



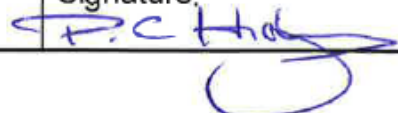
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TITLE: Counterfeit Electronic Parts; Avoidance, Detection, Mitigation and Disposition Policy		Date	Issue	Page
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MEGGITT AVIONICS

COMPANY QUALITY CONTROL INSTRUCTION

QCI 220

**COUNTERFEIT ELECTRONIC PARTS OR
MATERIEL; AVOIDANCE, DETECTION,
MITIGATION AND DISPOSITION POLICY**

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1. INTRODUCTION

- 1.1 This document forms the control plan to prevent counterfeit electronic parts and counterfeit materiel entering MAV products.
- 1.2 MAV designs require genuine parts to deliver equipment performance, reliability and safety. If non-genuine parts are used, the equipment Declaration of Design and Performance is null and void. Genuine parts have known performance and adhere to the manufacturer's quality control plans, whereas counterfeit parts have unknown performance reliability and often limited quality controls. The cost of counterfeit parts entering the supply chain is greater than simple replacement of the counterfeit parts. The potential consequences of using counterfeit parts can be as severe as the loss of an aircraft.
- 1.3 MAV have developed this counterfeit parts or materiel control plan to outline what processes MAV or a supplier to MAV must be compliant with, to mitigate the risk, disposition and reporting of counterfeit parts or materiel.
- 1.4 Any company that procures electronic parts or materiel for MAV products must have a plan to ensure counterfeit parts/ materiel are not received into inventory, utilized in manufacturing or inadvertently sold to other parties. SAE AS5553 describes the elements needed in a counterfeit parts control plan, including purchasing processes, purchasing information and material control and SAE AS6174 describes the elements needed in a counterfeit materiel control plan, including purchasing processes, purchasing information and materiel control.

2. REFERENCE DOCS

- SAE AS5553: Aerospace Standard; Counterfeit Electronic Parts; Avoidance, Detection, Mitigation and Disposition
- SAE AS6174: Counterfeit Materiel; Assuring Acquisition of Authentic and Conforming Materiel
- APP05: Supplier Quality Assurance Requirements

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3. TERMS AND ABBREVIATIONS

MAV	Meggitt Avionics
ASL	Approved Suppliers List
DMSMS	Diminishing Manufacturing Sources and Material Shortages
OCM	Original Component Manufacturer
OEM	Original Equipment Manufacturer
QSLD	Qualified Suppliers List for Distributors
QSLM	Qualified Supplier List for Manufactures
UPN	Unapproved Parts Notifications
Materiel	Materiel in this standard refers to all material, parts, assemblies, and other procured items, except for electronic parts.
UKEA	United Kingdom Electronics Alliance
GIDEP	Government – Industry Data Exchange Program
AIA	Aerospace Industries Association
CACP	Coalition against Counterfeiting and Piracy

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4. COUNTERFEIT PARTS CONTROL PLAN

This section deals with electronic components.

- 4.1 This counterfeit parts control plan outlines which processes must be used to mitigate the risk, disposition and reporting of counterfeits. This is applicable to both MAV directly and to the extended MAV supply chain. SAE AS5553 is the electronic/ electrical reference for this activity. SAE AS5553 describes the elements needed in a counterfeit parts control plan, including purchasing processes, purchasing information and material control.
- 4.2 All suppliers to MAV must have a plan to ensure counterfeits are not dispatched to MAV, utilized in manufacturing or inadvertently sold to other parties.
- 4.3 All suppliers of electrical or electronic parts or assemblies to MAV must have a SAE AS5553 compliant control plan, detailing the processes used for avoidance, detection, risk mitigation, disposition and reporting of counterfeit parts, including:
 - 4.3.1 Assessing the long-term availability of authentic parts and part sources.
 - 4.3.2 Having an obsolescence management program in place to manage the life cycle of the components being sourced. (This applies only to supplies to MAV of PCBAs, not component suppliers.)
 - 4.3.3 Assessing potential sources of supply to determine the risk of receiving counterfeit parts.
 - 4.3.4 Maintaining a list of screened and approved suppliers. A quality process assessment should be performed to verify that each distributor has the necessary processes in place to be able to mitigate the risk of receiving, storing and shipping potential counterfeit devices.
 - 4.3.5 Clearly stating in each purchase order the preference to procure directly from OCM's or authorized suppliers.
 - 4.3.6 Continuously monitoring of these sources to verify that they are following the requirements.
 - 4.3.7 Specifying the ability to trace the pedigree of all components to their original or aftermarket manufacturer in line with App 05 para 10.8.

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- 4.3.8 As per specific contract requirements a quality plan that assures detection of counterfeit parts, including minimum inspection and test requirements.
- 4.3.9 Having a documented process to initiate an investigation once counterfeit parts are detected to include methods of segregating and disposing of these parts.
- 4.3.10 Having a documented process to report suspected counterfeit product to MAV.

Appendix A of this document, "AS5553 Compliance Matrix" can be used by the supplier to conduct a self assessment against their counterfeit parts controls, in order to identify and address any gaps.

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5. COUNTERFEIT MATERIEL CONTROL PLAN

This section deals with material, parts, assemblies and other procured items excluding electronic components.

- 5.1 This counterfeit materiel control plan outlines which processes must be used to mitigate the risk, disposition and reporting of counterfeits. This is applicable to both MAV directly and to the extended MAV supply chain. SAE AS6174 is the electronic/ electrical reference for this activity. SAE AS6174 describes the elements needed in a counterfeit materiel control plan, including purchasing processes, purchasing information and material control.
- 5.2 Suppliers of materiel to MAV must meet the requirements detailed in APP 05 paragraph 10.8 Annex A for procurement of raw material and Annex B for the procurement of standard and propriety parts
- 5.2.1 The materiel authenticity assurance processes shall maximize availability of authentic and conforming, originally designed and/or qualified materiel throughout the product's life cycle, including management of materiel obsolescence.
- 5.2.2 Assessing potential sources of supply to determine the risk of receiving counterfeit parts.
- 5.2.3 Maintaining a list of screened and approved suppliers.
- 5.2.4 Clearly stating in each purchase order the preference to procure directly from original manufacturers, authorized suppliers or other legally authorized sources who are on the approved supplier/source register/list.
- 5.2.5 Periodic monitoring of these sources to verify that they are following the requirements.
- 5.2.6 Specify item level traceability, where appropriate, In accordance with App 05 Paragraph 10.8
- 5.2.7 And specify flow-down of applicable requirements of this document to appropriate contractors and their sub-contractors.
- 5.2.8 Report suspected counterfeit product to MAV APP 05 Paragraph 10.8.
- 5.2.9 As per specific contract requirements a quality plan that assures detection of counterfeit parts, including minimum inspection and test requirements.

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Appendix B of this document, "AS6174 Compliance Matrix" can be used by the supplier to conduct a self assessment against their counterfeit materiel controls, in order to identify and address any gaps.

- 5.3 The documented processes shall assure detection of any counterfeit materiel prior to formal product acceptance. The rigor of the verification process shall be commensurate with product risk. Product risk is determined by the criticality of the materiel and the assessed likelihood of receiving counterfeit materiel.

- 5.4 The documented processes shall address the detection, verification, and control of any in-process (post acceptance) and in-service suspect counterfeit materiel.

- 5.5 All materiel utilized under the contract shall be traceable to the time and place of production. Records of materiel shall provide the degree of traceability required to enable verification, at any point from raw material to final product, of all aspects of materiel utilization and disposal. The documented processes shall specify methods for manufacturers to:
 - 5.5.1 Control excess and nonconforming materiel to prevent it from entering the supply chain under fraudulent circumstances.
 - 5.5.2 Control/destroy any suspect or confirmed counterfeit materiel to preclude its use or re-entry into the supply chain.
 - 5.5.3 Put a process in place to ensure the supply chain is not compromised by any material being returned; manufactures/suppliers and their approved supply chain shall implement an effective anti-fraudulent/counterfeit returns process, which checks and validates all items returned as authentic.

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6. COUNTERFEIT PART DISPOSITION

- 6.1 Proper disposition of known or suspected counterfeit parts prevents their reintroduction into the supply chain. If a part is returned to the supplier, whether an authorized distributor, OCM, or independent broker, it is subject to resale to meet market needs, this resale of returned product has the potential to reintroduce known or suspected counterfeit parts into the supply chain; however returning counterfeit parts to the supplier allows counterfeiters to learn that their attempts were detected.

- 6.2 Best Practice recommends destruction or mutilation of scrap parts and materials to prevent their resale or re-introduction into the supply chain. Acceptable methods include grinding, burning, removal of a major integral feature, permanent distortion of parts and materials, cutting a significant size hole with a cutting torch or saw, melting, sawing into many small pieces and removing manufacturer identification, part, lot, batch and serial number. Removing the identification and part markings without rendering the part useless is not an acceptable option and increases the opportunity for counterfeiting. If suspected counterfeit parts are discovered within Meggitt manufacturing processes these parts must be identified, tagged and segregated and placed in MRB (Material Review Board) until a determination is made as to their suitability. See Appendix C for Meggitt Avionics MRB process.
Suppliers to MAV must have their own internal MRB equivalent process and suspect parts must be identified, tagged and segregated and placed in this process until a determination is made as to their suitability.

- 6.3 If a part has been reported in a UPN, suppliers to MAV are advised to quarantine the part to prevent installation until a determination can be made regarding its eligibility for installation, or if already installed in a product, that product should be quarantined until a determination can be made.

- 6.4 MAV Suppliers should develop their internal disposition plan with the assistance of their procurement, legal and quality personnel. The disposition plan should also address supplier payment conditions when counterfeit material is discovered.

- 6.5 Any confirmed counterfeit parts discovered must be reported by the discoverer to UKEA or GIDEP as per Appendix G of AS5553.

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7. COMPONENT OBSOLESCENCE

- 7.1 MAV and their suppliers should take proactive steps to deal with component obsolescence by using component lifecycle analysis tools based on lifecycle prediction curves. This will help predict when components are in the last phases of their lifecycle and are heading towards obsolescence and may become difficult to obtain and require acquisition through non-franchised sources.
- 7.2 Component lifecycle analysis tools should also be used to prevent new designs from using parts in the mature phase of their lifecycle and to monitor the components that are used in production for lifecycle changes.

8. TRAINING

- 8.1 MAV Suppliers should develop and conduct training for their employees in the areas of the procurement, detection, reporting and disposition of counterfeit parts.
- 8.2 This training should include:
 - 8.2.1 Training to allow participants to learn about different types of commercial and industry nonconforming, suspect, and counterfeit items also how these items are entering into the supply chain, the economic impact these items have, and how to develop basic skills for identifying possible non-conforming and suspect counterfeit items.
 - 8.2.2 Also, how to mitigate the risks involved in the procurement of these items, testing/inspection procedures and how to report these items through proper channels.
- 8.3 Companies should take advantage of industry symposiums and the activities of industry organizations and standards organizations to learn about counterfeit parts and how to prevent them from entering their supply chain.
- 8.4 Some sources of information are AIA, the CACP, The Centre for Advanced Life Cycle Engineering, American National Standards Institute and NASA.

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9. COMPONENT VERIFICATION THROUGH DPA

- 9.1 Where component traceability is insufficient or non-existent MAV allows the authentication through destructive physical analysis. The rigor of the verification process shall be commensurate with product risk.
- 9.2 Each case must be handled individually. A Meggitt Deviation Application (form CAS303, available from http://www.meggitt-avionics.co.uk/about_us/quality.aspx) must be applied for. MAV will then determine the suitable level of verification testing required. An approved copy of the application must be received by the applicant BEFORE the verification testing can be started.
- 9.3 Product risk is determined by the criticality of the part and the assessed likelihood of receiving a counterfeit part.
- 9.4 Examples of verification actions include, review of data deliverables, visual inspection, physical measurements, non-destructive evaluation and destructive testing. (marking permanency, x-ray, destructive physical analysis, thermal cycling, hermeticity, burn-in.)

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10. APPENDIX A: AS5553 COMPLIANCE MATRIX

AS5553 Section		Compliance Yes/ No
4.1	Does the supplier have a 'Counterfeit Electronic Parts Control Plan'?	
4.1.1	Does this plan provide detail on how the supplier will maximise availability of authentic, originally designed and/or qualified parts throughout the products life cycle, including parts obsolescence? Appendix 'A' of AS5553 provides guidance.	
4.1.2 a	Does this plan ensure potential suppliers are assessed to determine the potential risk of receiving counterfeit parts?	
4.1.2 b	Does the plan instruct to maintain a Register of Approved Suppliers? Appendix 'B' of AS5553 provides guidance.	
4.1.2 c	Does the plan specify a preference to procure direct from the OCM or authorised distributors who are on the 'Register of Approved Suppliers.'	
4.1.2 d	Does the plan require the monitoring of approved suppliers to ensure they are maintaining effective counterfeit prevention measures?	
4.1.2 e	Does the plan provide a method for mitigating the risk of procuring counterfeit parts when using suppliers other than the OCM or authorised distributors?	
4.1.2 f	Does the plan specify traceability to the OCM that identifies the name and location of all of the supply chain intermediaries? Appendix 'C' of AS5553 provides guidance.	
4.1.2 g	Does the plan specify flow down of applicable requirements to applicable contractors and their sub-contractors?	
4.1.3	Does the plan specify that contracts or purchase orders contain quality requirements to minimise the risk of being provided counterfeit parts? Appendix 'D' of AS5553 provides guidance.	
4.1.4	Does the plan specify the verification of purchased product, and is this verification commensurate with the risk of receiving counterfeit parts? Appendix 'E' of AS5553 provides guidance.	
4.1.5	Does the plan address the detection, verification and control of in process (post acceptance) and in-service (shipped) suspected counterfeit parts.	
4.1.6	Does the plan specify methods to prevent suspect or confirmed counterfeit components from being used or from re-entering the supply chain? Appendix 'F' of AS5553 provides guidance.	
4.1.7	Does the plan specify a reporting procedure for counterfeit parts? Appendix 'G' of AS5553 provides guidance.	

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11. APPENDIX B: AS6174 COMPLIANCE MATRIX

AS6174 Section		Compliance Yes/ No
3.1	Does the supplier have a 'Materiel Authenticity Assurance Plan'?	
3.1.1	Does this plan provide detail on how the supplier will maximise availability of authentic, originally designed and/or qualified parts throughout the products life cycle, including management of materiel obsolescence? Appendix 'D' of AS6174 provides guidance.	
3.1.2 a	Does this plan ensure potential suppliers are assessed to determine the potential risk of receiving counterfeit materiel?	
3.1.2 b	Does the plan instruct to maintain a Register of Approved Suppliers? Appendix 'B' of AS6174 provides guidance.	
3.1.2 c	Does the plan specify a preference to procure direct from the Original Manufacturer, authorised suppliers who are on the 'Register of Approved Suppliers.'	
3.1.2 d	Does the plan require the monitoring of approved suppliers to ensure they are maintaining effective counterfeit prevention measures?	
3.1.2 e	Does the plan provide a method for mitigating the risk of procuring counterfeit parts when using suppliers other than the OM or authorised distributors?	
3.1.2 f	Does the plan specify traceability to the Original Manufacturer that identifies the name and location of all of the supply chain intermediaries? Appendix 'C' of AS6174 provides guidance.	
3.1.2 g	Does the plan specify flow down of applicable requirements to applicable contractors and their sub-contractors?	
3.1.3	Does the plan specify that contracts or purchase orders contain quality requirements to minimise the risk of being provided counterfeit materiel? Appendix 'D' of AS6174 provides guidance.	
3.1.4	Does the plan specify the verification of purchased product, and is this verification commensurate with the risk of receiving counterfeit parts? Appendix 'E' of AS6174 provides guidance.	
3.1.5	Does the plan address the detection, verification and control of in process (post acceptance) and in-service (shipped) suspected counterfeit materiel.	
3.1.6	Does the plan specify methods to prevent suspect or confirmed counterfeit components from being used or from re-entering the supply chain? Appendix 'F' of AS6174 provides guidance.	
3.1.7	Does the plan specify a reporting procedure for counterfeit parts? Appendix 'G' of AS6174 provides guidance.	

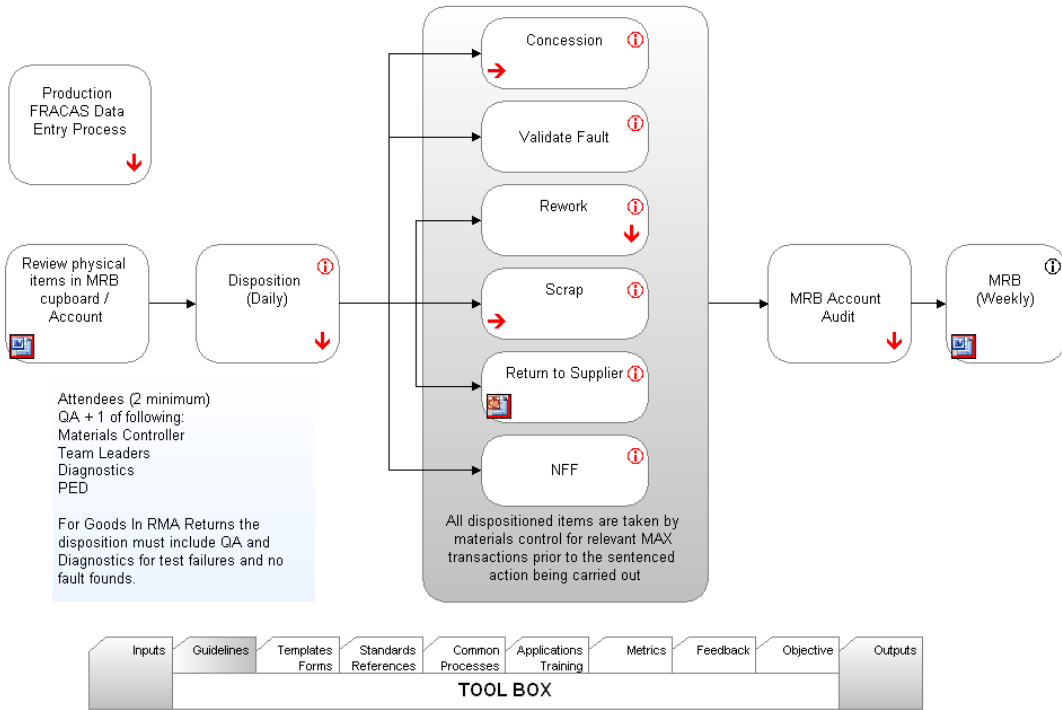
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12. APPENDIX C: MAV MRB PROCESS

Meggitt Avionics

Material Review Board



Sponsor: *Simon Riddiford*

Process Owner:

Diagram Reference: (3,50)

Issue: 1.00

ENDS