



July 1, 2010

Captain David P. Johnson
Commander
Defense Contract Management Agency
Boeing St. Louis Operations
325 J.S. McDonnell Boulevard
Hazelwood, Missouri 63042

Dear Captain Johnson:

The Aerospace Industries Association (AIA), on behalf of its over 300 member companies, is pleased to respond to your request for comments on the draft *Product Verification and Material Process Review Checklist*. AIA companies embody every high-technology manufacturing segment of the U.S. aerospace and defense industry from commercial aviation and avionics, to manned and unmanned defense systems, to space technologies and satellite communications.

While we are unsure how the Government might choose to implement the checklist, as no proposed contract language or prescriptive language has been provided, it is clear that implementing procedures consistent with the checklist will add costs to the process of producing products for the warfighter. We have not undertaken a cost analysis of the required procedures, but believe such an analysis should be performed as part of the cost benefit analysis that should precede the implementation of any such requirement.

The certainty of increased costs mitigates against broad implementation of the checklist and required procedures. We recommend discussions with industry concerning application (prescriptive language) and contract language that might be required to support narrow and selective implementation.

In addition to the increased requirements and attendant cost impact, we envision suppliers exiting the DoD market to focus on their commercial business.

Thank you for the opportunity to comment on this checklist. The attachment outlines our recommended changes for your consideration.

Sincerely,

A handwritten signature in cursive script that reads 'Susan K. Tonner'.

Susan K. Tonner
Assistant Vice President, Acquisition Policy

ATTACHMENT

General comments:

- Recommend referencing the applicable requirement for each element of this audit checklist. See PART I element MR3.h as an example.
- Recommend defining the terms “supplier” and “sub-tier supplier” at the beginning of the checklist because they appear to be used interchangeably throughout the checklist.
- Recommend scoping/defining “raw materials”.
- Recommend adding clarification of the term “contract” (prime contract? prime contractor to supplier contract? supplier to sub-tier supplier contract?)
- This checklist alternates between elements that should be audited at the prime contractor, suppliers, and sub-tier suppliers. Recommend categorizing the audit areas by auditee.
- Recommend scoping/defining questions for applicable organizations. Questions are focusing on Supplier Quality when they can be applicable to Engineering, Material & Process, etc.
- Recommend the title of the checklist reflect the questions rather than limiting specifically to raw material.
- Recommend that terms, especially acronyms and abbreviations be spelled out. See PART I element MR3.f.
- Recommend that general procedure questions be merged with objective evidence questions to avoid confusion and to reduce overlap.
- Recommend bulleted lists below a question be clarified: are these examples of methods of compliance, are all required, are some required. See PART I, MR1.b. If each is required, then check boxes should be added for each requirement.
- Recommend clarification as to how DCMA will evaluate a contractor’s system using this form:
 - In general, what constitutes an acceptable system and how are the factors and subfactors to be weighted.
 - What criteria is used to determine yes no or NA? How does that change from, for instance, MR2 to MR4?
 - Some issues are being evaluated using subjective criteria, ie whether the contractor's system is adequate in a particular area versus the "objective evidence" required when evaluating a contractor's performance in that same area.

Specific comments are contained within the body of the checklist.

Material Certification Review Process

PART I. PRIME CONTRACTOR RAW MATERIAL SUPPLIER PROCESS ASSESSMENT

Objective: Determine if the Prime Contractor’s strategy for raw material supplier surveillance and methodology for verification of purchased product meets contractual requirements.

MR1	Contract Requirements Obtain all required contractual documents.			
a.	List applicable contracts including amendments.			
	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Yes <input type="checkbox"/></td> <td style="text-align: center;">No <input type="checkbox"/></td> <td style="text-align: center;">N/A <input type="checkbox"/></td> </tr> </table>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>		

	<p>Recommend adding a "Comments" section to all audit questions so the auditor can list pertinent information.</p>	<p>Comments:</p>																				
<p>b.</p>	<p>Identify system-level Quality, Manufacturing and Supplier Management requirement as defined in the contract (i.e. ISO, AS9100, etc...) and any specific requirements associated with procurement of raw materials.</p> <ol style="list-style-type: none"> 1. Quality 2. Manufacturing 3. Supplier Management 4. Customer-approved processes or processors 5. Prime Contractor Special Processes <p>Recommend adding check boxes for each sub-element.</p>	<table border="0"> <tr> <td>Yes</td> <td>No</td> <td>N/A</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	Yes	No	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Comments:</p>	
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																				
<p>c.</p>	<p>Review Prime Contractor processes, procedures and instructions that define the roles and responsibilities of Supplier Quality, Supplier Management and Procurement in the following areas:</p> <ol style="list-style-type: none"> 1. Supplier Capability (spec aptitude, quality/manufacturing process control) <ol style="list-style-type: none"> a. Ability to meet purchase contract requirements b. Sub-tier supplier ability to assess lower-tier supplier capability 2. Requirements Flowdown 3. Raw Material Supplier Surveillance 4. "Verification of Purchased Product" Instructions <p>"Supplier Quality" and "Supplier Management" are specific Boeing organizations. Recommend using terms that would be common throughout industry.</p>	<table border="0"> <tr> <td>Yes</td> <td>No</td> <td>N/A</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	Yes	No	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
Yes	No	N/A																				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																				
<p>d.</p>	<p>Review Prime Contractor's Qualified Producer List, Approved Vendor List or Approved Source List and method/requirements for sustaining a position on the list.</p>	<table border="0"> <tr> <td>Yes</td> <td>No</td> <td>N/A</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	Yes	No	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
Yes	No	N/A																				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																				

MR2	<p>Prime Contractor Surveillance and Documentation Requirements</p> <p>Review the Prime Contractor's procedures, instructions and overarching processes discussed above, in the order of precedence listed in the contract, to determine compliance to contract requirements.</p> <ul style="list-style-type: none"> - Are the responsibilities clear, surveillance methods appropriate, surveillance interval adequate and documentation, analysis and reporting sufficient? 	
a.	<p>Clearly defined actions and "objective evidence" required for "Verification of Purchased Product"</p> <ol style="list-style-type: none"> 1. Supplier Management – Supplier Capability Assessment and Spec Aptitude 2. Supplier Quality – Supplier Performance Assessments and Process Controls at Mills, Converters and Distributors 3. Use of 3rd Party Auditors / Certifiers in verification efforts <p>Recommend definition of Spec Aptitude: what criteria will be used to evaluate "Spec Aptitude" or what constitutes "Spec Aptitude"</p>	<p>Yes No N/A</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
b.	<p>Supplier Management post-award follow-up with Suppliers</p> <ol style="list-style-type: none"> 1. Process for clarifying requirements 2. Instructions specific to Raw Material procurement (spec, notes, QPL, ect...) <p>Typo: "ect." Should be "etc."</p> <ol style="list-style-type: none"> 3. Right of Entry 4. Approved methodology for "Verification of Purchased Product" 	<p>Yes No N/A</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
c.	<p>SQ Surveillance Requirements at Primary Mills, Converters and Distributors</p> <ol style="list-style-type: none"> 1. Method 2. Interval 3. Equipment Maintenance and Calibration 4. Process Certification Requirements (i.e. Heat Treat, Chemical Processing) 	<p>Yes No N/A</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>

	<p>5. Personnel Certification and Qualifications</p> <p>6. Clearly defined "Objective Evidence" required to verify process control</p>	
d.	<p>Prime Contractor has defined SQ Validation / Verification efforts to measure Supplier Performance</p> <p>1. Manufacturing Process Assessments (MPA)</p> <p>2. Quality Process Assessments (QPA)</p> <p>3. Product Assessments (PA)</p> <p>"Manufacturing Process Assessments (MPA)", "Quality Process Assessments (QPA)", and "Product Assessments (PA)" are Boeing terms. Recommend using terms that would be common throughout industry.</p> <p>4. Surveillance documentation, analysis and reporting requirements</p> <p>5. Control of Nonconforming Product</p> <p>6. Material Traceability – Supplier process controls</p> <p>7. 3rd Party Audit results</p> <p>8. Test Specimen - Verification of Authenticity</p> <p>9. Test Lab Verification Actions – Supplier process controls</p> <p>10. Management of personnel certifications and equipment maintenance / cal</p> <p>11. Control, calibrate and maintain all inspection, measuring and test equipment</p> <p style="padding-left: 40px;">a. Including software and personally-owned or customer-supplied equip</p> <p>12. Documentation of Material Properties – Supplier process control & accuracy</p>	<p>Yes No N/A</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
e.	<p>Role of 3rd Party Auditors / Certifiers in support of Supplier Performance assessments</p> <p>1. Findings at sub-tier suppliers</p>	<p>Yes No N/A</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>

	2. Validation / Verification of Supplier corrective action process 3. Reporting / Documentation 4. GIDEP tracking of sub-tier supplier performance			
f.	Specific process assessment checklists for surveillance of primary mills, converters and distributors	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
g.	Requirements for supplier certifications to be periodically verified on a defined interval? Unclear as to what certifications are being asked about such as material certifications, 3 rd party or quality certifications.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
h.	Does the Prime Contractor have a defined method for adjusting SM/SQ surveillance based on SM/SQ findings, 3 rd party audit findings, GIDEP / Industry Alerts and quality escapes?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

MR3	Material Verification			
	Verify Prime Contractor command media satisfies all contract requirements for documentation of material certification. Identify the requirements flowed to SM/SQ/Procurement for execution.			
a.	Identify specific artifacts required by the Prime Contractor for "Verification of Purchased Product" and the defined interval or frequency required for each. <ol style="list-style-type: none"> 1. Material Test Reports 2. Structural and Chemical Analyses 3. Heat Treat Records 4. Chemical Processing Documentation 5. Certifications for Furnace, Autoclave, Welding, etc... 6. Traceability Records 7. Personnel and Equipment certifications 8. Equipment Calibration 9. SQ Val/Ver Documentation of Process Control 10. SQ Test Lab Val/Ver Documentation 11. Supplier Manufacturing and Quality System Review Suggest "Work Instructions" should be added	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
b.	Verify Prime Contractor has clearly defined instructions on supplier preliminary review of non-conforming material, disposition of defects and re-inspection. <ol style="list-style-type: none"> 1. Verify prime contractor periodically reviews sub-tier supplier control of 	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

	<p>non-conforming material per the defined instruction.</p> <p>Recommend deleting "supplier preliminary review of" and "disposition of defects and re-inspection".</p>			
c.	<p>Does Prime Contractor verification of purchased product identify:</p> <ol style="list-style-type: none"> 1. The material characteristic(s) 2. The method of verification 3. The point in the process requiring verification action 4. The frequency of verification actions 5. The individual, function / organization or device responsible 6. The product acceptance requirements 7. How acceptance is demonstrated <p>Recommend deleting 3, 5, and 7 because they are subjective and difficult to verify.</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
d.	Does the Prime Contractor have established "Raw Material Verification and Acceptance Instructions"?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
e.	Do Prime Contractor procedures allow suppliers to perform verification testing?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
f.	If verification of purchased product is accomplished at a supplier's facility, does the Prime Contractor identify the verification requirements and method of product release, as part of the purchasing information? (ISO 7.4.3).	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
g.	<p>Does the Prime Contractor define SM/SQ actions required to establish a basis of confidence for flowing product verification requirements to a supplier and the activities required to sustain this approach.</p> <p>This question is ambiguous. The term "basis of confidence" is rather subjective. Recommend adding better definition.</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
h.	Does the contractor define the procedures to validate test reports for raw material? (AS9100B 7.4.3) This AS9100 reference is very helpful for the auditor and auditee. Recommend referencing the applicable requirement for each element of this audit checklist.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
i.	Where the organization utilizes test reports to verify purchased product, is the requested data in those reports acceptable per applicable spec(s)? (AS9100B 7.4.3)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
j.	Where the prime contractor delegates verification activities to sub-tier suppliers, are the requirements for delegation defined and a register of delegations maintained? (AS9100 B 7.4.3)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

	<p>DEFINITIONS</p> <ol style="list-style-type: none"> 1. Objective Evidence - Data supporting the existence or verity of the material properties; observation, measurement, test or other means as defined by the prime contractor. 2. Verification - Confirmation through the provision of objective evidence that specified requirements have been fulfilled. 3. Acceptance - Establishment of records that signify verification of specified requirements for product is met. <p>This DEFINITIONS section does not seem to fit here. Recommend moving this to the beginning of the checklist.</p>	
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RI	<p>Receiving Inspection Verify Prime Contractor Receiving Inspection satisfies all contract requirements for documentation of material certification and Verification of Purchased Product.</p>	
a.	<p>Identify specific artifacts reviewed by the Prime Contractor for "Verification of Purchased Product". See Above List. Unclear as to what List is being referred to here. Suggest using a specific reference.</p>	<p>Yes No N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
b.	Prime Contractor has defined procedures for Receiving Inspectors?	<p>Yes No N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
c.	Prime Contractor has an internal audit process which verifies Receiving Inspectors are performing to defined procedures?	<p>Yes No N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
d.	Do Prime Contractor Receiving Inspection procedures identify acceptable objective evidence for Verification of Purchased Product?	<p>Yes No N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
e.	Does receipt inspection provide for verification of material procedures in age controlled/shelf life limited materials in accordance with contract requirement?	<p>Yes No N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
f.	Do Receiving Inspection procedures verify products from QPL qualified manufacturers when required?	<p>Yes No N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
h.	<p>Does the Prime Contractor require the sub-tier suppliers to have written receiving inspection procedures to verify that specified requirements for the product are met? Recommend changing "written receiving inspection procedures" to "documented process".</p>	<p>Yes No N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
i.	Do inspection procedures address access to proprietary drawings or specifications?	<p>Yes No N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
j.	Is receipt inspection data used for supplier evaluations?	<p>Yes No N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>

	What data is used?			
k.	Verify Prime Contractor has a defined process for sub-tier suppliers to handle scrap and permanently and conspicuously mark or separate it from production material. Unclear as to the relationship of this factor to topic being evaluated and suggest that it be moved to a more appropriate topic area or removed.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

OE	Objective Evidence The following shall be considered acceptable "objective evidence" that the Prime Contractor has established adequate raw material supplier surveillance and procedures for verification of purchased product.			
a.	Documented process for Raw Material Supplier surveillance covering Mills, Converters and Distributors.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
b.	Documented instructions and approved procedures for "verification of purchased product" for the prime contractor and sub-tier suppliers. Prime contractors do not have sub-tier supplier procedures. Recommend clarifying the intent of this element because the header of this Objective Evidence section specifically references the Prime Contractor.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
c.	Data supporting supplier designations as Qualified Producers, Approved Vendors or Approved Sources with associated evaluation criteria and assessment interval.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
d.	Defined SM/SQ overarching sub-tier supplier surveillance strategy specifically addressing raw material suppliers, converters and distributors. 1. Defined methods and artifacts for "verification of purchased product" 2. Defined measures for assessing adequacy of SM/SQ strategy. 3. Identifies the role of 3 rd party auditors / certifiers.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

e.	<p>Prime SM/SQ surveillance data is readily available and demonstrates the following:</p> <ol style="list-style-type: none"> 1. Use of QPA, MPA, PA results to tailor/adjust surveillance <p>“Manufacturing Process Assessments (MPA)”, “Quality Process Assessments (QPA)”, and “Product Assessments (PA)” are Boeing terms. Recommend using terms that would be common throughout industry.</p> <ol style="list-style-type: none"> 2. Process control measures for supplier execution for control of NCM, defect disposition, authorized material substitution, scrap and split order tracking 3. Defined process for verifying inspection, measuring and test equipment certification and calibration at sub-tier supplier 4. Defined process for tracking results of 3rd Party auditors / certifiers 	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
f.	Documentation demonstrating execution of a formal review cycle for applicable certifications at Mills, Converters, Distributors and Test Labs.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
g.	<p>Documentation indicating SQ actively conducts val/ver activities assessing process controls at Mills, Converters, Distributors and Test Labs. Val/Ver activities include:</p> <p>Recommend replacing “SQ actively conducts” with “contractor assures”, and spelling out “validation/verification” instead of “val/ver”.</p> <ol style="list-style-type: none"> 1. Calibration and maintenance of inspection, measuring and test equipment 2. Personnel certifications, qualifications and training 3. Traceability records 4. Control of non-conforming product 	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
h.	<p>Defined procedures for sub-tier supplier validation of test reports.</p> <p>Unclear as to whether this applies to the prime or to the suppliers.</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
i.	Register of suppliers delegated product verification responsibilities and the formal method used to establish and sustain the basis of confidence for these delegations.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
j.	Defined procedures for Receiving Inspectors and similar procedures at sub-tier suppliers delegated product verification responsibilities.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
k.	GIDEP / Industry Alert process has documented procedures, a designated representative and a monitoring / tracking method for sub-tier suppliers.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

I.	Prime Contractor can demonstrate that a method exists at the prime and sub-tier suppliers for promptly notifying customers of discrepant product and SM/SQ actions monitor and assess sub-tier supplier compliance..	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
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PART II. RAW MATERIAL SUPPLIER PRODUCT ASSESSMENT

Objective: Determine if Prime Contractor’s execution of raw material supplier surveillance and associated artifacts satisfy contractual requirements for verification of purchased product.

MR1	<p>Determining Contract/PO Requirements Prior to performing material verification, the SMS or QAS shall obtain all required contractual documents.</p> <p>Recommend defining SMS and QAS acronyms.</p>	
a.	Obtain contract or purchase orders for sample of high-risk critical parts (i.e. CSI, MCI, FCT, etc...) which span multiple raw materials of interest, including all amendments as applicable. Recommend sampling Titanium, Steel, Aluminum and Specialty Metals.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
b.	<p>Record applicable technical requirement as defined in the contract/purchase order. In some contracts, technical requirements may be listed in Individual Repair Part Ordering Data (IRPOD). For others it may be found in the body of the contract or referenced in Equipment/Product Specifications, drawing requirements, Ordering Data (OD), Additional Ordering Data (AOD) or Supplementary Data List (SDL).</p> <p>Recommend defining the acronym for “IRPOD”.</p> <ol style="list-style-type: none"> 1. Specification Number, Revision, Interim Change, Amendment, Notes 2. Exceptions applicable to the material or part certified 3. Description of material or part (e.g. Type/Alloy, Class, Condition, Size) 4. Material Identification <ol style="list-style-type: none"> a. Heat Number b. Forge Number c. Lot Number d. Heat Treatment e. Serial Number 	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>

	<p>5. Critical Characteristics</p> <ul style="list-style-type: none"> a. Structural / Microstructure b. Chemical c. NDT <p>6. Special Processes</p> <p>7. Customer-approved processes or processors</p> <p>8. Test Requirements (i.e., type, number). Normally included in Section 4 of military specifications. Modifications, changes, additions, and deletions to these requirements are found in the IRPODS, and other contract documents.</p> <ul style="list-style-type: none"> a. Required number of samples to be processed and/or tested b. Sample pedigree (i.e., size, parent material, location of sample) <p>9. Inspection Requirements / First Article Inspection Requirements (i.e., type, number) for initial build and new configurations. Normally included in Section 4 of military specifications.</p> <p>10. Acceptance Criteria per specs, IRPODs, or other contract documents:</p> <ul style="list-style-type: none"> a. Applicable mechanical properties tensile strength, elongation, charpy impact, hardness, modulus, etc... b. Chemical analysis c. Microcleanliness (including content) d. Heat Treatment e. Grain size f. Macroscopic examination 	<p>Yes No N/A</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
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	<ul style="list-style-type: none"> g. Nondestructive tests h. Corrosion resistance i. Visual and dimensional j. Weldability k. Mechanical tests l. Surface treatments (i.e., plating, coating, passivation, anodizing, etc.) <p>11. Documentation / Traceability Requirements</p> <ul style="list-style-type: none"> a. Reports, records, procedures, and other documents required (e.g., furnace charts, NDT reports, etc...). b. Documentation of material processing <p>12. Qualified Producer List, Approved Source List or Approved Vendor List</p> <p>13. Frozen / Locked Configuration</p> <p>14. Flowdown of "Right of Entry"</p>	
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MR2	Document Review			
	Review the documents discussed above, in the order of precedence listed in the contract, to verify applicable documentation is acceptable and meets contract requirements. Some items listed above may not be reflected on the certification; however, a complete understanding of contract requirements is necessary for a thorough certification review).			
a.	Review supplier documentation and material certification package. Verify all contract requirements are met and all required documentation is accurate, consistent and complete.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
b.	Verify applicable documentation listed above reflects the material properties on the contract / purchase order.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
c.	Verify all inspection, test and acceptance requirements are satisfied, adequately documented and reflect specification compliance. Recommend that "adequately documented" be defined if to be used for	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

	evaluation.			
d.	Review associated repair or Use-As-Is dispositions for impact to form, fit, function, reliability and maintainability.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
e.	Review artifacts demonstrating that sub-tier suppliers maintain and regularly review process control data. Recommend deleting “and regularly review” and adding clarification for the term “process control data” (special processes? Statistical Process Control (SPC)?) 1. Manufacturing 2. Quality 3. Test Labs 4. Inspection, measuring and test equipment maintenance / calibration 5. Tooling / Processing equipment maintenance / calibration 6. Personnel certifications, qualifications and training 7. Material storage, maintenance and traceability	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
f.	Review evidence that product sampling is in accordance with a customer-approved sampling plan (as required by contract / purchase order).	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

MR3	Material Review Recommend changing the header title to “Material Documentation Review”. The material review shall verify all contract and purchase order requirements are adequately documented and supported in the certification. More than one certification may be required to verify all requirements.			
a.	Verify the certification(s) apply to the specific material, parts or components offered for acceptance. This may include: Traceability markings (e.g., heat number, forge number, lot number, serial number). The description is of what may be included in the verification audit, is there anything that else may be included or not included.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
b.	Quantities and sizes are correct (i.e., if quantity ordered is larger than one heat, the certification must be for more than one heat).	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
c.	The certification indicates that either (a) the material meets all requirements specified, (b) the material is capable of meeting all the requirements specified with further processing (e.g., heat treatment), or (c) the test results	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

	are representative of material supplied.			
d.	If the certification indicates that material is only capable of meeting the required physical properties after heat treatment, review the heat treatment records and results of physical tests after heat treatment was completed	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
e.	If representative data is given, but the actual results are required, the material must be tested as specified or rejected.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
f.1.	Verify that each required test has been performed	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
f.2.	All results conform to the acceptance criteria and actual values are given	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
f.3.	All other test results are reported as acceptable.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
f.4.	Where tests are to be performed to an approved procedure, verify the current version was executed based on revision or date listed and the procedure was approved by the customer. Recommend changing "customer" to "approving authority".	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
f.5.	Verify test lab reports are signed by an authorized agent. If an independent test lab was used, verify the lab was approved by the customer or Nadcap accredited. Recommend adding "as required" after "Nadcap accredited" and changing "customer" to "approving authority".	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
g.	Verify preproduction qualification evidence has been obtained where required.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
h.	The necessary Fraud and Falsification statements (when applicable and required by contract or purchase order) are provided on inspection and test records.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
i.	If tests are reported and not required, verify the results do not violate contract requirements.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
j.	Verify the supplier has objective evidence to justify any changes made to a subcontractor's certification.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
k.	Verify certifications or test reports reflecting "REGRADING" include a change in the product identification. Recommend deleting this element because Boeing BDS has not experienced material certifications marked "regraded". The material is required to be certified to Boeing requirements.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
l.	Verify material properties are accurately tracked by distributors, specifically material that receives additional processing after initial delivery to the distributor.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

MR4	<p>Validation / Verification Review</p> <p>The validation / verification review shall concentrate on obtaining “objective evidence” that the prime contractor and sub-tier suppliers have adequate surveillance records to support “verification of purchased product” (i.e. material properties documented in certification packages reflect the material characteristics of the product).</p>
a.	<p>Verify SM/SQ surveillance records indicate adequate sub-tier supplier control of Manufacturing and Quality Management Systems.</p> <p>1. Review objective evidence of sub-tier supplier system compliance</p> <p>a. QPA, MPA and PA results and assessment interval</p> <p>“Manufacturing Process Assessments (MPA)”, “Quality Process Assessments (QPA)”, and “Product Assessments (PA)” are Boeing terms. Recommend using terms that would be common throughout industry.</p> <p>b. 3rd Party Audit results and audit interval</p> <p>c. Quality and Manufacturing system audit results and audit interval</p> <p>d. Supplier corrective actions</p> <p>2. Review objective evidence of sub-tier supplier process control</p> <p>a. Control of NCM</p> <p>b. Segregation and marking of defective material</p> <p>c. Material Substitution process</p> <p>d. Supplier MRA (if applicable)</p> <p>e. Change Control and / or Configuration Management process</p> <p>f. Tooling / Equipment Maintenance process</p> <p>g. Test and measuring equipment maintenance and storage</p> <p>h. Calibration Control program</p> <p>i. Training and certification program</p> <p>j. Material Conversion traceability</p> <p>3. Review objective evidence of Surveillance at Material Distributors</p> <p>a. Traceability through receiving, storage/retrieval and shipping</p> <p>4. Review objective evidence of Oversight at Independent Test Lab (if</p>

Yes No N/A

	utilized) Recommend defining the term "Oversight".			
b.	<p>Verify Supplier Quality surveillance records (Quality Process Assessments, Manufacturing Process Assessments, Product Assessments, System Audit results, 3rd Party Audit results, etc...) indicate adequate control of the following processes:</p> <ol style="list-style-type: none"> 1. Material Test Lab Operations <ol style="list-style-type: none"> a. Equipment Maintenance/calibration records b. Method, Application or process certifications c. Personnel certification, qualification and training 2. Equipment Calibration – Manufacturing <ol style="list-style-type: none"> a. Furnace Cert b. Autoclave Cert c. Welding Cert d. Calibration Records 3. Personnel Qualifications <ol style="list-style-type: none"> a. NDT b. Microstructure Analysis c. Chemical Analysis d. Welding, etc... e. Safety and Training Records (Tracking and Re-Qualification) 4. Test Specimen Authenticity <ol style="list-style-type: none"> a. Production Lot-to-Coupon traceability 	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
c.	Verify proper documentation supporting maintenance of split order quantities.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
d.	Verify that prime contractor and sub-tier suppliers comply with equipment certification requirements.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

e.	Verify software used for verification and acceptance is controlled.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
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RI	Receiving Inspection Verify Receiving Inspection(s) satisfies all contract requirements for documentation of material certification and Verification of Purchased Product.			
a.	Does the supplier have written receiving inspection procedures to verify that specified requirements for the product are met?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
b.	Are Receiving Inspectors following established procedures?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
c.	Does the supplier inspect or verify that subcontracted or purchased product conforms to specified requirements prior to use and are procedures readily available?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
d.	Are records of receiving inspection activities available which indicate: Recommend rewriting as "Are records of receiving inspection activities traceable to: <ol style="list-style-type: none"> 1. Nature and number of observations? 2. Lot/sample size? 3. Accept/Reject Status? 4. Number/types of deficiencies 5. Corrective action taken 	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
e.	Are receiving inspection records traceable to the material on the PO / contract? Recommend that this be clarified to applying to raw material or to actual part being provided.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
f.	For situations where objective evidence is required by ordering data/purchase order, is the evidence (test data) reviewed by receiving inspectors against specification requirements? Recommend deleting "by receiving inspectors". <ol style="list-style-type: none"> 1. Are records available to support this? 2. Are contracts, drawing/specs readily available during receipt inspection? 	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

g.	Are materials awaiting inspection identified and segregated from materials which have been accepted or rejected?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
h.	<p>Does receipt inspection provide for Is verification of material procedures in age controlled/shelf life limited materials in accordance with purchase order contract requirement?</p> <p>Recommend deleting "Does receipt inspection provide for", and beginning the sentence with "Is verification of material procedures . . ."</p> <ol style="list-style-type: none"> 1. Are samples in accordance with purchase order requirements? 2. Review and record a sample. 	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
i.	<p>Is material, which has been through the receiving inspection process positively identified to indicate its status (e.g. accepted or rejected)?</p> <p>Recommend deleting "positively" because evidence can be provided through various methods such as documentation traveling with the part, in electronic systems, etc.</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
j.	<p>Do receiving inspectors verify products are manufactured by QPL qualified vendors?</p> <p>Recommend that QPL be defined as mil-spec only, a government list or an in-house list. If this were defined, we suggest the factor be amended to read: "Do receiving inspectors or a later process verify products are manufactured by QPL qualified vendors?"</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
k.	<p>Does supplier perform verification testing?</p> <p>Which supplier is this referring to – the prime or its supplier?</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
k.1.	<p>a. Who performs?</p> <p>___ In-house</p> <p>___ Private Lab</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
k.2.	<p>b. Are these records available?</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

OE	<p>Objective Evidence</p> <p>The following shall be considered acceptable "objective evidence" of adequate raw material supplier surveillance and artifacts required for verification of purchased product.</p>
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a.	<p>Purchase Orders / Contracts have clearly defined:</p> <ol style="list-style-type: none"> 1. Spec Requirements 2. Material Identification 3. Critical Characteristics or Special Processes 4. QPL / AVL / ASL Requirements 5. Configuration Management Restrictions (i.e. Authorized Material Substitution) 6. Right of Entry 	<p>Yes No N/A</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
b.	<p>Material/Process/Equipment Certifications, Test Reports and Certificates of Conformance are consistent and complete and accurately reflect Purchase Order / Contract requirements for material properties.</p> <ol style="list-style-type: none"> 1. Traceability Markings 2. Quantities and Lot size 3. Inspected, Measured and Tested as specified 4. Documentation and presented data complies with acceptance criteria 5. Current versions of test procedures and software (if applicable) 6. Reports signed by authorized agents 7. Preproduction qualification documents or FAI report provided when required 	<p>Yes No N/A</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
c.	<p>Documentation certifying material processing is complete and accurate and meet Purchase Order / Contract requirements.</p>	<p>Yes No N/A</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
d.	<p>Documentation covering all inspection, measurement, test and acceptance actions defined in the Purchase Order / Contract and associated data satisfies all requirements.</p>	<p>Yes No N/A</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
e.	<p>Sample applicable non-conformance dispositions (preliminary review and material review board actions). Verify proper classification, processing and disposition authority was utilized.</p>	<p>Yes No N/A</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>

f.	<p>Sample of Prime Contractor SM/SQ documentation of applicable sub-tier supplier surveillance (including Mills, Converters, Distributors, Manufacturers). Recommend sampling documentation in each of the following areas:</p> <p>Recommend limiting this element to Manufacturers because there is no current requirement to approve Material Test Labs, Mills, Converters, or Distributors.</p> <ol style="list-style-type: none"> 1. Last MPA, QPA, PA conducted at associated suppliers (Date / Findings) <p>“Manufacturing Process Assessments (MPA)”, “Quality Process Assessments (QPA)”, and “Product Assessments (PA)” are Boeing terms. Recommend using terms that would be common throughout industry.</p> <ol style="list-style-type: none"> 2. Last Manufacturing or Quality System Assessment 3. Last Review of applicable Material Test Labs 4. SM/SQ supplier assessments records verifying personnel certifications, qualifications and training currency. 5. Records verifying inspection, measurement and test equipment maintenance, certification and calibration is tracked, executed and compliant to established procedures. 6. Records verifying material storage and maintenance is compliant 7. Records of product sampling per a customer-approved sampling plan. 	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Yes <input type="checkbox"/></td> <td style="text-align: center;">No <input type="checkbox"/></td> <td style="text-align: center;">N/A <input type="checkbox"/></td> </tr> </table>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>			
g.	<p>Documentation identifying and tracing material properties through distributors and identifying any additional processing received after initial delivery to the distributor.</p> <p>Recommend breaking out “additional processing received after initial delivery to the distributor” as a separate element/question. Also, recommend clarifying expectation of objective evidence for “tracing material properties”.</p>	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Yes <input type="checkbox"/></td> <td style="text-align: center;">No <input type="checkbox"/></td> <td style="text-align: center;">N/A <input type="checkbox"/></td> </tr> </table>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>			
h.	<p>Changes to sub-tier supplier certifications have accompanying justification.</p>	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Yes <input type="checkbox"/></td> <td style="text-align: center;">No <input type="checkbox"/></td> <td style="text-align: center;">N/A <input type="checkbox"/></td> </tr> </table>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>			
i.	<p>Product identification accurately reflects “REGRADING” if applicable.</p> <p>Recommend deleting this element because Boeing BDS has not experienced material certifications marked “regraded”. The material is required to be certified to Boeing requirements.</p>	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Yes <input type="checkbox"/></td> <td style="text-align: center;">No <input type="checkbox"/></td> <td style="text-align: center;">N/A <input type="checkbox"/></td> </tr> </table>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>			
j.	<p>Prime Contractor SM/SQ surveillance records verifying surveillance strategy (i.e. product verification action) was executed for associated sub-tiered suppliers and no gaps developed. Verify against surveillance methods and interval defined in Prime Contractors processes, procedures and instructions.</p>	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Yes <input type="checkbox"/></td> <td style="text-align: center;">No <input type="checkbox"/></td> <td style="text-align: center;">N/A <input type="checkbox"/></td> </tr> </table>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>			

	<p>Recommend sampling each of the following areas:</p> <ol style="list-style-type: none"> 1. Records assessing manufacturing and quality system compliance. 2. Records assessing processing equipment certification <ol style="list-style-type: none"> a. Manufacturing equipment b. Furnace / Autoclaves c. Temperature / Humidity Controls where required and as applicable 3. Records assessing Test Lab compliance <ol style="list-style-type: none"> a. Test equipment maintenance and calibration b. Methods, applications and/or process certifications c. Recorded oversight at Independent Test Labs (if applicable) 4. Records assessing process compliance, specifically: <ol style="list-style-type: none"> a. Control of Non-Conforming Material b. Change Control / Configuration Management c. Equipment Maintenance d. Calibration Control e. Material Conversion Traceability 5. Records verifying personnel certification, qualification, and training. Specific attention to personnel conducting inspection, measurement, test and acceptance activities. <ol style="list-style-type: none"> a. No gaps in re-certification or re-qualifications 6. Records specifically assessing Material Distributors 	
k.	Defined Receiving Inspection procedures.	Yes No N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
l.	Records of applicable receiving inspections traceable to Purchase Order / Contract requirements.	Yes No N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
m.	Applicable drawings and prime contractor specifications available for review.	Yes No N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
n.	Relevant internal and external documents readily available?	Yes No N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Note:	

	<p>All documentation is not required to be maintained at the prime contractor, but must be readily available for government review.</p> <p>Recommend moving this note to the top of the checklist.</p>	
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Additional Comments/Concerns