TechAmerica STD-0016
DMSMS Management Plan Industry Standard Update

Boeing Research & Technology
November 3, 2015
Agenda

- Background and Status on STD-0016
- Plan for Verification Criteria
- Boeing DMSMS Implementation
TechAmerica Avionics Process Management Committee (APMC) recognized need for a DMSMS Industry Standard

- APMC only had guidance information on DMSMS
- Industry Standard for Electronic Component Management (EIA-4899) provided little detail on DMSMS Management requirements

APMC started activity to develop DMSMS Industry Standard in May 2010.

- Joint Industry/Government team from the APMC and the Parts Standardization & Management Committee (PSMC) formed to develop Standard
  - PSMC provided opportunity for significant DoD participation
  - Opened the possibility of DoD “Adopting” the Standard after release

Document Timeline

- Final draft submitted to APMC for Balloting on March 12, 2011
- Document Released by TechAmerica in August 2011
- ANSI approval as Industry Standard on January 26, 2012
- Adopted by DoD on February 24, 2012
Purpose of the Standard was to define the minimum requirements of a DMSMS Management Plan

- Describe a proactive DMSMS Process
- Life Cycle focus covering Design, Manufacturing and Support
- Intended for System Integrators, Original Equipment Manufacturers and Logistic Service Providers of Aerospace and Hi-Rel equipment
- Document will not contain detailed “how to” language on implementing specific requirements
- Leverage existing best practices documented by Industry
- Additional guidance provided in Annexes and also reference other DMSMS Guidance Documents (SD-22, GEB-1)
Background and Status

Technical Requirements

- **5.1** DMSMS Program Infrastructure
- **5.2** Subcontractor DMSMS Management Strategy
- **5.3** Sustainment DMSMS Strategy
- **5.4** Design Concepts to Minimize DMSMS Risk & Impact
- **5.5** DMSMS Monitoring and Surveillance
- **5.6** Resolving DMSMS Issues
- **5.7** DMSMS Risk Assessments

Resolved DMSMS Issue

- Track and Implement Changes
- Adjust Roadmaps and Insertion Plans

Requirement for DMSMS Plan
APMC has also approved a Project to develop Verification Criteria for STD-0016

- Establish a consistent methodology for reviewing Contractor Plans
- Potential for Third Party Certification for DMSMS Management Plans/Processes
- Consistent with APMC approach for Lead-free and Counterfeit Parts

Approach for Verification Criteria

- Model after AS6462 for Counterfeit Risk Mitigation Plans
- Revise Section 5 (Technical Requirements) of STD-0016 to allow easier development of Verification Criteria
- Use Industry/Government Team for developing criteria
- Include Verification Criteria in an Appendix in a new Rev A update of STD-0016
## Verification Criteria

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<tr>
<th>ID Number</th>
<th>Section</th>
<th>SHALL Statement/Requirement</th>
<th>Verification Criteria Notes/Comments</th>
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| 4         | 5.1.1   | The Plan **shall** document the organization (for the purposes of this document the term “DMSMS Team” is used to identify this organization) used by the Plan Owner to manage DMSMS and identify the primary DMSMS point of contact or focal. | • Identify organization responsible for managing DMSMS  
• List team representatives (by function, not name). This list can also document roles/responsibilities (Req #5)  
• Bullet list in 5.1.1 should be used as guidance for what functions should be included on DMSMS Team (it's not required to include all of these)  
• Identify who focal is (by function, not name)  
• Org chart would satisfy requirement  
• Customer can be included as part of team to meet Req #6  
• Subcontractors may be included on team if applicable (Req #10)  
• Any function referenced in meeting section 5 requirements should be listed in the Org Structure |
| 5         | 5.1.1   | The roles and responsibilities of the DMSMS Team **shall** be documented in the Plan.                                                                              | • Brief description for each function listed in Org Structure (Req #4)  
• Probably makes sense for this to be combined with Req #4 in most cases  
• The Decision Making authority needs to be identified |
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| 17        | 5.5.1   | The Plan **shall** document the process used to monitor parts and materials for EOL and discontinuance notices. | - List in 5.5.1 provides example of elements that should be included in Plan – it is not required to address all of them  
- Describe process for obtaining BOM information for monitoring  
- Describe the sources used by Plan Owner to monitor parts and materials  
- Description of the role that Tools play in the Monitoring process but do not need to list 3rd Party Tools by name  
- Combination of sources can be used. Different part or material types can use different sources.  
- Showing list of sources or a network diagram is acceptable  
- Manual queries of suppliers is acceptable but plan should provide some details on how this is achieved and where the responses are stored/documentated  
- Plan should include scope of what is being actively monitored. Rationale for deciding not to monitor specific part or material types should be included.  
- If COTS equipment is used, process for tracking obsolescence must be provided |
| 19        | 5.5.2   | The Plan **shall** document the steps the Plan owner takes to process alerts generated by the Monitoring process… | - Basic process should include steps to (1) verify item is obsolete and has not been previously addressed, (2) obtain relevant information to support the resolution process  
- Process may differ depending on the type of part going obsolete |
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| 22        | 5.6.1   | The Plan **shall** document the processes used by the Plan Owner to assess the impact of all verified DMSMS issues… | • Process description should include how Plan Owner achieves the following (1) identify all used-on equipment or applications, (2) potential impact to Production or Sustainment for each application  
• Provide description of the action taken if assessment determines there is no impact |
| 24        | 5.6.2   | This process **shall** include a Trade Study and Business Case which considers total life cycle costs and not just implementation costs of potential DMSMS solutions. | • Plan should describe the Trade Study process, reference to an external document is acceptable provided document is available for review  
• Plan should describe how a Business Case is created to support the Trade Study, reference to an external document is acceptable provided document is available for review  
• Business Case can be incorporated in Trade Study  
• Business Case must address total life cycle costs  
• Note that list of potential solutions in 5.6.2 represent solutions that could be included in the Trade Study process. It is not required that all of these are included  
• Conditions where a Trade Study or Business Case is not required should be documented – for example if a known FFF replacement exists it may be used immediately |
| 26        | 5.6.2   | If the Plan owner allows purchases from the Broker Market, then the Plan **shall** also describe the process used to mitigate the risk of receiving counterfeit parts or materials. | • Process should be compliant with AS5553 or equivalent  
• If Broker purchases not allowed then this requirement is not applicable – Plan must state this explicitly  
• Can reference Plan Owner Counterfeit Parts Risk Mitigation Plan/Process |
Verification Criteria

Looking at revisions to Section 5 (Technical Requirements)

- Eliminate and/or consolidate the number of SHALL statements in the document
  - Repeated/redundant SHALL statements
  - Identify and eliminate unverifiable SHALL statements

- Reduce the amount of guidance information included in the requirements section of the Standard
  - Consistent approach with recent revisions to SAE Standards
Boeing Implementation

Developing Command Media (Business Process Instruction) for DMSMS Management Process

- Update of a lower level BDS Process Guide based on BDS Program “Best Practices” and our internal guidance documents
- Consistent with requirements in STD-0016
- Meets intent/objectives of SD-22
- New BPI applies to BDS (Military/Space) and BCA (Commercial Airplane)
Boeing Implementation

DMSMS Process Flow

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<th>Who</th>
<th>Input</th>
<th>Process</th>
<th>Output</th>
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<tbody>
<tr>
<td>Program Management</td>
<td>Requirement for DMSMS Management</td>
<td>1. Define DMSMS Management Program Infrastructure</td>
<td>DMSMS Management Plan</td>
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<tr>
<td>DMSMS Team</td>
<td></td>
<td>2. Develop Subcontractor DMSMS Management Strategy</td>
<td>Program Works to DMSMS Plan</td>
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<tr>
<td>Supplier</td>
<td>2.2 DMSMS SSOW and Data Items</td>
<td>3. Identify DMSMS Resistant Design Concepts</td>
<td>Subcontractor Works to Approved DMSMS Process</td>
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<td>4. Define DMSMS Status Monitoring</td>
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<td>5. Develop DMSMS Problem Resolution</td>
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<td>6. Develop DMSMS Risk Assessments</td>
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<td>7. Identify DMSMS Process Metrics</td>
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<td>8. Develop DMSMS Management Plan</td>
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<td>DMSMS Monitoring Results</td>
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Boeing Commercial Airplane flowing down requirement to Subcontractors to have STD-0016 compliant process in place

- Element of the overall BCA Electronic Component Management strategy which requires subcontractors to have the following plans in place:
  - Electronic Component Management Plan (EIA-4899)
  - Lead-free Control Plan (GEIA-STD-0005-1)
  - Counterfeit Part Risk Mitigation Plan (AS5553)
  - Obsolescence Management Plan (STD-0016)
- Requirement in all new BCA Contracts
- Subcontractors submitting plans to BCA for review