Limit-Nom (A)	5.3		
Supply Voltage1-Nom (Vsup) (V)	12		
Supply Voltage1-Min (Vsup) (V)	5.5		
Supply Voltage1-Max (Vsup) (V)	40		
Output Current Flow Direction	SINK		
Built-in Protections	TRANSIENT; OVER VOLTAGE; THERMAL; UNDER VOLTAGE		
Turn-off Time (toff) (us)	270		
Turn-on Time (ton) (us)	250		
Technology			
Package Code	SOP		
JESD-30 Code	R-PDSO-G20		
Package Shape	RECTANGULAR		
Package Body Material	PLASTIC/EPOXY		
Terminal Position	DUAL		
Package Style	SMALL OUTLINE		
Terminal Form	GULL WING		
Number of Terminals	20		



Suspect Counterfeit or High Risk Part Alert

IHS & ERAI would like to inform you of reported [substandard or suspected counterfeit part activity](#) in the market concerning the part identified below:

Identified Part

Manufacturer:	INFINEON TECHNOLOGIES AG
Part Number:	BTS716G
Report Date:	Jan. 24, 2011

For detailed information such as the description of non-conformance, the date & lot codes affected and & other critical information on this suspected counterfeit or substandard part occurrence, please contact your IHS Account Representative to obtain access credentials to the ERAI website or for registered users click on the link below:





- Subscribers of IHS 4DOnline BOM Manager, COMET, and Parts Universe have access to alerts from ERAI, GIDEP, and other sources.
- Subscribers to the IHS-ERAï solution provides ERAï membership, giving them access to ERAï's comprehensive market intelligence community, tools, and services.

Exclusive Partner to Only IHS

IHS offers most complete counterfeit solution



News Release

FOR IMMEDIATE RELEASE

News Media Contact:
IHS Press Desk
+1 303 305 8021
press@ihs.com

IHS and ERAI Join Forces to Combat Counterfeit, High Risk and Substandard Parts

Companies to offer advanced solution for supply chain risk mitigation

ENGLEWOOD, Colo. (January 12, 2010) - IHS Inc. (NYSE:IHS), a leading global source of critical information and insight, today announced an agreement with ERAI, Inc. to be its exclusive worldwide partner for delivering products and services designed to mitigate the risks associated with counterfeit, substandard and high-risk parts found throughout global supply chains. IHS has an exclusive agreement to sell ERAI products and services, while the two companies will jointly combine complimentary content, tools and expertise in order to further enhance their advanced supply chain and design capabilities.

The exclusive relationship with ERAI gives IHS access to the most complete, authoritative and up-to-date reporting and investigation services, information and risk mitigation solutions to electronics professionals worldwide. IHS will become the primary means by which these industry-leading offerings from ERAI will be offered to original component manufacturers (OCMs), original equipment manufacturers (OEMs), franchised distributors, contract manufacturers (CMs), government agencies and associations serving the industry. It also positions IHS as the leader in delivering electronics value chain risk mitigation and supply chain enablement capabilities to businesses and governments around the world.

"This partnership is an excellent complement to the existing IHS Design and Supply Chain business, and further builds our position as a key information provider in the electronics, manufacturing and supply chain markets," said IHS Vice President of Product Lifecycle Don Lesem. "Combined with the IHS electronic components and industry standards information, as well as our technology value chain research and advisory services, customers will now have access to a full suite of robust information services targeted specifically at counterfeit and high risk parts within the multi-tier, global electronics value chain."

Together, ERAI and IHS will offer solutions in a manner that can more seamlessly address counterfeit part and supply chain risks in the following business workflows:

- **Quality and Approve:** Establish the robust infrastructure to mitigate risk through qualified and approved designs, suppliers and parts.

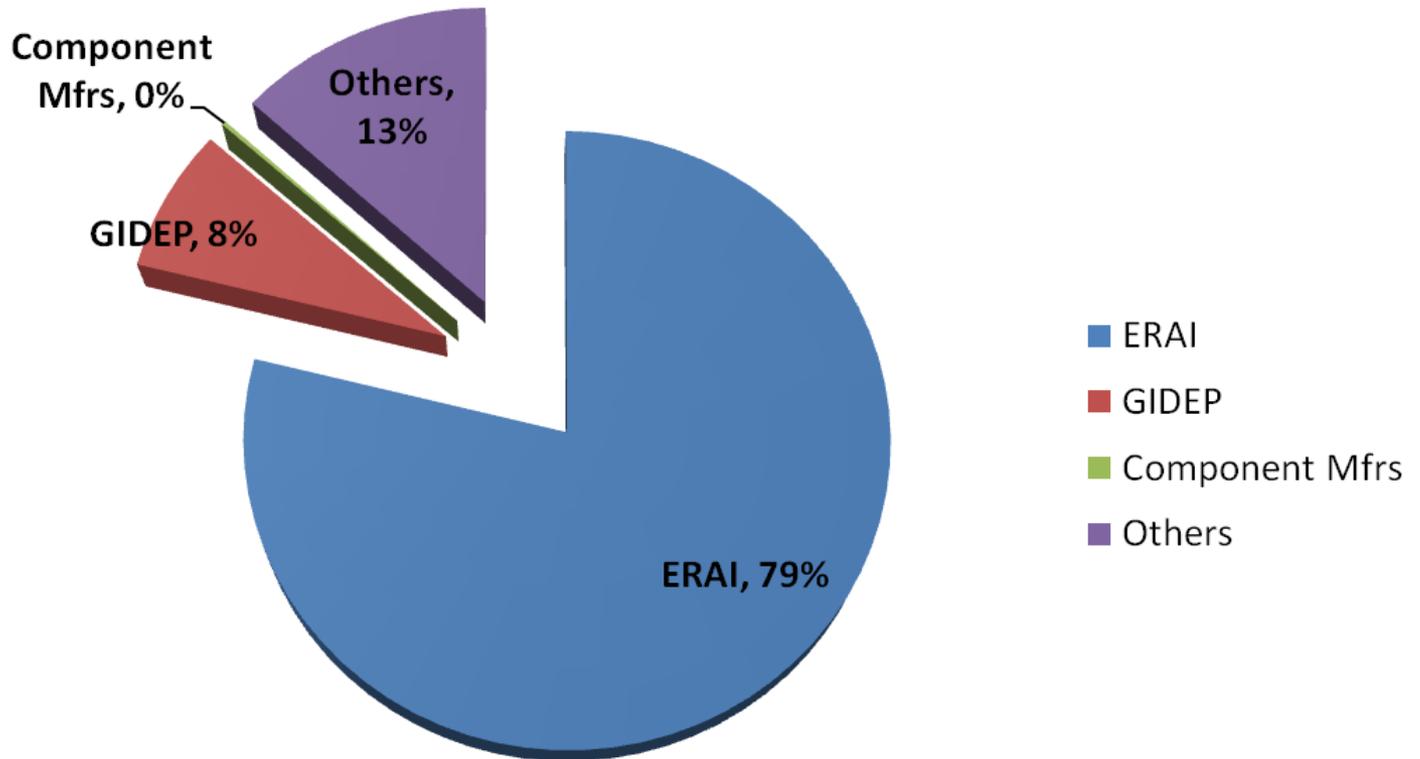


Counterfeit Information Sources

GIDEP and ERAI = the lion's share



Percent of Total Counterfeit Alerts 2000 - 2011



Know What is Being Counterfeited

Monitor parts, suppliers & techniques



ERAI, Inc. Terry Lively
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[Search High Risk Parts](#) [Submit High Risk Part](#)

Part: MAX903CSA-T

Part #: MAX903CSA-T
Manufacturer: Maxim / Dallas
Date Code: 0414
Lot Code: NASFDE2510
Country of Origin: Philippines
Suspect Counterfeit Part: Yes
Date Reported: 06/24/2009
Description of Nonconformance: A visual inspection revealed that some of the suspect units were missing the pin one dimple and the package sizes varied and were not consistent with the manufacturer's specifications. (See Image 4) X-ray analysis revealed the parts had inconsistent die frames and sizes. (See Image 5)

Associated Incident(s)

Incident Type	Date of Incident	Reported Company Name	
Suspect Counterfeit Product	06/29/09	Double Key Holdings Ltd	View Details

Available Images and Test/Nonconformance Reports:



Know What is Being Counterfeited

Detailed Information on the Incident



ERAI, Inc. Terry Lively
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Search High Risk Parts Submit High Risk Part

Part: MAX903CSA-T

Part #:
Manufacturer:
Date Code:
Lot Code:
Country of Origin:
Suspect Counterfeit Part:
Date Reported:
Description of Nonconformance:

Company: Double Key Holdings Ltd
Address: 4533 Nanaimo St
Vancouver, N/A V5N 5J2
Canada
T. 6048161328
www.doublekeyholdings.com

DATE COMPLAINT FILED	06/19/09
DATE OF ALERT	06/29/09
DATE RESOLVED	unresolved

⚠ COMPLAINT SUMMARY

On April 17, 2009, a Member placed an order with Double Key Holdings Ltd for 2,500 pieces of Maxim part number MAX903CSA-T totaling \$3,125.00. Payment terms were COD company check.

the package sizes
ysis revealed the parts

Associated Incident(s)

A visual inspection revealed the parts were not on an original factory reel, there were no pin 1 markings on...

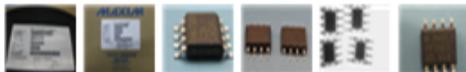
Incident Type

Suspect Counterfeit Prod

[View Details](#)

[View Company Profile and Incident Details](#) [Close](#)

Available Images and Test/Nonconformance Reports:



Know What is Being Counterfeited

Monitor parts, suppliers & techniques



A screenshot of a web browser displaying the ERAI (Electronic Return Address Information) website. The browser's address bar shows "Default". The website header includes the ERAI logo and navigation links for "Home", "Part Sourcing", and "Component Search". A search bar contains the text "Part: PALC22V10D-". On the right side, there is a user profile for "Bob Braasch" with links for "Profile" and "Sign Out". The main content area features a large image of a component, likely a microchip, with the text "22 V10" and "H 02" visible on its surface. The image is timestamped "A001 1280x1024 | 2011/05/20 13:20:36". Below the image, there is a section for "Available Images and T" with several small thumbnail images. The browser's status bar at the bottom shows "Done" and "Internet" with a 100% zoom level.

Know What is Being Counterfeited

Monitor parts, suppliers & techniques



Default

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Home Part Sourcing Company Search Reported Companies **Reported Parts** ERAI Member Search File a Complaint BOM Scrubber Services Executive Conference Customer Support User Manual

Search High Risk Parts Submit High Risk Part

Search High Risk Parts Database

Welcome to the ERAI High Risk Parts database. In order to search for a part, please enter at least the first three characters of the part you are searching for. If you require any assistance or have questions, please call Membership Services at 239-261-6268.

Part Number

Recently Reported Alerts (last 14 days)

Part Number	Manufacturer	Date Code	Lot Code		
MC14544BCP	MOTOROLA	SC 0123	HTAG1023		Details
5962-87782012A	MICROSEMI	SC A0016P			Details
XC5210-5PG223C	XILINX	SC 0645			Details
PALC22V10D-7PC	CYPRESS SEMICONDUCTOR	SC 2000			Details
EXO-3C14.7456MHZ	GOLLEDGE	SC xx	xx		Details
SKHQFFA010	ALPS	HR 08+			Details
VQ1000P	SILICONIX	HR G8A9938			Details
VQ1000P	SILICONIX	HR G8A9949			Details
VQ1000P	SILICONIX	HR GA89915			Details
VQ1000P	SILICONIX	HR G8A9924			Details
P8286	AMD / ADVANCED MICRO DEVICES	SC 9506FMP			Details

Internet 100%



Qualify Your Independent Distributors



 ERAI Affiliate Demo
Mail System 

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In Business Since: 10/04/95
D&B: 12327524
Cage Code: 3UCA5
ERAI Member: YES
ERAI Member Since: 08/18/00
ERAI Membership Expiration: 09/21/11

Quality Certifications:

AS9120 Certified: A0002135-2
ISO 14001:2004 Certified: A0001358-4
ISO 9001:2000 Certified: A0002135-2
ANSI/ESD S20.20-2007 Certified: 121041.00
IDEA Member:
IDEA-ICE-3000 Certified In-House Inspectors: 15
ITAR Registration: K-3102

COMPANY DESCRIPTION

View Real Stock on Available Parts

Limit risk exposure



ERAI Affiliate Demo Demo Account
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Part Search | Mail System

[Manage Your AVL List](#)

AM687D

Exact Search Part

RFQ	Prefix	Number	Mfg	D/C	Qty	Price	
<input type="checkbox"/>	SDS	AM 687DL	AD81		144	call	eraï
<input type="checkbox"/>	SDS	AM 687DL	ADVANCED MIC	8730	90	call	eraï
<input type="checkbox"/>	SDS	AM 687DL	AMD	8523	25	call	eraï
<input type="checkbox"/>	SDS	AM 687DL	AMD	2001	19	call	eraï
<input type="checkbox"/>	SDS	AM 687DL	AMD 8214		10	call	eraï
<input type="checkbox"/>	SDS	AM 687DL	AMD	01	8	call	eraï
<input type="checkbox"/>	SDS	AM 687DM	AMD	77	7	call	eraï
<input type="checkbox"/>	SDS	AM 687DMB	ADVANCED MIC	8406	6	call	eraï
<input type="checkbox"/>	SDS	AM 687DL	AMD	8709	4	call	eraï
<input type="checkbox"/>	SDS	AM 687DL	AMD		3	call	eraï
<input type="checkbox"/>	SDS	AM 687DL	AMD	01	2	call	eraï
<input type="checkbox"/>	SDS	AM 687DL	AMD	01	2	call	eraï
<input type="checkbox"/>	SDS	AM 687DL	AMD		1	call	eraï

1

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ADD SELECTED ITEMS TO RFQ BASKET

New Search

SEND RFQ FOR SELECTED ITEMS

Search again in All Available

BOM Analysis: Risk Identified

Provides counterfeit details on your BOM



	A	B	C	D	E	F	G	H	I	J	
1	Report Type: User Initiated Scrub Report										
2	Company Name: OEM										
3	Date Processed: 4/15/2011										
4	Please Note: TYPE (Column D) HR - High Risk Parts (Parts that have been reported to ERAI as being faulty, substandard or nonconforming to the original manufacturer's specifications.); SC - Suspect Counterfeit Parts.										
5	Your Internal PN#	Your Manufacturer PN#	Manufacturer PN#	Risk Parts	Type	% Match	Your Mfg	Mfg Risk Part	D/C Risk Part	Lot # Risk Part	Description of Non-Conformance
6	Console_Assembly.xls										
7	7548984	DAC1231LCJ	DAC1231LCJ	SC	100%	National	NATIONAL SEMI	8632	B8632		Parts have been remarked. Marking permanency revealed a topical covering which was removable. When this substance was removed a different part number was revealed.
8	7548984	DAC1231LCJ	DAC1231LCJ	SC	100%	National	NATIONAL SEMI	9048	B9048A		Parts have been resurfaced. The top and bottom of the parts have a different texture.
9	7548984	DAC1231LCJ	DAC1231LCJ	SC	100%	National	NATIONAL SEMI	8620	B8620		Parts failed marking permanency testing. Part markings are easily removed. These parts have been resurfaced and remarked.
10	536235	ADS7832BN	ADS7832BN	SC	100%	Burr Brown	BURR BROWN/TI	--		21235XW	Evidence of sanding, scratching, and blacktopping.
11	536235	ADS7832BN	ADS7832BN	HR	100%	Burr Brown	BURR BROWN/TI	239	--		Parts rejected visually because they found different date codes, different countries of origin and soldered leads.
12	536235	ADS7832BN	ADS7832BN	HR	100%	Burr Brown	BURR BROWN/TI	--	--		Parts failed electrically.
13	526894	BUV48C	BUV48C	SC	100%	ST Micro	ST MICROELECTRONICS	--		W321	Parts have been resurfaced.
14	5554124	HM628128LP-10	HM628128LP-10	SC	100%	Hitachi	Hitachi Semiconductor, Inc.	438		1002330	Parts failed marking permanency and leads are clearly refurbished. See photos.
15	236548	HM628512ALFP-8	HM628512ALFP-7	SC	92%	Hitachi	Hitachi Semiconductor, Inc.	203		01002MMD SL	Product shows evidence of over coating and some external damage so product is deemed not in new and unused condition. Product has poor electrical yield when testing and shows evidence or remarking. Product rejected at anomaly analysis.
16	5554124	HM628128LP-10	HM628128LP-8	SC	91%	Hitachi	Hitachi Semiconductor, Inc.	539		ZZZZ	These parts became obsolete in 2001; the suspect devices are marked with a 0539 date code. Furthermore, die analysis revealed the parts had a Sony die from 1992.
											The manufacture label has both ST Microelectronics and SGS Thompson. There are various misspellings on the label. Also the label states that the parts were made in Malta, but the

IHS Design & Supply Chain Solutions

Parts, materials and environmental offerings



4DOnline Products



Part Search & Research
BOM Analysis

- Lifecycle
- Availability
- Compliance
- Counterfeits
- Alternate Parts

**Parts
Universe &
BOM Manager**

EOL / PCN
Alerting and
Management



PCNAlert

Counterfeit
Part Risk
Management
Supplier Risk
Management



**ERAï
Counterfeits**

Compliance
and Lifecycle
tracking for
parts outside
reference
databases



**Content
Services**

Product
Regulation
Tracking



**Regulation
Tracking**

Electronics
Supply Chain
Analysis

- Teardown
- Component
Price Tracker

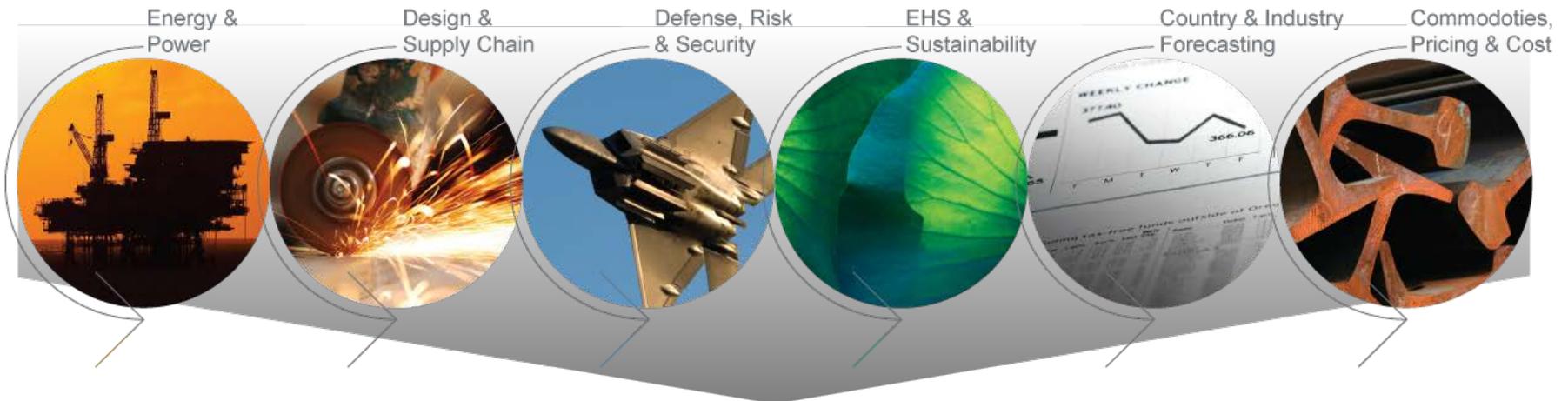


**Teardown,
Price Tracker**

IHS brings content and expertise to customers across a broad range of industries



Capabilities



Industries Served

- Energy & Natural Resources
- Government, Defense & Security
- Chemicals
- Technology, Media & Telecommunications
- Transportation
- Manufacturing
- Adjacent & Growth Industries