# AMT FAI Requirements for Suppliers

### References:

SAE AS9102, Rev. B (2014-10)

Net-Inspect build: 2020.2.17(build 1)



## AMT FAI Requirements for Suppliers

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### **Definitions:**

- DPD (Digital Product Definition)
  - Requirements of any digital data files that disclose, directly or by reference, the physical or functional requirements, including data files that disclose the design or acceptance criteria of a product. Examples of DPD include:
    - The digital definition and fully dimensioned two-dimensional (2D) drawing sheets.
    - Three-dimensional (3D) data model and simplified or reduced content 2D drawing sheets.
    - The 3D model with design characteristics displayed as text.
    - Any other data files that define a product in its entirety.

#### Multiple Characteristics

- Identical characteristics that occur at more than one location (e.g., "4 places"), but are established by a single set of drawing or DPD requirements (e.g., rivet hole size, dovetail slots, corner radii, chemical milling pocket thickness).
- Reference Characteristics
  - The Characteristics that are used for "information only" or to show relationship; these are dimensions without tolerances and refer to other dimensions on the drawing or in the DPD.
  - \*Basic Dimensions should not be confused as or treated as Reference Characteristics\*
- Special Processes
  - Any processes for production and service provision where the resulting output cannot be verified by subsequent monitoring or measurement and, as a consequence, deficiencies become apparent only after the product is in use or the service has been delivered.
- For more definitions, reference AS9102.



- The organization shall perform FAI on new product representative of the first production run. All first production delivery parts require an approved FAI.
- The organization shall use a representative item from the first production run of a new product to verify that the production processes, production documentation, and tooling have the capability to produce products that meet established requirements.
- FAI's are required for details, sub-assemblies and assemblies manufactured on behalf of AMT and their customer specifications. For assemblies, the assembly level FAI shall be performed on those characteristics specified on the assembly engineering, unless the assembly is an MOA (Made on Assembly) which all characteristics can be submitted on a single FAI.
- Suppliers are to address all requirements on the FAI (e.g. all applicable drawing notes, every dimension on the drawing or MBD, Basic Dimensions, multiple characteristics in a GD&T Feature Control Frame, Specification driven requirements (e.g. Rivet button height, Pin Protrusion, etc.), PO driven Condition of Supply requirements (COS)).
- FAI's are required to be completed at the Supplier's facility, submitted into the "SENIOR AEROSPACE AMT ARLINGTON" Net-Inspect account prior to shipment of parts. Requirement may only be waived by AMTs Director of Quality.



- If AMT Source Inspection(QC-05) has been invoked for the first production run of parts, the supplier is not authorized to inspect product(s) on the behalf of AMT. The supplier shall schedule a comparable inspection and coordinate the required inspection / verification activity prior to shipment in accordance with QC-05 requirements. All requests for AMT Source Inspection must be submitted to AMT in advance of inspection support. Reference QS40025, Supplier Quality Requirements
- All suppliers will be required to utilize AMT's Net-Inspect system for all FAI submittals. When compiling the FAI within Net-Inspect, all electronic forms and applicable fields are required to be completed. PDF uploads in lieu of completing the required electronic fields and forms within Net-Inspect are not acceptable. Any deviations from using the Net-Inspect system and the process for FAI submittal will require prior authorization by AMT Quality and must be noted on the AMT Purchase Order.
- All detail part FAI's within an Assembly are required to be linked and available within Net-Inspect and approved internally prior to submitting the Assembly FAI to AMT. Made on Assembly FAI's can be submitted as a single FAI.



- If the original Full FAI is not accessible in Net-Inspect as it was performed prior to the implementation date of Net-Inspect (2010), AMT will require the supplier to complete Form 1 and attach the original Full FAI in the form of a PDF, including all necessary documentation.
- An FAI is considered incomplete until all non-conformities are resolved. If the initial FAI includes documented non-conforming characteristics dispositioned by MRB, a subsequent Partial (Delta) FAI is required to provide data from the next production run as objective evidence that these features are being produced in compliance to engineering requirements. Any deviations from this clause will require prior written authorization by AMT's Director of Quality and must be noted on the AMT Purchase Order.
- Verify part marking is legible, correct in content (QC-12) and size, and properly located per applicable specifications.
- All forms shall be completed in English. Supporting documentation must be in English as well, including but not limited to shop routers. At a minimum the supplier shall provide a line by line translation page of their shop routers with bi-lingual headers.
- All documentation included in the FAI must be properly signed, stamped and dated.



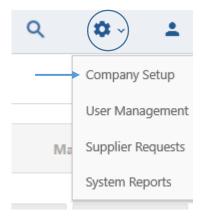
- FAI's that are disapproved for buyoff must be reviewed by the supplier, updated accordingly and resubmitted to AMT for review all within the same FAIR number. Creating and submitting a new FAIR in lieu of fixing the issues identified within the original FAIR is not acceptable and will be rejected. All rejectable conditions should be addressed prior to resubmission. Any items that are not addressed will be rejected back to the supplier.
- Any deviations from this standard will require prior written authorization by AMT's Director of Quality and must be noted on the AMT Purchase Order.



### Adding AMT as a Customer

Settings -> Company Setup -> Customers -> [+ADD ITEM] -> "SENIOR AEROSPACE AMT - ARLINGTON".





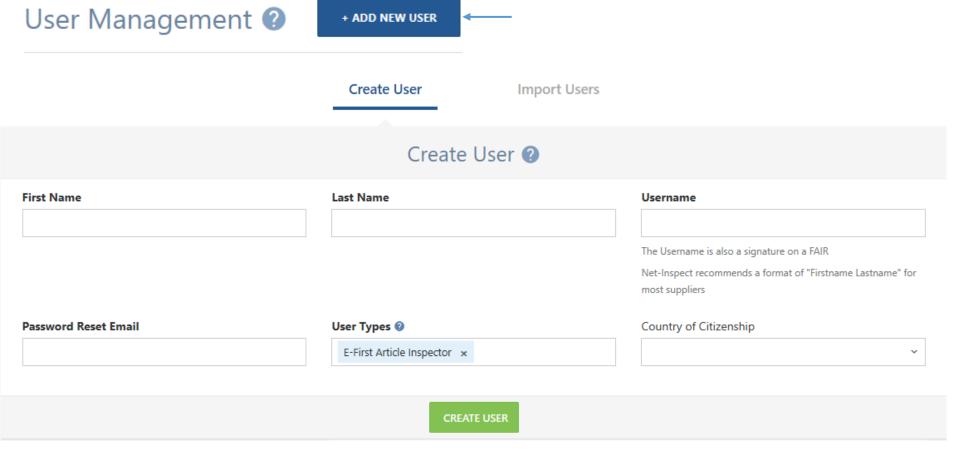


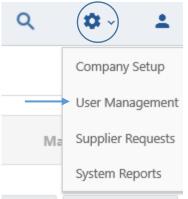


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### Adding a User in Net-Inspect

Settings -> Company Setup -> User Management -> [+ADD NEW USER]





Note: Depending on your Net-Inspect configuration, a User Type with Full FAIR Access will need to be added in order to submit FAI's.

E-First Article Inspector
Full FAIR access, Part/Feature access



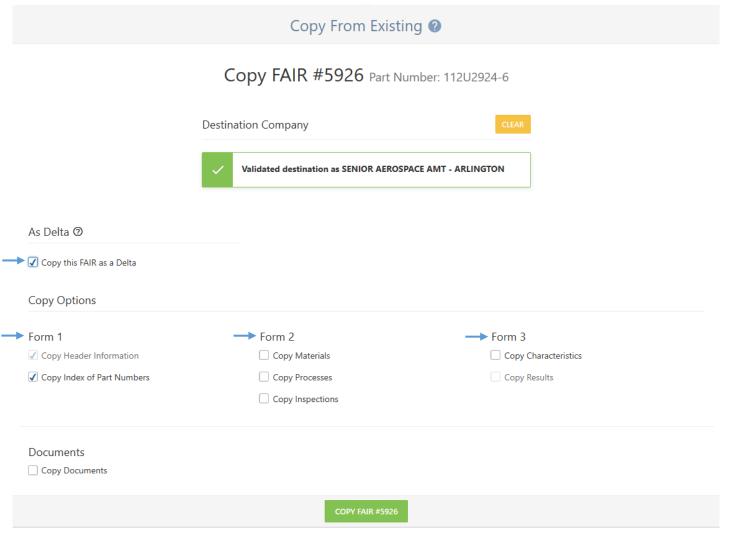
### Creating a New FAI

• All Fields are **Required**, the <u>Part Number</u>, <u>Part Name</u> and <u>FAIR Program</u> shall reflect the AMT Purchase Order Information.

net-inspect		First Articles	Quality Management	Calibration	Machine Management	APQP	
Create FAIR	View Internal	View Supplier	FAIR Requirements	Supplier Tree	Supplier Map (Beta)	FAIR Portal	Reports
Customer Info							
Customer ⑦							
SENIOR AEROSPACE AM	IT - ARLINGTO	DN	~				
Part Number ⑦				Part Name ⑦			
Form 1, Field 1				Form 1, Field 2			
FAIR Program ⑦	ŀ	low to align users with	unauthorized programs	Manufacturing Prod	cess Reference ⑦		
				Form 1, Field 9			



### Creating a Partial FAI (Delta)



#### FAIR #5926 AS9102 Rev. B

PRINT COPY/DELTA FAIR RESET

**Destination Company** 

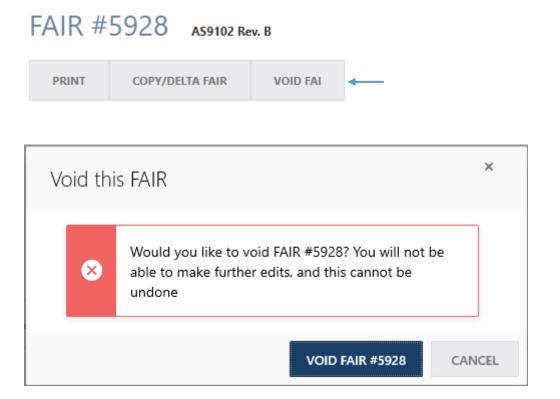


- Click "COPY/DELTA FAIR" from the inside the FAIR.
- Click "USE CURRENT COMPANY"
- Select "Copy this FAIR as a Delta"
- Select all the appropriate check boxes for Forms 1, 2, and 3.
- Click "COPY FAIR #\*\*\*\*"
- The original FAI and the Delta will now contain a permanent link to each other.



### Voiding an FAI

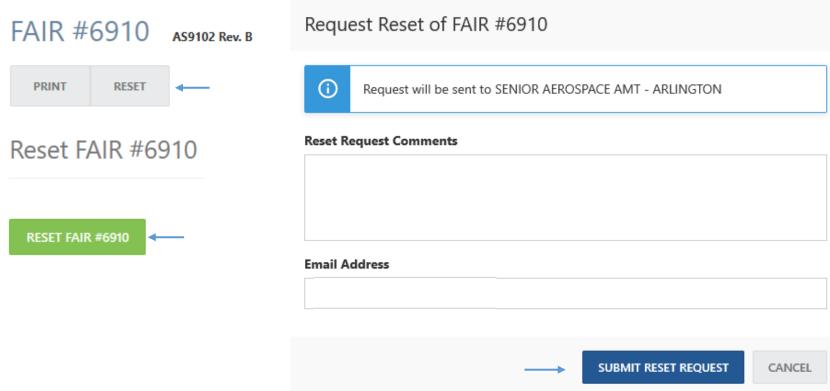
• FAIRs can be voided if they haven't been submitted to AMT for review, this action will cancel the FAI and remove it from AMT's Net-Inspect Portal, it cannot be undone.





### Resetting an FAI

- A FAIR can be reset from inside the FAI by the supplier as long as the FAI has not been accepted by AMT.
- If the FAIR has already been accepted, the supplier must initiate a reset request. This action will send AMT a reset request which will be accepted/denied based on the request criteria.





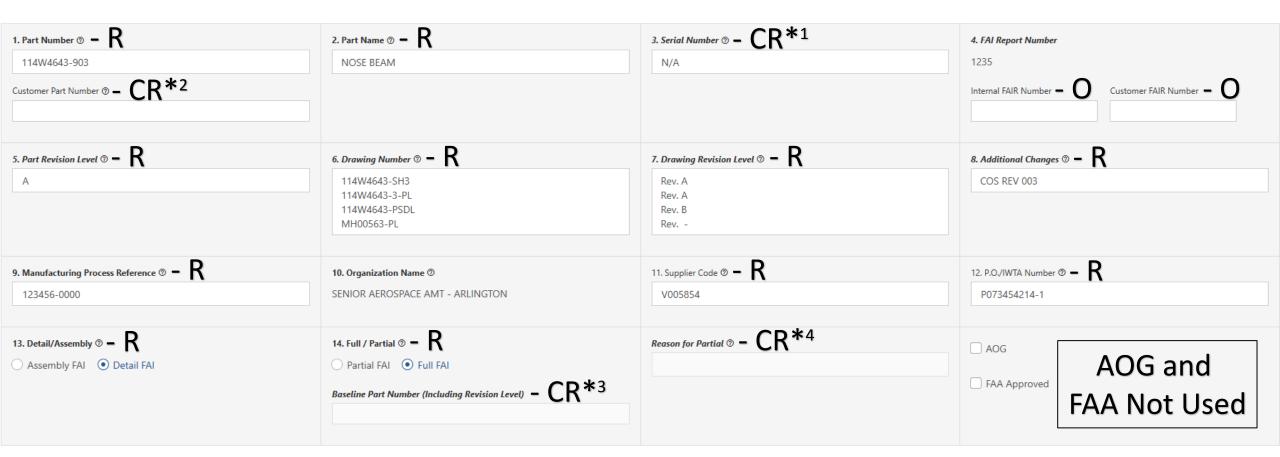
# Form One Completion

Part Number Accountability



### AMT Form One Requirements:

• R = AMT Required Fields, CR = Conditionally Required Fields (\*conditions listed below), O = Optional Fields (can leave blank)



- \*1 Serial Number is required if the production order parts are serialized.
- \*2—Customer Part Number is required when the FAIR is performed on an Outside Vendor part number., (i.e. \*-OV)
- \*3 Baseline Part Number is required if a Partial FAI (Delta) is being performed.
- \*4—Reason for Partial is required if a Partial FAI (Delta) is being performed.



### Form One, Field One: Part Number

#### Purchase Part Complete (non-modified PN):



#### Purchase Part Complete (Modified PN):

114W4643-903	(AMT)	
Customer Part Numb	ber ⑦	

#### **Outside Vendor:**



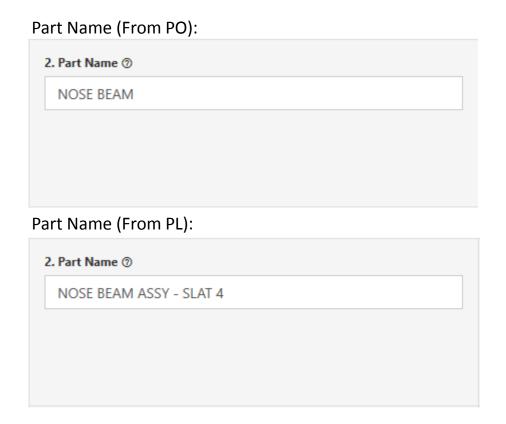
### Description:

- This field contains the part number of the FAI part, this part number shall reflect the part number ordered on the PO.
- Customer Part Number is required if the part number on the PO differs from the engineered part number.

- Purchase Order Documentation
- Engineering Documentation (Parts List)



### Form One, Field Two: Part Name



### Description:

- This field contains the part name of the FAI part, this part name shall reflect the part number ordered on the PO.
- It is acceptable to use either the Item Description from the PO or the List Title from the engineered Parts List.

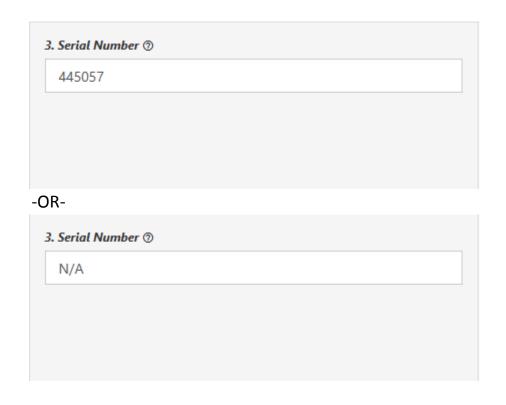
#### Where to find:

- Purchase Order Documentation
- Engineering Documentation (Parts List)



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### Form One, Field Three: Serial Number



### Description:

- This field contains the serial number of the FAI part.
- If the FAI part is not serialized, enter "N/A" into field 3, this field cannot be blank.

#### Where to find:

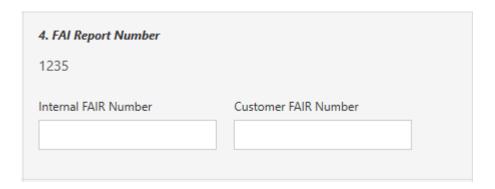
- Purchase Order Documentation
- Engineering Documentation (Parts List)

#### Additional Notes:

• If serialization is not engineering driven, serial number must also be included within the part mark.



### Form One, Field Four: FAIR Number



### Description:

- This field contains the FAIR Number, this number is auto-generated by Net-Inspect and is unique to the FAIR, Supplier and Part Number.
- The Internal FAIR Number should be entered if it is applicable to the Supplier, else it should be left blank.
- The Customer FAIR Number is not used by AMT and should be left blank.



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### Form One, Field Five: Part Revision Level



### **Description:**

• This field contains the latest part revision level that effects the FAI part.

### Where to find:

- Purchase Order Documentation
- Engineering Documentation (Parts List)

#### Additional Notes:

 This can be different than the engineering drawing/DPD dataset, especially when drawings contain multiple part numbers on the drawing/DPD.



### Form One, Field Six: Drawing Number



### Description:

- This field contains all of the Required Engineering/Job Order Engineering listed on the AMT Purchase Order.
- This Field shall include, but is not limited to:
  - Drawing Sheets
  - Models (MBD)
  - Parts Lists
  - Picture Sheet Data Lists
  - Material Parts Lists

#### Where to find:

Purchase Order Documentation

#### Additional Notes:

• If using MBD/DPD screen shots to bubble the characteristics, the engineering and revision must match.



### Form One, Field Seven: Drawing Revision Level



### Description:

- This field contains all of the Drawing Revision Levels for the Drawing Numbers listed in Form 6.
- The revision(s) shall be in the same format as depicted on the AMT Purchase Order. (New, N/C, NC and No Change) For example, NC is not acceptable unless the PO states NC.

### Where to find:

Purchase Order Documentation

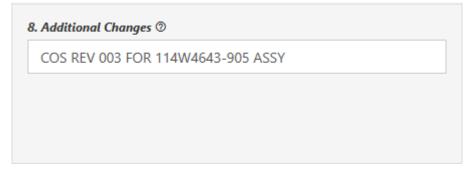


### Form One, Field Eight: Additional Changes

Additional Changes: (Stand Alone Details or MOAs)



Additional Changes: (Details of Assemblies when the Assembly is the FAI Part)



### Description:

- This field contains the reference to any documents or instructions on the AMT Purchase Order that authorizes a deviation from engineering applicable to the FAI part, including the associated revisions with the document. These are changes incorporated in the product by AMT or AMT's Customer but are not reflected in current engineering requirements.
- This includes but is not limited to:
  - Change in Design
  - Engineering Changes
  - Manufacturing Changes
  - Deviation or Exclusion from certain drawing requirements
- Examples:
  - Build per Engineering Requirements
  - Omit all pilot holes
  - Include pilot holes

#### Where to find:

Purchase Order Documentation



### Form One, Field Nine: Manufacturing Process Reference



### Description:

• This field contains the reference number that provides traceability to the Manufacturing Record of the FAI Part.

#### Where to find:

- Internal Work Order
- Job Card
- Production Routing
- Manufacturing Order
- Electronic Work Instructions

#### Additional Notes:

 Additional Information such as revisions, lot number, batch number, date code, or line number shall be included, as applicable to provide traceability to the specific manufacturing lot.



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### Form One, Field Ten: Organization Name

10. Organization Name 3

SENIOR AEROSPACE AMT - ARLINGTON

### Description:

This field contains the name of the Organization that is performing the FAI. This field will be automatically populated by Net-Inspect.



### Form One, Field Eleven: Supplier Code



### Description:

• This field contains the Supplier Code assigned to the suppler by AMT and is identified on the AMT Purchase Order.

#### Where to find:

Purchase Order Documentation



### Form One, Field Twelve: P.O. Number



### Description:

• This field contains the AMT Purchase Order Number, Provide the Purchase Order Line when applicable.

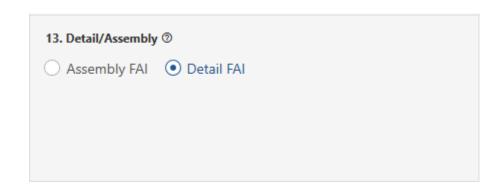
#### Where to find:

- Purchase Order Document
- For detail parts of the assembly, the PO of the assembly that drives the original requirement shall be listed in this field.



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### Form One, Field Thirteen: Detail/Assembly



### Description:

 This field contains the appropriate check box that associates the product.

- Purchase Order Documentation
- Engineering Documentation (Parts List)



### Form One, Field Fourteen: Full

#### Field 14.A: Full FAIs



#### Field 14.B: Full FAIs



### Description:

- This field contains the appropriate check box to identify a full FAI or Partial FAI.
- If Full FAI has been checked, Baseline Part Number and Reason for Partial will be disabled.

- Internal Records
- Purchase Order Documentation
- Engineering Documentation (Parts List)

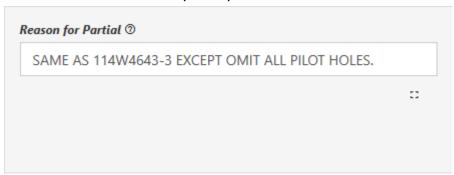


### Form One, Field Fourteen: Partial

#### Field 14.A: Partial FAIs (Delta)



#### Field 14.B: Partial FAIs (Delta)



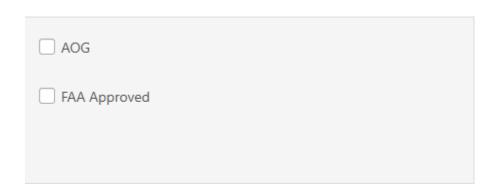
### Description:

- This field contains the appropriate check box to identify a full FAI or Partial FAI.
- For Partial FAIs, provide the Baseline Part Number (including revision levels) with traceability to the original FAI or Lot to which the partial FAI is performed and the reason.
- Reasons for Partial FAIs include but is not limited to:
  - Changes in design characteristics affecting fit, form, or function of the part.
  - Changes in manufacturing source(s), process(es), inspection method(s), location of manufacture, tooling, or materials that can potentially affect fit, form, or function.
  - A lapse in production for two years from the completion of the last production to the actual restart of production.

- Internal Records
- Purchase Order Documentation
- Engineering Documentation (Parts List)



### Form One: AOG and FAA Checkbox

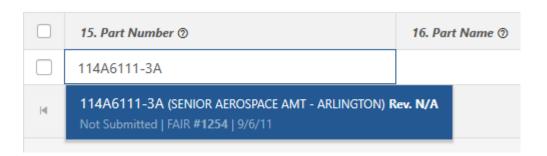


### Description:

• This field is not required and is not used by AMT.



### Form One, Field Fifteen: Part Number (Assemblies Only)



#### Additional Notes:

- Standard Catalogue Hardware or Commercial Off The Shelf (COTS) are hardware that is not produced by or to a customer specification and can be used on any aircraft and/or purchased from any available satisfactory source.
- If Standard Catalogue Hardware or Commercial Off The Shelf items are modified, they will need to be listed on Form 2.

### Description:

• This field contains the detail Part Number(s) included in the assembly. It should also contain standard catalogue hardware items/COTS, as defined in engineering or AMT Purchase Order.

#### Where to find:

- Purchase Order Documentation
- Engineering Documentation (Parts List)

#### Additional Notes (continued):

- BAC Parts do require an FAI and shall be listed on Form 1
- BAC hardware shall be recorded on Form 2
- Any modifications to BAC hardware will require FAIR's and shall be listed on Form 1



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### Form One, Field Sixteen: Part Name



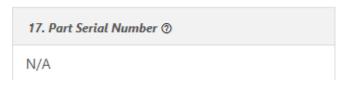
### Description:

 This field contains the Part Name of the Detail part(s), Subassemblies, Standard Catalog Items, or COTS as defined in Engineering or AMT Purchase Order.

- Purchase Order Documentation
- Engineering Documentation (Parts List)



### Form One, Field Seventeen: Part Serial Number



### Description:

- This field contains the Part Serial Number of the detail part(s), sub-assemblies, standard catalogue hardware/COTS.
- Enter N/A in this field if there is no serial number.

- Purchase Order Documentation
- Engineering Documentation (Parts List)



### Form One, Sub-Assemblies: Supplier

#### Supplier

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### Description:

- This field contains the applicable supplier that made the Detail, Sub-Assemblies, or who the Standard Catalog Hardware/COTS item was procured from.
- Please select the appropriate supplier in Net-Inspect.
- If a supplier is not available to be linked, manual entry will be required. This will include the Supplier Name and Supplier Address.

- Purchase Order Documentation
- Engineering Documentation (Parts List)



### Form One, Field Eighteen: FAI Report Number



### Description:

 This field contains the FAIR number associated with the FAI details of Sub-Assemblies. The FAI's should be linked in Net-Inspect

#### Where to find:

- Purchase Order Documentation
- Engineering Documentation (Parts List)
- Net-Inspect

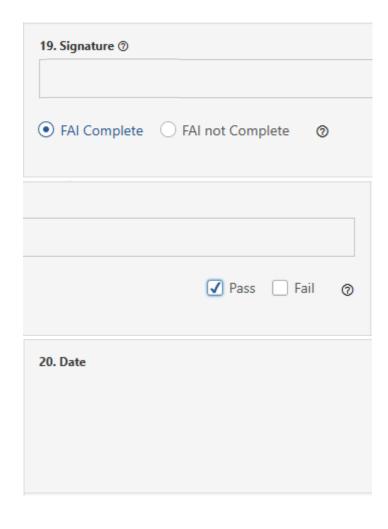
#### Additional Notes:

• For Standard Catalog Items this field is reserved for the Certificate (CofC) number (e.g. raw material test report, compliance report number, traceability number) assigned by the manufacturer of the item. Distributor certs must contain this number as assigned by the material manufacturer.



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# Form One, Field Nineteen & Twenty: Signature & Date



# Description:

- Field 19 contains the name and signature of the person who prepared the FAIR.
- Select "FAI Complete" if all characteristics are conforming and accounted for.
- Select "FAI not Complete" if nonconforming characteristics are documented in accordance with AS9102, Section 4.4
- Check "Pass" if all characteristics are conforming.
- Check "Fail" if there are non-conformance reports written against any design characteristics listed in Form 3.
- Field 20 contains the date when Field 19 was signed, the information is automatically generated by Net-Inspect.

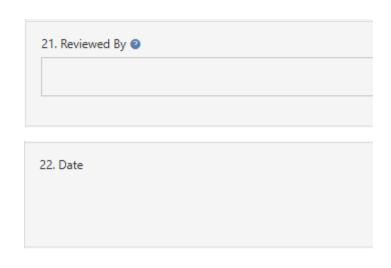
### Additional Notes:

Any FAI's with "FAI not Complete" or "Fail" with require Partial FAI's to be performed on the next production run to capture non-conforming items.

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# Form One, Field Twenty One & Twenty Two: Reviewed By & Date



# Description:

- Field 21 contains the name and signature of the person who reviewed and approved the FAIR for the organization performing the FAI.
- Field 22 contains the date when Field 21 was signed, the information is automatically generated by Net-Inspect.

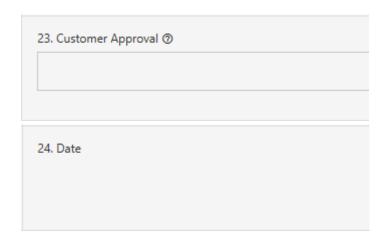
### Additional Notes:

• AMT does not require the reviewer of the FAI to be different than the compiler but it is good practice for someone other than the compiler to review and submit the FAI.



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# Form One, Field Twenty Three & Twenty Four: Customer Approval & Date



# Description:

- Field 23 is reserved for the AMT's Approval of the FAIR. This field is not required to be completed in order to ship product unless otherwise specified on the AMT Purchase Order.
- Field 24 contains the date when Field 23 was signed, the information is automatically generated by Net-Inspect.



# Form One, Additional Field: User Comments



# Description:

• This field is used to add any comments to the FAIR as needed by the supplier. This field is optional.



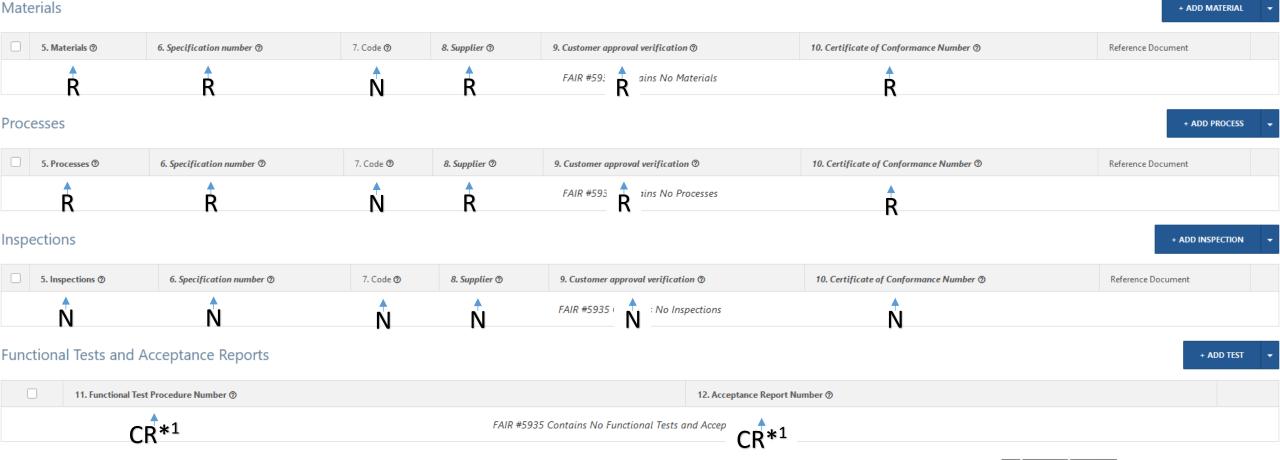
# Form Two Completion

Product Accountability – Raw Material, Special Process(es), Functional Test



# AMT Form Two Requirements:

- R = AMT Required Fields, CR = Conditionally Required Fields (\*conditions listed below), N = Not Used (can leave blank)
  - \*1 = Field 11 and 12 are only to be used for functional tests that are identified as a design requirement.



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# Form Two, Field Five: Materials or Process Name

#### Field 5: Materials

#### Materials



#### Field 5: Processes

#### Processes

5. Processes ®

### Additional Notes:

- Any process listed within Process Code / Specification Index on D1-4426 is a special process and must be listed on Form 2.
- If a process yields measureable results (i.e. Hardness/Conductivity), these results will need to be listed on Form 3.

# Description:

- This field contains the name of the Materials and Special Processes as identified by the title of the specification.
- Materials include but are not limited to:
  - Raw Material
  - BAC Hardware
  - Modified Standard Catalog Items / COTS
  - Sealant
- Processes include but are not limited to:
  - Anodizing/Chemical Conversion
  - Heat Treat
  - Shot Peen
  - Ultrasonic/Penetrant/Magnetic Particle Inspection
  - Temper Inspection
- Do not list tapes, solvents or other "non-fly away" materials.

- D1-4426
- Engineering Documentation (Parts List)



# Form Two, Field Six: Specification Number



### Additional Notes:

- Any process listed within Process Code / Specification Index on D1-4426 is a special process and must be listed on Form 2.
- If a process yields measureable results (i.e. Hardness/Conductivity), these results will need to be listed on Form 3.

# Description:

- This field contains the Specification Number for Materials and Special Processes.
- Material specifications should be written as listed in the engineering. (e.g. AMS-QQ-A-250/5)
- Processes specifications shall include but are not limited to: Class, Type, Grade, as applicable.

- D1-4426
- Engineering Documentation (Parts List)



# Form Two, Field Seven: Code



#### **Example**:

The Specification Index lists specifications approved as of Revision Date. It provides a cross reference to Process Codes used in this electronic document

Click on the desired Specification prefix:

[AMS & ASTM][BMS, BPS & BSS][BAC][DPS]

[HP][LA][MIL][PS][All Others]

Specification	Specification Title		Nadcap Commodity	Nomenclature	
BAC 5019	Chromic Acid Anodizing - Class 1 and 4	304	<u>CP</u>	Chromic Acid Anodizing - Class 1 and 4	

### Additional Notes:

- Any process listed within Process Code / Specification Index on D1-4426 is a special process and must be listed on Form 2.
- If a process yields measureable results (i.e. Hardness/Conductivity), these results will need to be listed on Form 3.

# Description:

- This field contains the material or process code for the material or process.
- If the field is not required by AMT and can be left blank.
- The code can be found in D1-4426.
- This is <u>not</u> a supplier code, an F-Code for finish, or a Part Mark code.

- D1-4426
- Engineering Documentation (Parts List)



# Form Two, Field Eight: Supplier

8. Supplier ①

### Additional Notes:

- Any process listed within Process Code / Specification Index on D1-4426 is a special process and must be listed on Form 2.
- If a process yields measureable results (i.e. Hardness/Conductivity), these results will need to be listed on Form 3.

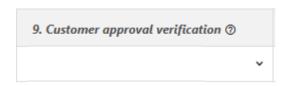
# Description:

- This field contains the Supplier Name, Full Address and Supplier Code of the organization performing the process or suppling the material.
- If a supplier code is not available, the Supplier's Name and Full address must be used. Ensure the process or material is not customer controlled if the supplier does not have a customer issued code.
- The code used must be the code supplied by the customer for the FAI Part.

- D1-4426
- Engineering Documentation (Parts List)



# Form Two, Field Nine: Customer Approval Verification



### Additional Notes:

- Any process listed within Process Code / Specification Index on D1-4426 is a special process and must be listed on Form 2.
- If a process yields measureable results (i.e. Hardness/Conductivity), these results will need to be listed on Form 3.

# Description:

- This field indicates if the process(es) or material sources are approved by the customer.
- Enter "Yes" if approved
- Enter "No" if approval is required but source is not yet approved. If "No" is used, Contact AMT Supplier Quality for further instructions.
- Enter "N/A" if approval is not required.
- When a distributor is used, enter the approval for the source, not the distributor.

- D1-4426
- Engineering Documentation (Parts List)



# Form Two, Field Ten: Certificate of Conformance Number



# Description:

- This field contains the Certificate of Conformance (C of C) number.
- This field is reserved for the supplier's C of C doing the process or suppling the material.
- When a distributor is used, record the approved source's C of C and not the distributors.

# Where to find:

- D1-4426
- Engineering Documentation (Parts List)

# Additional Notes:

- Any process listed within Process Code / Specification Index on D1-4426 is a special process and must be listed on Form 2.
- If a process yields measureable results (i.e. Hardness/Conductivity), these results will need to be listed on Form 3.



# Form Two, Field Eleven: Functional Test Procedure Number



### Additional Notes:

- Any process listed within Process Code / Specification Index on D1-4426 is a special process and must be listed on Form 2.
- If a process yields measureable results (i.e. Hardness/Conductivity), these results will need to be listed on Form 3.

# **Description:**

• This field contains the functional test procedure number that is identified as a design requirement.

### Additional Notes:

Functional test procedures are not an in-process check.
 Functional Test Plans (FTP) or Acceptance Test Procedures (ATP) are clearly defined as a test procedure within engineering.

- Purchase Order Documentation
- Engineering Documentation (Parts List)



# Form Two, Field Twelve: Acceptance Report Number

12. Acceptance report number, if applicable ①

# **Description:**

• This field contains the functional test certification report number that indicates the test requirements have been met.

### Additional Notes:

• If no report number was generated, refer to the production order for evidence of acceptance.

# Where to find:

• Approved Functional Test Report

### Additional Notes:

- Any process listed within Process Code / Specification Index on D1-4426 is a special process and must be listed on Form 2.
- If a process yields measureable results (i.e. Hardness/Conductivity), these results will need to be listed on Form 3.



# Form Two, Field Thirteen: User Comments



# Description:

• This field is used to add any comments to the FAIR as needed by the supplier. This field is optional.



# Form Two, Field Fourteen & Fifteen: Prepared By & Date



# Description:

### Field 14: Signature

• This field contains the name of the person who prepared and signed Form 2. The signature indicates that all applicable materials, processes, and functional testing are accounted for, meet requirements, are properly documented, and all associated nonconformance's are documented.

#### Field 15: Date

This field contains the completion date of the form.



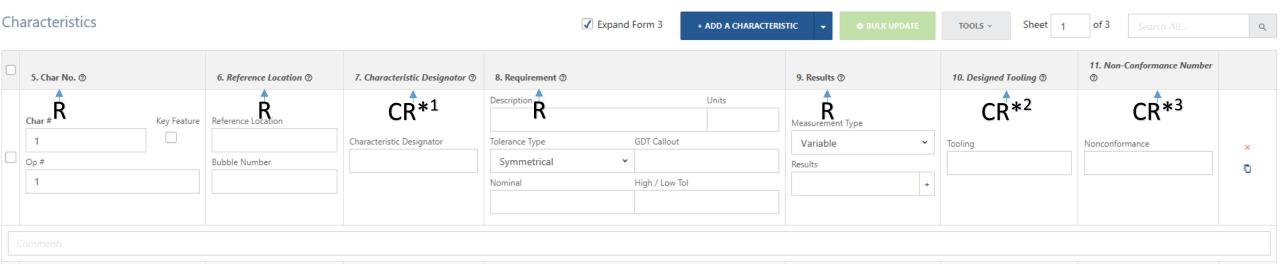
# Form Three Completion

Characteristic Accountability, Verification and Compatibility Evaluation



# AMT Form Three Requirements:

• R = AMT Required Fields, CR = Conditionally Required Fields (\*conditions listed below)

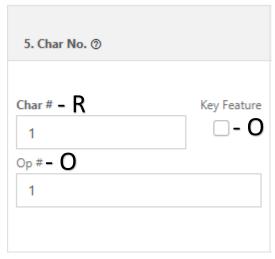


- \*1: This field is reserved for critical items, key characteristics, flight safety or when defined by the Customer.
- \*2: This field is reserved for Designed/Qualified tooling used for attribute acceptance.
- \*3: This field is reserved for Non-Conformance Reports, as applicable.



# Form Three, Field Five: Characteristic Number

#### R = Required, O = Optional



#### Where to find:

- Marked up Drawing / MBD
- Bubbled Drawing / PL / PSDL
- CMM Report

#### Additional Notes:

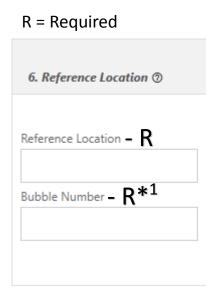
- A simple design callout that applies to multiple characteristics may be recorded as one characteristic number.
- Datasets derived from MBD engineering may be used for characteristic mapping provided the organization is DPD approved. MBD documentation needs to show model and revision.

# Description:

- This field contains the unique assigned number for each design characteristic that is cross referenced to all relevant documents (bubble drawing)
- Verify that every design characteristic (requirement) is accounted for and uniquely identified.
- Design characteristics include but are not limited to:
  - Drawing/MBD Dimensions
  - Drawing Notes
  - Process Notes
  - General Notes
  - Flag Notes
  - Geometric Tolerances
  - Basic Dimensions
  - Table Dimensions



# Form Three, Field Six: Reference Location



\*1: Required if bubble numbers are different than characteristic numbers

# Description:

- This field contains the location of the specific design characteristics (drawing specific zone, page number and section, DPD/MBD model location, specification callout, etc.) being verified.
- Bubble document is used to provide traceability for the characteristic number to the location of the design characteristic.

### Additional Notes:

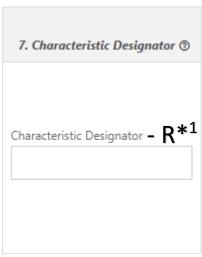
• The same bubble number can be used for different characteristics at the same location, (e.g. true position, composite true position, diameter are in a single GD&T block)

- Marked up Drawing / MBD
- Bubbled Drawing / PL / PSDL
- CMM Report
- Purchase Order Documentation



# Form Three, Field Seven: Characteristic Designator

#### R = Required



\*1: Required if characteristic is Critical, Key, Product Safety or a Special Requirement.

# Description:

This field contains the characteristic type.

### Additional Notes:

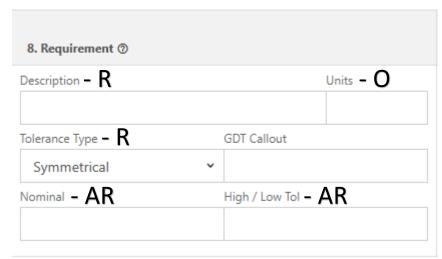
- This is not the name of the feature (e.g. linear dimension, diameter, prime, minor, etc.)
- It is preferred this field be left blank if there is not a Characteristic Designator.

- Marked up Drawing / MBD
- Bubbled Drawing / PL / PSDL
- CMM Report
- Purchase Order Documentation



# Form Three, Field Eight: Requirement

R = Required, AR = As Required, O = Optional



# Description:

- This field contains the specified requirement for the design characteristic and units of measure (e.g. drawing dimensional characteristics with associated nominal dimensions and tolerances included, basic dimensions, drawing notes, specification requirements, table dimensions, etc.)
- All requirements shall be recorded in the units specified on the Engineering Definition, (drawing, DPD or Specification).

### Where to find:

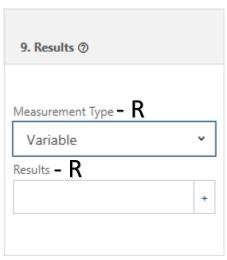
- Marked up Drawing / MBD
- Bubbled Drawing / PL / PSDL
- CMM Report
- Purchase Order Documentation



9/23/2020

# Form Three, Field Nine: Results (Variable)

#### R = Required



### **Additional Notes:**

- Parts that are validated by DPD datasets, (Coordinate Measuring Systems (CMS), Point Cloud, Faro Arm, scanning, etc.) must have the inspection results recorded on Form 3. The results must correlate directly with the characteristic identifiers on Form 3.
- CMM data alone would not be acceptable for a positional tolerance the results shall show the actual positional value.

# Description:

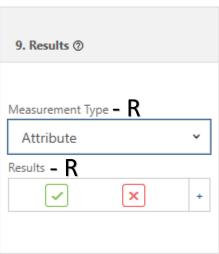
- This field contains the list of obtained measurements for the design characteristics.
- Results from inspection of design characteristics shall be expressed in quantitative terms (variable data)
- All results shall be recorded in the units specified on the engineering definition.
- For multiple characteristics, verify that every design characteristic
  requirement is accounted for, uniquely identified and has inspection
  results traceable to each unique identifier. List each characteristic as
  individual values or list once with the minimum and maximum
  measures values.
- When a characteristic is found nonconforming, list that characteristic separately with the measured value noted.
- When a design requirement requires verification testing, then the actual results will be recorded on the form. Record the process checks (Rockwell Hardness/Conductivity, etc.)



9/23/2020

# Form Three, Field Nine: Results (Attribute)

#### R = Required



### Attribute Data vs Variable Data:

- Attribute Data:
  - A result from a characteristic or property that is appraised only as to whether it does or does not conform to a given requirement (e.g. Go/No-Go, Accept/Reject, Pass/Fail)
- Variable Data:
  - Quantitative measurements taken on a continuous scale (e.g. the diameter of a cylinder, the gap between mating parts)

# Description:

- Attribute Data (e.g. Pass/Fail) may be used in lieu of Variable Data when:
  - There is no feasible inspection technique that will result in Variable Data.
  - The design characteristic does not specify numerical limits
  - When Quality Tooling (e.g. radius gauges) or Designed Tooling is used as a Go/No-Go gauge, record the results as an attribute (e.g. Pass/Fail)
- For characteristics verified by attribute inspection include a statement of conformance (e.g. accept), this includes statements for process verification (e.g. edge break, temporary protection)
- For multiple characteristics, verify that every design characteristic requirement is accounted for, uniquely identified and has inspection results traceable to each unique identifier.
- When a laboratory report of certificate of test is included and attached in the FAIR, then those results can be listed Pass/Fail.



# Form Three, Field Nine: Results (Not Reportable)

#### O = Optional



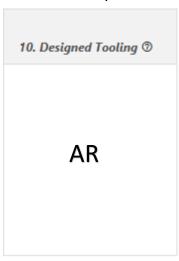
# Description:

• This field contains design characteristic that do not require measured results or a statement of conformance, items in the engineering that are for informational purposes only. AMT does not required these type of characteristics to be listed on the FAI.



# Form Three, Field Ten: Designed Tooling

#### AR = As Required



# Examples of Designed Tools:

- PCM:
  - 123X456789-SH1, Rev. A
- NC or CMM Program:
  - CMM 123456789-10\_Rev.A1-1-2019
- Jig Tooling:
  - MAJ123X456789-10Rev. A

# Description:

- When Designed Tooling is used for attribute inspection of a characteristic, this field shall contain the tool identification number/program number.
- Design Tooling is product specific tooling specifically made to validate design characteristics of a product, for example: CMM Programs, Check Fixtures.

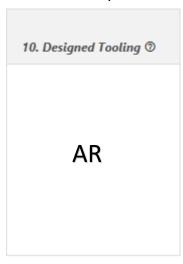
# Where to find:

Supporting Inspection Documentation



# Form Three, Field Ten: Qualified Tooling

#### AR = As Required



# **Examples of Designed Tools:**

- Go/No-Go Gauges:
  - 0.250/0.260
- Radius Gauges
  - 0.220/0.280
- Thread Gauges
- Pin Gauges

# Description:

- When Qualified Tooling is used for attribute inspection of a characteristic, this field shall contain the gauge value or range (e.g. min/max values) as applicable.
- Qualified Tooling is universal (not product specific) calibrated monitoring and measuring equipment used to validate product design characteristics. The tools must be uniquely identified and traceable to their calibration.

### Additional Information:

 Calibrated measurement tools (e.g. calipers, micrometer) may be used to validate qualified tooling in lieu of the qualified tooling being calibrated.

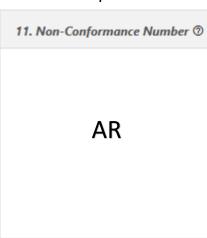
### Where to find:

Supporting Inspection Documentation



# Form Three, Field Eleven: Nonconformance Number

#### AR = As Required



# Description:

- This field contains the nonconformance number as assigned to the characteristic if found to be discrepant.
- Form 3, Field 9 should be failed or have a failing value.
- A partial FAI (Delta) is required once the nonconformance has been eliminated and a conforming part has been produced.

### Where to find:

Internal Procedures



# Form Three, Field Twelve & Thirteen: Prepared By & Date



# Description:

### Field 12: Signature

• This field contains the name of the person who prepared and signed Form 3. The signature indicates that all applicable materials, processes, and functional testing are accounted for, meet requirements, are properly documented, and all associated nonconformance's are documented.

#### Field 13: Date

• This field contains the completion date of the form.



# Form Three, Field Fourteen: Additional Data / Comments

#### AR = As Required



- Example entries could be but are not limited to:
  - Caliper
  - Micrometer
  - Scale
  - Visual
  - Isoscope
  - Sigma Test
  - Rockwell
  - Certificate of Conformance
  - Height Gage
  - Torque Gun
  - Autoclave Report
  - CMM Report.

# Description:

- This field contains the standard measuring acceptance devices or method of inspection used to inspect the product / feature to determine conformance.
- These tools must be capable of checking the feature to the level of precision and accuracy required by the requirement and tolerance.
- These tools shall be calibrated and certified to measure to the level of precision and accuracy required by the requirement and tolerance. These tools shall be controlled per your QMS requirements and records of these tools shall be traceable.
- This field should also contain any other requirements defined by the purchase order, contract and/or as defined within this document.



# Required Documentation



# Required Documentation:

- The following supporting documentation is required in addition to any customer specified requirements as separate attachments within the FAIR (as applicable to the content of the FAI):
  - Purchase Order
  - Parts List, Material Parts List, Picture Sheet Data List
  - Bubbled Engineering Media
  - Material Certifications from the original manufacturer (including standards, sealants, paints, metals, plastics, and prepregs, etc.)
    - Note: If using a distributor, full certification trail shall be included back to the original processor and/or manufacturer of material. C of C's must reference traceability number (e.g. raw material test report number, compliance report number, C of C) as assigned be the original manufacturer.
  - Parts and/or materials procured directly from AMT shall be traceable through an AMT provided C of C
  - Service procurement (Process(es)) C of C to include lot/batch traceability
  - Acceptance Test Reports, as applicable.
  - Process Certifications (or internal work document)
  - Service Procured Non-Destructive Inspections (NDI) reports.



# Required Documentation:

- The following supporting documentation is required in addition to any customer specified requirements as separate attachments within the FAIR:
  - Production Planning / Shop Traveler / Work Instruction / Manufacturing Plan including evidence of compliance with the supplier's internal
    procedure (e.g. stamps and dates of operations performed) shall be included when required by the AMT Purchase Order or upon request.
  - Contractual Amendments (POCs)
  - Supporting Inspection Documentation (e.g. CMM, Faro Arm, PCM or Mylar (adding a digital copy/photo of the mylar is acceptable) with mapping.
  - Copy of Nonconformance
  - For assembly FAIs: detail FAI reports must be made available if not linked in Net-Inspect
  - Documentation supporting additional changes (any additional documents beside the AMT purchase Order that are required in Form 1, Field 8)
- Note: Delta FAIs shall have the applicable supporting documentation as necessary.
- Note: For documents that contain supplier proprietary data, the proprietary data may be blackened out before the document is attached.



Revision	Revision Description	<b>Revision Date</b>	Approval
-	New Document to replace "AMT Net-Inspect FAI Form Completion for Suppliers.pdf"	9/23/2020	Brian C.

Prepared By: Quality Engineer	Brian Cocking	Date:	9/23/2020
Verified By User Representative: Supplier Quality Engineer	Alta Oien	Date:	9/23/2020
QA Approval: Quality Engineering Supervisor	Ria Acevedo	Date:	9/23/2020
Approved By Document Owner: Director of Quality	Colin Bixby	Date:	9/23/2020

