Counterfeit Parts Prevention Strategy Guide Product Overview

May 8, 2014

David C. Meshel
Systems Engineering
GEOINT Futures Office

Prepared for:

National Reconnaissance Office
14675 Lee Road
Chantilly, VA 20151-1715

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This document was created by multiple authors throughout the government and the aerospace industry. For their content contributions, we thank the following contributing authors for making this collaborative effort possible:

David Meshel (Co-lead)	The Aerospace Corporation
Henry Livingston	BAE Systems
Mike Kahler	Ball Aerospace & Technologies Corp
Lilian Hanna	The Boeing Company
Scot Lichty (Co-lead)	Lockheed Martin Corporation
Ken Baier	Lockheed Martin Corporation
Bob Ricco	Northrop Grumman Electronic Systems
Greg Hafner	Orbital Sciences Corporation
George Young	Raytheon
Michael Woo	Raytheon
John Walker	SSL
Fred Schipp	MDA
Barry Birdsong	MDA
Carlo Abesamis	NASA

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Acknowledgments (Cont)

The authors deeply appreciate the contributions of the subject matter experts who reviewed the document:

John Adams	The Aerospace Corporation
Larry Harzstark	The Aerospace Corporation
Edward Ortiz	The Aerospace Corporation
Terita Norton	The Aerospace Corporation
Dale Gordon	Aerojet Rocketdyne
James Koory	Aeroject Rocketyne
Miroslav Maramica	Area-51 ESG
Don Sawyer	Avnet
Bob Bodemuller	Ball Aerospace & Technologies Corp.
Gerald Aschoff	The Boeing Company
Anduin Touw	The Boeing Company
Christopher Brust	DCMA
Jim Stein	DoD AT&L/RESE GIDEP Program
Matthew Lamberti	DOJ / CCPIS
David Ford	Flextronics
C. J. Land	Harris Corporation
Sultan Ali Lilani	Integra Technologies
Shawn Cheadle	Lockheed Martin Corporation
Mark King	Micropac
Yehwan Kim	Moog, Inc
Brian Hughitt	NASA
Michael Sampson	NASA
Jim Creiman	Northrop Grumman
Robert Lasky	Orbital
Dave Davis	SMC
Tom Sharpe	SMT Corporation
Jim Loman	SSL
Kevin Sink	TTI, Inc.

Counterfeit Parts Prevention Strategy Guide

Product Overview

Scot R. Lichty, Lockheed Martin Corporation
David C. Meshel, The Aerospace Corporation

May 8, 2014

This presentation provides a summary overview of TOR-2014-02200, “Counterfeit Parts Prevention Strategy Guide”, which was produced as part of the 2014 Mission Assurance Improvement Workshop.

Agenda

Part marking is blurred compared to authentic part

Marking slightly different on counterfeit part

Part Shows "Blacktopping" and Remarking

- Motivation
- Counterfeit Escapes
- Intended Product Use
- Differentiators
- Charter and Outline
- Workshop Accomplishments
- SME Comment Summary
- Follow-on Recommendations
- Team Membership and Recognition


Counterfeiter removing die from part


*Bags of Electronic Waste

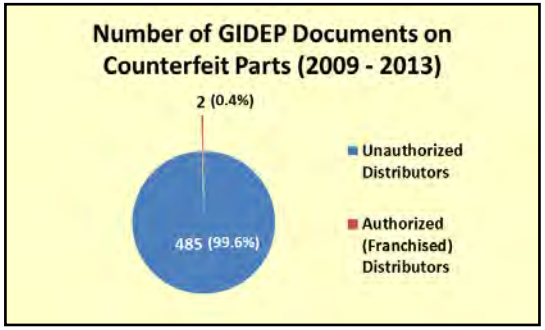
*Photos courtesy of Tom Sharpe and SMT Corporation

Motivation

- 250% increase in suspected counterfeit cases between 2005 – 2008 with another 4X increase between 2009 – 2012
  - *For NSS systems only 1 known occurrence*
- New Public Law Instituted – 2012 NDAA, §818
  - *Requires "counterfeit electronic parts avoidance and detection systems"*
  - *Increased contractor liability / financial risk with limited safe harbor*
- Maintain Currency…Continuous Improvement
- Significant Portion of Counterfeit Threat Can Be Eliminated
  - *Simply procuring only from "authorized suppliers"*
  - *Applying risk mitigation techniques when using "unauthorized suppliers"*

www.cnn.com/2011/11/07/vs/U-S-military-bogus-parts


Pukmedia.com



Threat

Is This a Possible Source…..?

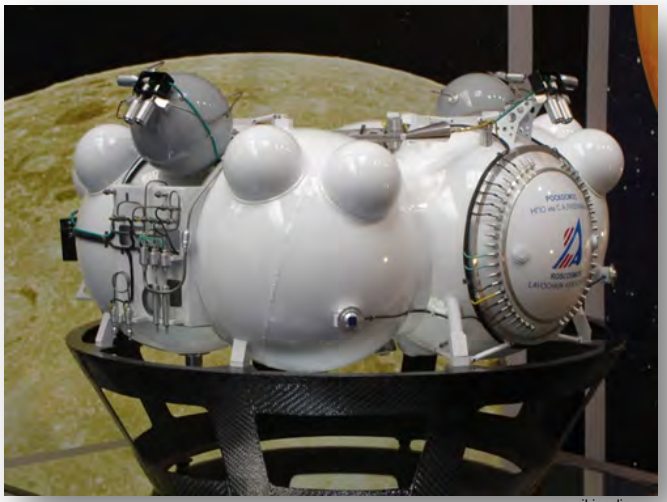
This flow illustrates how counterfeit parts can be sourced and eventually sold.

*Photos courtesy of Tom Sharpe and SMT Corporation
**Photo courtesy of Basal Action Network

….a Higher Probability from Distributor/Broker

Impact of Counterfeit Parts

- Counterfeit Parts Can Cause:
  - *Personal injury*
  - *Mission failure*
  - *Reduced reliability*
  - *Risk to the War Fighter*
  - *Potential loss of contracts*
  - *Shutdown of manufacturing lines*
  - *Negative cost and schedule impacts*
  - *Penalties for companies and individuals*



en.wikipedia.org

Phobos Grunt

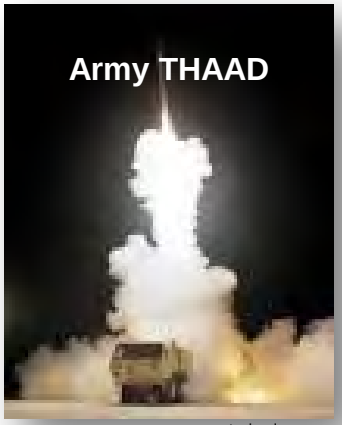
No 2nd Chances for Space

Examples of USG Products with Counterfeit Parts

- 2007 Aerospace reported to SQIC 1st NSS CF part
- Traced to broker

www.defencetalk.com and www.worldtribune.com

- Display units with parts of unknown reliability
- Parts traced to China



www.army-technology.com

- Mission Computers
- Distributor provided parts
- Obsolescence

Themes

- Unauthorized source procurement
- Inadequate requirement flow down
- Unspecified testing and inspection requirements
- Reporting and quarantining failures

Relevance to Counterfeit Guide

- Preventive measures to avoid procuring from unauthorized sources
- Mitigation actions when only option is unauthorized source procurement
- Evaluation of all parts received from suspect suppliers

Intended Product Use

- Provide Guiding Principles and Practices for Contractors and Suppliers to align to and be compliant to 2012 NDAA, §818 and DFARS rule, 48 CFR 246.870 (especially lower tiers)
  - *Establish and strengthen counterfeit prevention systems*
  - *Provide consistent implementation methodology throughout supply chain*
  - *Assist the supply chain in preparing for certifications*
  - *Potential utilization outside of space systems*
- Professional associations or educational organizations
  - *SAE International, JEDEC, AIA, NDIA, SIA, etc.*
- Guide for Certifying Agencies
  - *DCMA*
- Assist for criminal investigation (support to)
  - *DOJ Computer Crimes and Proprietary Information Section*
  - *National Intellectual Property Rights Coordination Center*

Differentiators

- Preventative measures being implemented by NSS programs
- Techniques to ensure part availability from authorized suppliers
- Lessons learned, best practices, observations and case studies
- Basis for building an effective training program with links to fully developed programs
- New reporting and quarantining requirements
- Structured to match DFARS rule, 48 CFR 246.870 (released 16 May 2014)

Themes from Lower-Tier Survey

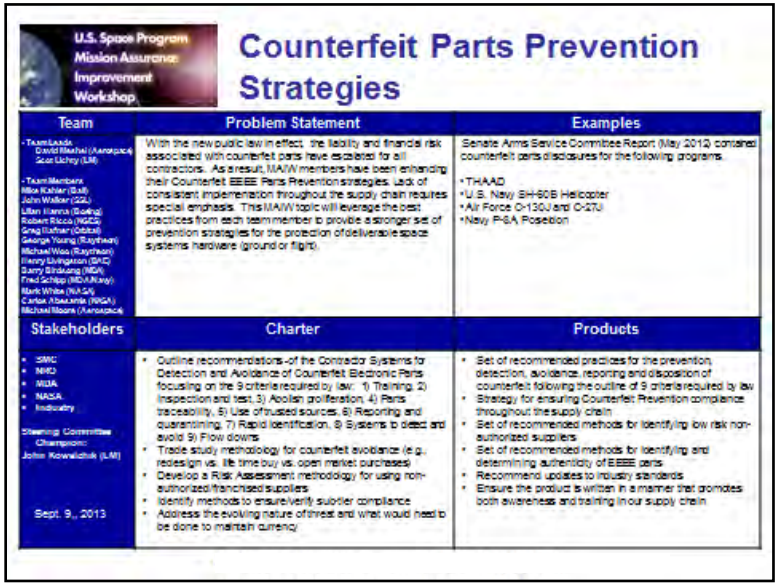
- Assistance welcomed to better comply with requirements
- Procure from OCM and Authorized Distributors
- Standardized flow downs helpful
  - Commonality lowers costs
- Increased costs to implement law
- Unlimited liability potential

15. What can prime contractors do to help sub-tiers with counterfeit parts prevention?

Better education, training, process assessment and sharing of lessons learned

Counterfeit Parts Prevention Strategy Guide Charter

- Outline recommendations for Contractor Systems for Detection and Avoidance of Counterfeit Electronic Parts
- Provide methodologies for counterfeit avoidance
- Develop a risk assessment methodology when using unauthorized or non-franchised suppliers



- Identify methods to ensure and verify sub-tier compliance
- Address the evolving nature of the threat and what is needed to maintain currency

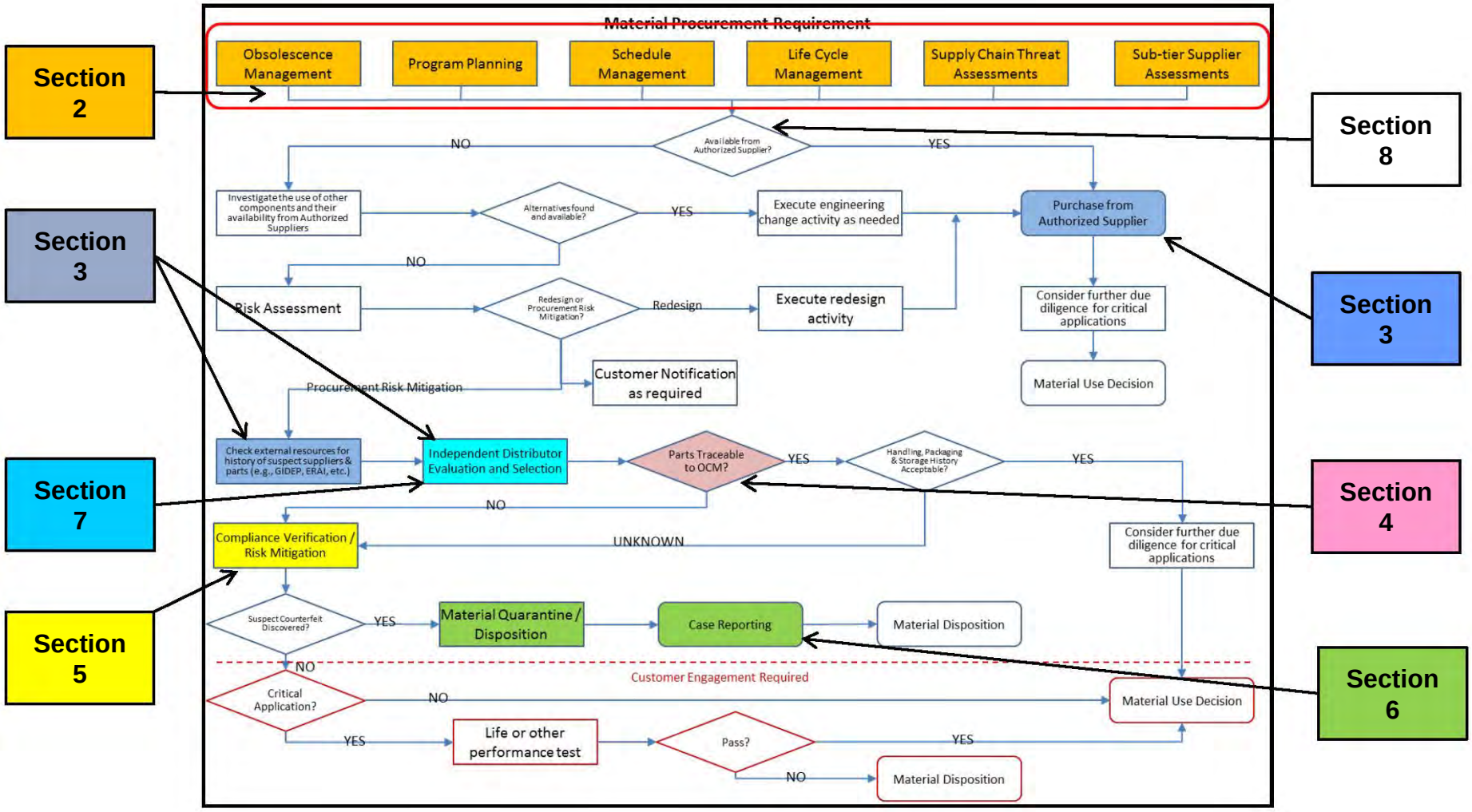
Counterfeit Parts Prevention Content (1 of 2)

Main Body
Executive Summary
1. Introduction
2. Design, Operation and Maintenance of Systems to Detect and Avoid Counterfeit Electronic Parts
3. Use and Approval of Suppliers
4. Traceability of Parts to Suppliers
5. Inspection and Testing of Electronic Parts, Including Criteria for Acceptance and Rejection
6. Reporting and Quarantining of Counterfeit Electronic Parts and Suspect Counterfeit Parts
7. Flow Down of Counterfeit Avoidance and Detection Requirements
8. Training of Personnel
9. Summary
10. Suggested Updates to Industry Standards

Aligns to the Released DFARS

Appendices
A – Training Resources
B – Best Practices and Lessons Learned
C – Observations and Driving Philosophies
D – Case Studies
E – How This Guide Fits In The Total Picture
F – CF Prevention Standards Applicability Analysis
H – Counterfeit Parts Process Audit Checklist
I – Acronyms
J – References

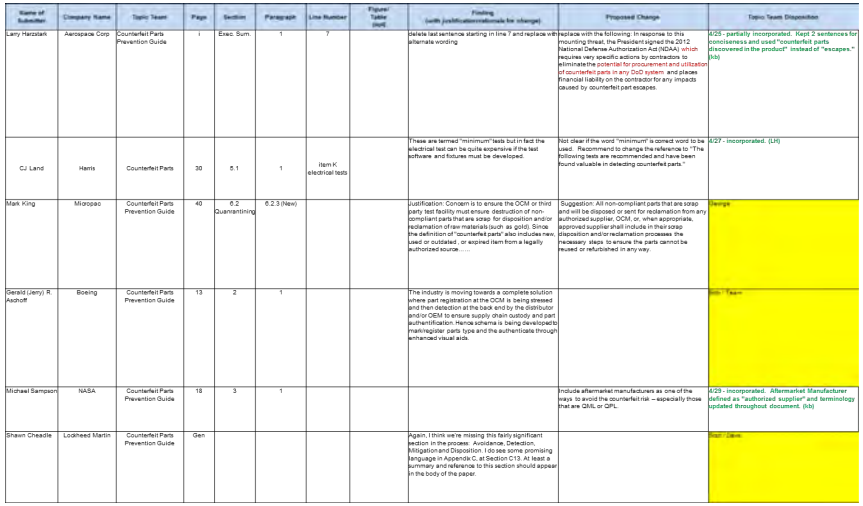
Counterfeit Parts Prevention Content (2 of 2)



Program Management and Procurement Flow

Workshop Objectives & Accomplishments

- Incoming objectives of workshop
  - *Brief team members on the released DFARS ruling and comparison to draft version*
  - *Identify changes needed to the document based on the released DFARS*
  - *Finalize ideas to be incorporated*
  - *Compare product with original charter*
  - *Disposition comments received*
  - *Obtain endorsement across team members for product and follow-on recommendations*

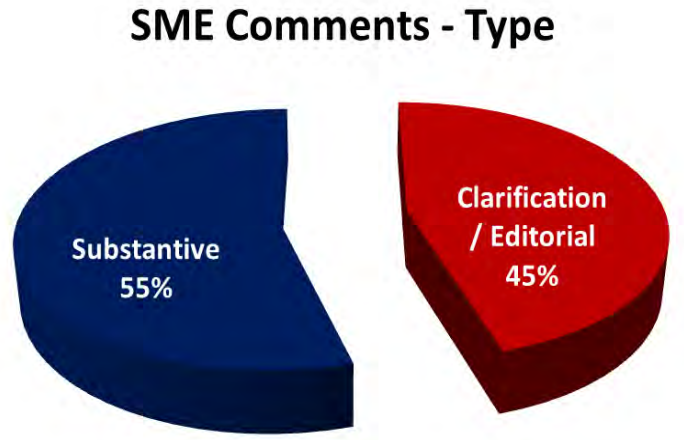


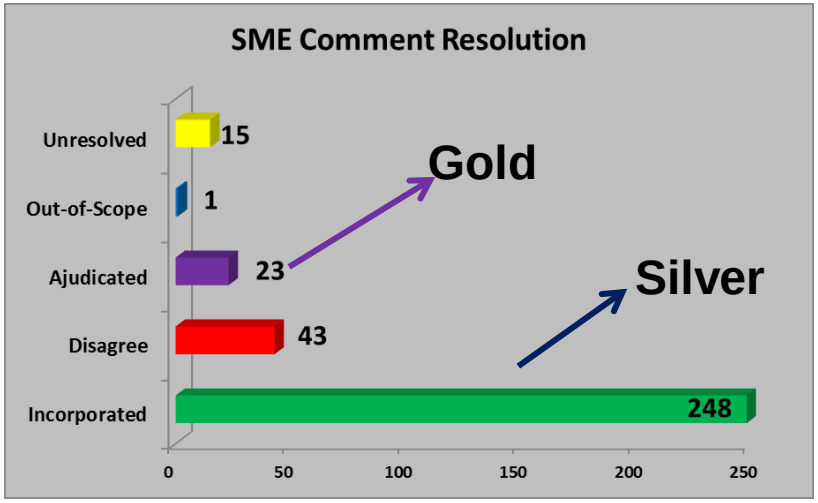
Name of Submitter	Company Name	Topic Team	Page	Section	Paragraph	Line Number	Figure/ Table (list)	Finding (with justification/rationale for change)	Proposed Change	Topic Team Disposition
Larry Harzstark	Aerospace Corp	Counterfeit Parts Prevention Guide	i	Exec. Sum.	1	7		delete last sentence starting in line 7 and replace with alternate wording	replace with the following: In response to this mounting threat, the President signed the 2012 National Defense Authorization Act (NDAA) which requires very specific actions by contractors to eliminate the potential for procurement and utilization of counterfeit parts in any DoD system and places financial liability on the contractor for any impacts caused by counterfeit part escapes.	4/28 - partially incorporated. Kept 2 sentences for conciseness and used "counterfeit parts discovered in the product" instead of "escapes." (kb)
CJ Land	Harris	Counterfeit Parts	30	5.1	1	Item K electrical tests		These are termed "minimum" tests but in fact the electrical test can be quite expensive if the test software and fixtures must be developed.	Not clear if the word "minimum" is correct word to be used. Recommend to change the reference to "The following tests are recommended and have been found valuable in detecting counterfeit parts."	4/27 - incorporated. (LH)
Mark King	Micropac	Counterfeit Parts Prevention Guide	40	6.2 Quarantining	6.2.3 (New)			Justification: Concern is to ensure the OCM or third party test facility must ensure destruction of non-compliant parts that are scrap for disposition and/or reclamation of raw materials (such as gold). Since the definition of "counterfeit parts" also includes new, used or outdated , or expired item from a legally authorized source.....	Suggestion: All non-compliant parts that are scrap and will be disposed or sent for reclamation from any authorized supplier, OCM, or, when appropriate, approved supplier shall include in their scrap disposition and/or reclamation processes the necessary steps to ensure the parts cannot be reused or refurbished in any way.	George
Gerald (Jerry) R. Ashoff	Boeing	Counterfeit Parts Prevention Guide	13	2	1			The industry is moving towards a complete solution where part registration at the OCM is being stressed and then detection at the back end by the distributor and/or OEM to ensure supply chain custody and part authentification. Hence schema is being developed to mark/register parts type and the authenticate through enhanced visual aids.		Team
Michael Sampson	NASA	Counterfeit Parts Prevention Guide	18	3	1				Include aftermarket manufacturers as one of the ways to avoid the counterfeit risk – especially those that are QML or QPL.	4/29 - incorporated. Aftermarket Manufacturer defined as "authorized supplier" and terminology updated throughout document. (kb)
Shawn Cheadle	Lockheed Martin	Counterfeit Parts Prevention Guide	Gen					Again, I think we're missing this fairly significant section in the process: Avoidance, Detection, Mitigation and Disposition. I do see some promising language in Appendix C, at Section C13. At least a summary and reference to this section should appear in the body of the paper.		Dept / Gloria

- Workshop Accomplishments
  - *Obtained buy-in from SMEs and team members*
  - *Path forward to closing remaining open items*
  - *Briefing by Attorneys from the DOJ Cybercrimes on prosecution of counterfeit cases and reporting of counterfeit occurrences*

SME Comment Summary

	SME Responders
Gov't Agencies / Contractors	17





Observations

1. Extremely wide distribution of SMEs
2. Drove improved pedigree and credibility of document
3. Identified gaps and areas requiring increased attention
4. Outstanding clarification and readability recommendations

DFARS Counterfeit Avoidance and Detection Criteria

Criteria	
(1)	Training of personnel
(2)	Inspection and testing
(3)	Processes to abolish counterfeit parts proliferation
(4)	Process for electronic part traceability
(5)	Use of original manufacturer or authorized sources
(6)	Reporting and quarantining
(7)	Methodologies to identify suspect counterfeit
(8)	Design, operation, and maintenance
(9)	Flow down
(10)	Process for improvement (new)
(11)	Screening of GIDEP (new)
(12)	Obsolescence management (new)

Notables:

- Electronics parts includes assemblies and embedded software / firmware
- Traceability
- Flow down to all sub-tier contractors
- GIDEP Access

Topic Follow-on Recommendations

- MAIW Follow-on Recommendations:
  - *"Malicious or destructive intent" considered out-of-scope for 2014*
    - 2015 product could incorporate these concepts, which may warrant different prevention and protection schemes
    - Subject to ITAR protection – Not for Public Release
  - *Develop a guideline document on selecting, qualifying, handling and verifying COTS assemblies including counterfeit prevention*
  - *Promote common database of supplier counterfeit audits, assessments, or surveys across industry*

Team Introductions

Core Team		
Company	**Participant**	
The Aerospace Corporation	David Meshel	
BAE Systems	Henry Livingston	
Ball Aerospace & Technologies Corp	Mike Kahler	
The Boeing Company	Lilian Hanna	
Lockheed Martin Corporation	Scot Lichty	Ken Baier
Northrop Grumman Electronic Systems	Bob Ricco	
Orbital Sciences Corporation	Greg Hafner	
Raytheon	George Young	Michael Woo
SSL	John Walker	
MDA	Fred Schipp	Barry Birdsong
NASA	Carlo Abesamis	

SME Team Introductions

SME Reviewers	
Company	**Participant**
The Aerospace Corporation	Larry Harzstark, Edward Ortiz, Terita Norton
Aerojet Rocketdyne	Dale Gordon
Ball Aerospace & Technologies Corp.	Bob Bodemuller
The Boeing Company	Gerald Aschoff
DCMA	Christopher Brust
DoD AT&L/RESE GIDEP Program	Jim Stein
DOJ / CCPIS	Matthew Lamberti
Harris Corporation	C. J. Land
Integra Technologies	Sultan Ali Lilani
Lockheed Martin Corporation	Shawn Cheadle
Micropac	Mark King
Moog, Inc.	Yehwan Kim
NASA	Brian Hughitt Michael Sampson
Northrop Grumman	Jim Creiman
Orbital	Robert Lasky

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Approved Electronically by:

Jacqueline M. Wyrwitzke, PRINC DIRECTOR
MISSION ASSURANCE SUBDIVISION
SYSTEMS ENGINEERING DIVISION
ENGINEERING & TECHNOLOGY GROUP

Russell E. Averill, GENERAL MANAGER
SPACE BASED SURVEILLANCE DIVISION
SPACE PROGRAM OPERATIONS
SPACE SYSTEMS GROUP

Jackie M. Webb-Larkin, SECURITY SPECIALIST III
GOVERNMENT SECURITY
SECURITY OPERATIONS
OPERATIONS & SUPPORT GROUP

Technical Peer Review Performed by:

Jacqueline M. Wyrwitzke, PRINC DIRECTOR
MISSION ASSURANCE SUBDIVISION
SYSTEMS ENGINEERING DIVISION
ENGINEERING & TECHNOLOGY GROUP

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Charles Abernethy
Aerojet
charles.abernethy@aerojet.com

David Adcock
Orbital
adcock.david@orbital.com

Aaron Apruzzese
ATK
aaron.apruzzese@atk.com

Carlo Abesamis
NASA
abesamis@jpl.nasa.gov

Robert Adkisson
Boeing
robert.w.adkisson@boeing.com

Chic Arey
NRO
areyc@nro.mil

Andrew Adams
Boeing
andrew.c.adams@boeing.com

Scott Anderson
Seaker
scott.anderson@seaker.com

Brent Armand
Orbital
Armand.Brent@orbital.com

Larry Arnett
Loral
arnett.larry@ssd.loral.com

Glenn Barney
Comdev-USA
glenn.barney@comdex-use.com

Robert Bodemuller
Ball
rbodemuller@ball.com

Ken Baier
Lockheed Martin
ken.b.baier@lmco.com

David Beckwith
NRO
beckwith@nro.mil

Silvia Bouchard
Northrop Grumman
silver.bouchard@ngc.com

Dean Baker
NRO
bakerdea@nro.mil

Theresa Beech
Metispace
tbeech@metispace.com

Wayne Brown
ULA Launch
wayne.brown@ulalaunch.com

Mark Baldwin
Raytheon
Mark.L.Baldwin@raytheon.com

Barry Birdsong
MDA
barry.birdsong@mda.mil

Christopher Brust
DCMA
Christopher.Brust@dcma.mil

Lisa Barboza
General Dynamics
Lisa.Barboza@gd-ais.com

Ruth Bishop
Northrop Grumman
ruth.bishop@ngc.com

Alexis Burkevics
Rocket
Alexis.Burkevics@rocket.com

Thomas Burns
NOAA
thomas.burns@noaa.gov

Will Caven
Loral
caven.will@ssd.loral.com

Jerald Cogen
FREQELEC
Jerald.Cogen@FreqElec.com

Edward Bush
Northrop Grumman
Edward.Bush@ngs.com

Shawn Cheadle
Lockheed Martin
shawn.cheadle@lmco.com

Bernie Collins
DNI
bernie.f.collins@dni.gov

Tim Cahill
Lockheed Martin
tim.cahil@lmco.com

Janica Cheney
ATK
janica.cheney@atk.com

Jeff Conyers
Ball
jconyers@ball.com

Kevin Campbell
Exelis Inc
kevin.campbell@exelisinc.com

Brian Class
Orbital
class.brian@orbital.com

Kevin Crackel
Aerojet
kevin.crackel@aerojet.com

Larry Capots
Lockheed Martin
larry.capots@lmco.com

Brad Clevenger
EMCORE
brad_clevenger@emcore.com

James Creiman
Northrup Grumman
James.Creiman@ngc.com

Stephen Cross
ULA Launch
stephen.d.cross@ulalaunch.com

Jaclyn Decker
Orbital
decker.jaclun@orbital.com

Susanne Dubois
Northrop Grumman
susanne.dubois@ngc.com

Shawn Cullen
JDSU
shawn.cullen@jdsu.com

Larry DeFillipo
Orbital
defillipo.aryy@orbital.com

David Eckhardt
BAE Systems
david.g.eckhardt@baesystems.com

Louis D'Angelo
Lockheed Martin
louis.a.d'angelo@lmco.com

Ken Dodson
SSL MDA
ken.dodson@sslmda.com

Robert Ellsworth
Boeing
robert.h.ellsworth@boeing.com

David Davis
SMC
David.Davis.3@us.af.mil

Tom Donehue
ATK
tom.donehue@atk.com

Matt Fahl
Harris Corporation
mfahl@harris.com

Douglas Dawson
NASA
douglas.e.dawson@jpl.nasa.gov

Mary D'Ordine
Ball
mdordine@ball.com

James Farrell
Boeing
james.t.farrell@boeing.com

Tracy Fiedler
Raytheon
tracy.m.fiedler@raytheon.com

Mike Floyd
General Dynamics
Mike.Floyd@gdc4s.com

Matteo Genna
SSL
matteo.genna@sslmda.com

Brad Fields
Orbital
fields.brad@orbital.com

David Ford
Flextronics
david.ford@flextronics.com

Helen Gjerde
Lockheed Martin
helen.gjerde@lmco.con

Sherri Fike
Ball
sfike@ball.com

Robert Frankievich
Lockheed Martin
robert.h.frankievich@lmco.com

Ricardo Gonzalez
BAE Systems
ricardo.gonzalez@baesystems.com

Richard Fink
NRO
richard.fink@nro.mil

Bill Frazier
Ball
wfrazier@ball.com

Dale Gordon
Rocket
dale.gordon@rocket.com

Bruce Flanick
Northrop Grumman
bruce.flanick@ngc.com

Jace Gardner
Ball
jgardner@ball.com

Chuck Gray
Fescorp
Chuckg@fescorp.com

Luigi Greco
Exelis Inc
luigi.greco@exelisinc.com

Bob Harr
Seaker
bob.harr@seaker.com

Paul Hopkins
Lockheed Martin
paul.c.hopkins@lmco.com

Gregory Hafner
Orbital
Hafner.Gregory@orbital.com

Frederick Hawthorne
Lockheed Martin
frederick.d.hawthorne@lmco.com

Kevin Horgan
NASA
kevin.horgan@nasa.gov

Joe Haman
Ball
jhaman@ball.com

Ben Hoang
Orbital
Hoang.Ben@orbital.com

Eugene Jaramillo
Raytheon
eugenejaramillo@raytheon.com

Lilian Hanna
Boeing
lilian.hanna@boeing.com

Rosemary Hobart
Hobart Machined
rosemary@hobartmachined.com

Dan Jarmel
Northrop Grumman
dan.jarmel@ngc.com

Harold Harder
Boeing
harold.m.harder@boeing.com

Richard Hodges
NASA
richard.e.hodges@jpl.nasa.gov

Robert Jennings
Raytheon
rjennings@raytheon.com

Mike Jensen
ULA Launch
mike.jensen@ulalaunch.com

Mike Kahler
Ball
mkahler@ball.com

Byron Knight
NRO
knightby@nro.mil

Amanda Johnson
Orbital
johnson.amanda@orbital.com

Yehwan Kim
Moog
ykim@moog.com

Hans Koenigsmann
SpaceX
hans.koenigsmann@spacex.com

Edward Jopson
Northrop Grumman
edward.jopson@ngc.com

Jeff Kincaid
Power
Jeffrey.Kincaid@pwr.utc.com

James Koory
Rocket
james.koory@rocket.com

Jim Judd
orbital
judd.jim@orbital.com

Mark King
Micopac
markking@micropac.com

Brian Kosinski
SSL
Kosinski.Brian@ssd.loral.com

Geoffrey Kaczynski
NEA Electronics
gkazynik@neaelectonics.com

Andrew King
Boeing
andrew.m.king@boeing.com

John Kowalchik
Lockheed Martin
john.j.kowalchik@lmco.com

Rick Krause
Ball
rkrause@ball.com

Chris Larocca
EMCORE
clarocca@emcore.com

Don LeRoy
Barden Bearings
dleroy@bardenbearings.com

Steve Krein
ATK
steve.krein@atk.com

Robert Lasky
Orbital
lasky.robert@orbital.com

Scot Lichty
Lockheed Martin
scot.r.lichty@lmco.com

Steve Kuritz
Northrop Grumman
steve.kuritz@ngc.com

Eric Lau
SSL
lau.eric@ssd.loral.com

Sultan Ali Lilani
Integra - Tech
sultan.lilani@integra-tech.com

Louise Ladow
Seaker
louise.ladow@seaker.com

Marvin LeBlanc
NOAA
Marvin.LeBlanc@noaa.gov

Josh Lindley
MDA
joshua.lindley@mda.mil

C J Land
Harris
cland@harris.com

Scott Lee
Northrop Grumman
Scott.lee@ngc.com

Henry Livingston
BAE Systems
henry.c.livingson@baesystems.com

Art Lofton
Northrop Grumman
Art.Lofton@ngc.com

Joan Lum
Boeing
joan.l.lum@boeing.com

John Mc Bride
Orbital
Mcbride.John@orbital.com

James Loman
SSL
james.loman@sslmda.com

Brian Mack
Orbital
mack.brian@orbital.com

Ian McDonald
BAE Systems
ian.a.mcdonald@baesystems.com

Jim Loman
SSL
loman.james@ssd.loral.com

Julio Malaga
Orbital
malaga.julio@orbital.com

Kurt Meister
Honeywell
kurt.meister@honeywell.com

Lester Lopez
Harris
llopez04@harris.com

Kevin Mallon
1-3 Com
Kevin.P.Mallon@1-3com.com

Jeff Mendenhall
MIT
mendenhall@ll.mit.edu

Frank Lucca
1-3 Com
frank.l.lucca@1-3com.com

Miroslav Maramica
Area 51
miroslav@area51esq.com

Jo Merritt
AVTEC
jmerritt@avtec.com

Charles Mills
Lockheed Martin
charles.a.mills@lmco.com

Deanna Musil
SSL
deanna.musil@sslmda.com

Mike Numberger
Navy
nurnberger@nrl.navy.mil

Edmond Mitchell
APL
edmond.mitchell@jhuapl.edu

Thomas Musselman
Boeing
thomas.e.musselman@boeing.com

Michael O'Brien
Exelis Inc
michael.obrien@exelisinc.com

Dennis Mlynarski
Lockheed Martin
dennis.mlynarski@lmco.com

John Nelson
Lockheed Martin
john.d.nelson@lmco.com

Michael Ogneovski
Exelis Inc
michael.ognenovski@exelisinc.com

George Mock
NYE Lubricants
gbm3@nyelubricants.com

Dave Novotney
EBA
dbnovotney@eba-d.com

Debra Olejniczak
Northrop Grumman
Debra.Olejniczak@ngc.com

Nancy Murray
Safety Batteries
Nancy.murray@saftbatteries.com

Ron Nowlin
EaglePicher
ron.nowlin@eaglepicher.com

Larry Ostendorf
psemc
Lostendorf@psemc.com

Anthony Owens
Raytheon
anthony_owens@raytheon.com

Mark Pazder
Moog
mpazder@moog.com

Kay Rand
Northrop Grumman
kay.rand@ngc.com

Joseph Packard
Exelis Inc
Joseph.packard@exelisinc.com

Steven Pereira
APL
Steven.Pereira@jhuapl.edu

David Rea
BAE Systems
david.a.rea@baesystems.com

Peter Pallin
SSL
peter.pallin@sslmda.com

Richard Pfisterer
APL
Richard.Pfisterer@jhuapl.edu

Forrest Reed
EaglePicher
forrest.reed@eaglepicher.com

Richard Patrican
Raytheon
Richard.A.Patrican@raytheon.com

Angela Phillips
Raytheon
amphillips@raytheon.com

Thomas Reinsel
Raytheon
thomas_j_reinsel@raytheon.com

Paulette Megan
Orbital
paulette.megan@orbital.com

Dave Pinkley
Ball
dpinkley@ball.com

Bob Ricco
Northrop Grumman
bob.ricco@ngc.com

Mike Rice
RT Logic
mrice@rtlogic.com

John Rotondo
Boeing
john.l.rotondo@boeing.com

Michael Sampson
NASA
michael.j.sampson@nasa.gov

Sally Richardson
Orbital
richardson.sally@orbital.com

William Rozea
Rocket
william.rozea@rocket.com

Victor Sank
NASA
victor.j.sank@nasa.gov

Troy Rodriquez
Sierra Microwave
troy_rodriquez@sierramicrowave.com

Dennis Rubien
Northrop Grumman
dennis.rubien@ngc.com

Don Sawyer
AVNET
don.sawyer@avnet.com

Ralph Roe
NASA
ralph.r.roe@nasa.gov

Larry Rubin
SSL
Rubin.larry@ssd.loral.com

Fred Schipp
MDA - Navy
frederick.schipp@navy.mil

Mike Roller
UTAS
mike.roller@utas.utc.com

Lane Saechao
Rocket
lane.saechao@rocket.com

Jim Schultz
Boeing
james.w.schultz@boeing.com

Gerald Schumann
NASA
gerald.d.schumann@nasa.gov

Andrew Shroyer
Ball
ashroyer@ball.com

Jerry Sobetski
Lockheed Martin
jerome.f.sobetski@lmco.com

Annie Sennet
Safety Batteries
Annie.Sennet@saftbarries.com

Fredic Silverman
HSTC
fsilverman@hstc.com

LaKeisha Souter
Northrop Grumman
lakeisha.souter@ngc.com

Michael Settember
NASA
michael.a.settember@jpl.nasa.gov

Rob Singh
SSL
rob.singh@sslmda.com

Jerry Spindler
Execlis Inc
Jerry.Spindler@exelisinc.com

Tom Sharpe
SMT Corp
tsharpe@smtcorp.com

Kevin Sink
TTINC
kevin.sink@ttinc.com

Peter Stoltz
TX Corp
pstoltz@txcorp.com

Jonathan Sheffield
SSL
jonathan.sheffield@sslmda.com

Melanie Sloane
Lockheed Martin
melanie.sloane@lmco.com

Thomas Stout
Northrop Grumman
thomas.stout@ngc.com

George Styk
Exelis Inc
george.styk@exelisinc.com

Ghislain Turgeon
SSL
ghislain.turgeon@sslmda.com

Michael Verzuh
Ball
mverzuh@ball.com

David Swanson
Orbital
swanson.david@orbital.com

Deborah Valley
MIT
deborah.valley@ll.mit.edu

John Vilja
Power UTC
jussi.vilja@pwr.utc.com

Mauricio Tapia
Oribital
tapia.mauricio@orbital.com

Fred Van Milligen
JDSU
fvanmilligen@jdsu.com

Vinvent Stefan
Orbital
vincent.stefan@orbital.com

Jeffrey Tate
Raytheon
jeffery_tate@raytheon.com

Marvin VanderWeg
SpaceX
marvin.vanderwag@spacex.com

James Wade
Raytheon
james.w.wade@raytheon.com

Bill Toth
Northrop Grumman
william.toth@ngc.com

Gerrit VanOmmering
SSL
gerrit.vanommering@sslmda.com

John Walker
SSL
JohnF.Walker@sslmda.com

Brian Weir
Booz Allen Hamilton
weir_brian@bah.com

Charlie Whitmeyer
Orbital
whitmeyer.charlie@orbtial.com

George Young
Raytheon
gyoung@raytheon.com

Arthur Weiss
Power UTC
arthur.weiss@pwr.utc.com

Michael Woo
Raytheon
michael.woo@raytheon.com

Craig Wesser
Norhtrop Grumman
craig.wesser@ngc.com

Larry Wray
SSL
wray.larry@ssd.loral.com

Dan White
Comdex-USA
dan.white@comdev-usa.com

Mark Wroth
Northrop Grumman
mark.wroth@ngc.com

Thomas Whitmeyer
NASA
tom.whitmeyer@nasa.gov

Jian Xu
Aeroflex
jian.xu@aeroflex.com

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