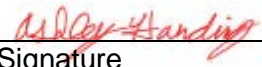




Supplier FAI Requirements

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Ashley Harding		SCQA Leader	18-Aug-19
Initiator	Signature	Title	Date
Tanya Bollivar		Quality Coordinator	18-Aug-19
Reviewer	Signature	Title	Date
Jose Stevaux		Quality Director	18-Aug-19
Manager	Signature	Title	Date

REVISION LOG

Rev	Change Description / Reason	Date
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A	Addition of Customer Specific Requirements for UTAS and Fan Cowl Door programs	18-Aug-19

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1. PURPOSE

The purpose of this document is to clarify Stelia North America (SNA) requirements for meeting the intent of SAE AS9102, Aerospace First Article Inspection Requirement and to provide a consistent requirement for SNA’s supplier First Article Inspection (FAI). The purpose of the FAI is to give objective evidence that all engineering, design, and specification requirements are correctly understood, accounted for, verified, and recorded.

2. SCOPE

This document is applicable to SNA sub-tier suppliers. Any deviations from this document shall be based on contractual agreements and addressed by specific customer documentation. Additional Customer/Program specific requirements can be found in the Appendices at the end of this document beginning with Appendix B.

3. DEFINITIONS

Engineering	An engineering drawing (type design authority data, also known as “face of the drawing”) or digital model file(s) that discloses, by means of graphic or textual presentations, or by combinations of both, the physical or functional requirements of an item.
Bubbled Engineering Media	A visual representation (i.e., drawing, Digital Product Definition (DPD), or DPD screen shots) with each characteristic or requirement marked with a unique identifier number. The number may be circled or boxed for easy visual identification.
Digital Product Definition (DPD)	The electronic data elements that specify the geometry, functional requirements and all design requirements for a product (including notation and parts lists), and the use of this data throughout an integrated CAD-CAM and CMS system.
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).
Qualified Tooling	Universal (not part specific) calibrated monitoring and measuring equipment (e.g., go/no go gauges, thread gauges, radius gauges) used to validate product design characteristics, that are uniquely identified and traceable to their calibration records.
Special Process	Any process 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. Refer to specification and/or NADCAP criteria for special process classification.
Specification Custodian	The organization who authored the specification and is responsible for managing approved sources.
Standard Catalog Hardware	A part or material that conforms to an established industry or national authority published specification, having all characteristics identified by test description, National/Military Standard Drawing, or catalog item.
Verify	To prove to be true by demonstration, evidence, etc.; confirm.

4. Requirements

Suppliers are required to accomplish FAIs in accordance with SAE AS9102, purchase order requirements and this document. The following sections provide SNA's standard instructions for executing this requirement and will ensure consistency across the supply base for a deliverable First Article Inspection Report (FAIR). All FAIs are to be provided in English or with a certified translation.

5. SAE AS9102 Form Completion

5.1. Form 1, Part Number Accountability

A. Field 1, Part Number

This field contains the number of the FAI part (e.g., part number listed on the purchasing documents, part number from the Bill of Materials (BoM) or the manufacturing part number for internal parts when customer part number is not available.)

NOTE: This may not match the part mark.

NOTE: Fields 1-4 should be the same throughout Form 1, Form 2 and Form 3

B. Field 2, Part Name

This field contains the name of the FAI part as identified in the engineering definition or purchase documents.

NOTE: This could be found in the BoM.

C. Field 3, Serial Number

This field contains the serial number of the product. Leave field blank if the serial number is not available or not applicable.

NOTE: Verification of the serialization requirement may come from different sources and may vary from customer to customer. (Example, Parts List, BoM, Digital Product Definition (DPD)/Model Based Definition (MBD) Notes Tree.)

D. Field 4, FAI Report Number

This field contains the FAIR number that identifies the FAI; this may be an internal report number.

E. Field 5, Part Revision Level

This field contains the part revision of the FAI part.

NOTE: The engineering revision listed in Field 7 does not always affect all parts contained in the engineering or DPD.



F. Field 6, Drawing Number

This field contains the Drawing number(s) or Digital Product Definition (DPD) dataset(s) associated with the FAI part.

NOTE: If information is from digital data, include the file extension i.e. part number .CATPart or .CATProduct.

G. Field 7, Drawing Revision Level

This field contains the revision level of the drawing(s) and/or DPD dataset(s) associated with the FAI part. The revision should be in the same format as depicted in the engineering. (Example: Rev (No Change) (NC), 0, -A-, etc.)

H. Field 8, Additional Changes

This field contains the reference numbers of any document that authorizes a deviation from Drawing/DPD or engineering applicable to the part including the associated Rev Status/Date control associated with the document. These are changes that are incorporated in the product by the customer, but not reflected in the referenced drawing/DPD/part revision level. Example: change in design, engineering changes, manufacturing changes, deviation or exclusion from certain requirements, etc.

These documents include Technical Notes (TN), Design Query Note (DQN), Specification Plans (SP), Condition of Supply (CoS), Subcontracted Parts – Revision Authorization and Transmittal (SPRAT) etc.

This field should be left blank where no authorized deviation document exists.

NOTE: Request for Assistance (RFA) or email responses to questions from the supplier are not to be considered authorization to deviate from documented requirements.

I. Field 9, Manufacturing Process Reference

This field contains the reference number that provides traceability to the Manufacturing Record for the FAI part.

Examples:

- Production Order
- Router
- Work Order
- Traveler
- Electronic Work Instructions (EWI)

NOTE: Additional information such as revisions, lot number, batch number, date code, or line number may be included, as needed, to provide traceability to the specific manufacturing lot.

J. Field 10, Organization Name

This field contains the name of the Organization that is performing the FAI.

K. Field 11, Supplier Code

This field contains the Supplier Code assigned to the supplier by SNA. This is a 5 digit alphanumeric code uniquely assigned to each supplier

L. Field 12, Purchase Order (P.O.) Number

This field contains the Purchase Order number issued to the supplier by SNA. Provide PO line number when applicable.

M. Field 13, Detail FAI/Assembly FAI

This field contains the appropriate check box to identify an Assembly or Detail FAI.

N. Field 14, Full FAI/Partial FAI

This field contains the appropriate check box to identify a full FAI or partial FAI. For a partial FAI, provide the baseline part number (including the revision level) to which the partial FAI is performed and the reason. Example: changes in design, process, manufacturing location, re-inspection of nonconforming characteristics from a previous FAI.

NOTE: Partial FAIs are also known as Delta FAIs. Partial FAIs that accommodate part families including opposites must be managed in accordance with end item customer requirements. Refer to SAE AS9102B; §4.6 for further guidance.

O. Field 15, Part Number

This field contains the part number included in the assembly and items from the BoM included in the drawing, DPD, or next level assembly. Typically these are the part numbers, standard catalogue items, or sub-assembly numbers required to complete the product noted in field 1.

NOTE: Fields 15-18 are only required if the part number in Field 1 is an assembly (indicated as an Assembly FAI in Field 13) requiring lower-level details, sub-assemblies, or standard catalogue items to be installed into the assembly or to identify prior approved FAI/configuration performed on similar characteristics/identical means. For partial FAIs on assemblies, list only those details, sub-assemblies, or standard catalogue items affected by the change.

P. Field 16, Part Name

This field contains the part name of the details, sub-assemblies, or standard catalogue items.

Q. Field 17, Part Serial Number

This field contains the serial number of the detail or sub-assembly.

NetInspect Secondary Field: Supplier

This field contains the applicable supplier that made the detail, sub-assemblies, or who the standard catalogue hardware was procured from.

NOTE: If a supplier is not listed, a manual entry is required including supplier name, city and state or country.

R. Field 18, FAI Report Number

This field contains the FAIR number that is associated with the FAI details or sub-assemblies.

NOTE: This may be an internal report number.

NOTE: For NetInspect only, the information annotated in Fields 15-17 (including Supplier Field) must be exactly as defined on the detail or sub-assembly FAIR to ensure successful hyperlinking.

NOTE: For standard catalogue items this field is reserved for the Certificate of Conformance (CoC) number (e.g., raw material test report number, compliance report number, traceability number) assigned by the manufacturer of the standard catalogue item. Distributor certs must contain this number as assigned by raw Material manufacturer to provide full traceability.

S. Field 19, Signature

This field contains the printed name **and** signature of the person who prepared the FAIR. Check "FAI Complete", if all characteristics are conforming. Check "FAI Not Complete", if nonconforming characteristics are documented in accordance with SAE AS9102F; §4.4.

NOTE: Electronic identification and signature are both acceptable.

NetInspect Specific Field: Pass/Fail

This field contains the selection for Pass or Fail. Select "Pass" if there are no non-conformance listed in Form 3. Select "Fail" if there are non-conformances written against any design characteristics listed in Form 3.

T. Field 20, Date

This field contains the date when the FAI Form 1 was prepared.

U. Field 21, Reviewed By

This field contains the printed name **and** signature of the person who reviewed and approved the FAIR for the organization performing the FAI. It is recommended this review be accomplished by someone other than the person who prepared the FAI; e.g. signature in Field 19.

NOTE: Electronic identification and signature are both acceptable.

V. Field 22, Date

This field contains the date when the FAI Form 1 was reviewed.

W. Field 23, Customer Approval

This field is reserved for the Customer's approval of the FAIR. For the purposes of this document, "Customer" is the organization receiving the FAI hardware.

NOTE: Electronic identification and signature are both acceptable.

X. Field 24, Date

This field contains the Customer's approval date of the FAIR.

5.2. Form 2, Product Accountability – Raw Material, Specifications and Special Processes, Functional Testing

The function of Form 2 is used when material, special processes or functional testing is defined as a design requirement.

A. Field 1, Part Number

This field contains the number of the FAI part (e.g., part number listed on the purchasing documents, part number from the Bill of Materials (BoM) or the manufacturing part number for internal parts when customer part number is not available.)

NOTE: This should be the same as Form 1, Field 1.

B. Field 2, Part Name

This field contains the name of the FAI part as identified in the engineering definition or purchase documents.

NOTE: This should be the same as Form 1, Field 2.

C. Field 3, Serial Number

This field contains the serial number of the product.

NOTE: This should be the same as Form 1, Field 3.

D. Field 4, FAI Report Number

This field contains the FAIR number that identifies the FAI; this may be an internal report number.

NOTE: This should be the same as Form 1, Field 4.

E. Field 5, Material or Process Name

This field contains the name of the material, or special processes as identified by the full title of the specification. Leave blank if no materials or special processes apply.

Example:

ALUMINUM ALLOY (2024) SOLUTION TREATED AND NATURALLY AGED (T3) CLAD SHEET
AND STRIP 0,2 MM (A) 6,0 MM STANDARD SURFACE QUALITY

CHEMICAL CONVERSION COATINGS FOR ALUMINUM AND ALUMINUM ALLOYS

NOTE: For processes list only those processes that are identified as “special” by the specification custodian.

F. Field 6, Specification Number

This field contains the following:

- Material specifications including revision and material form (e.g., sheet, bar) for all materials incorporated in the FAI part (e.g., weld or braze filler).
- Special process specifications including revision; also including class (type, code, etc.), if applicable, and permitted substitutions.
 - Include all “Make From” materials that are incorporated in the FAI part (weld/braze filler materials, balls for ball brazing, etc.), but do not include processing materials such as acid etchants, solvents, or tape.
- If standard catalogue items (e.g., fasteners) or Commercial – Off – The – Shelf (COTS) are modified, then list that standard hardware or COTS item. All modifications must be accounted for within the FAI (Form 3) or on a separate FAI.
 - NOTE: Non-modified standard catalogue items shall be listed on Form 1, “Part Number Accountability”.
- For processes and materials, the specification numbers are defined within the Engineering/Drawing/DPD. Specification numbers shall correspond to the actual specification name.

Examples:

BACB30VT3-10CD; AIMS 03-04-014; BAC5719

G. Field 7, Code

Not required, leave blank.

H. Field 8, Supplier

This field contains the Supplier code, Supplier name, full address and supplier code of the organization performing the special processes or supplying material. Supplier name and address may be used, when supplier code is not available or not adequate for identification.

NOTE: Use the supplier code assigned to the supplier by the Prime Customer of the FAI part as referenced in their ASL.

NOTE2: If a supplier outsources a special process then list the information of the company that performs the special process including the applicable supplier code, company name, and full address.

NOTE 3: Supplier information must correspond to the customer's approved suppliers list if applicable.

I. Field 9, Customer Approval Verification

Indicate if the special process(es) or material sources are approved by the customer. Enter "Yes" if approved; "No" if approval is required, but process source is not approved; or "NA" if customer approval is not required.

J. Field 10, Certificate of Conformance Number

This field contains the Certificate of Conformance (CoC) number (e.g., special process completion certification, raw material test report number, compliance report number, traceability number).

NOTE: A Purchase Order is not sufficient to satisfy this requirement unless additional supporting documents are provided as noted above.

NOTE2: For items required to be listed on Form 2 this field is reserved for the Certificate of Conformance (CoC) number (e.g., special process completion certification, raw material test report number, compliance report number, traceability number) assigned by the manufacturer or processor of the item. Distributor certs must contain this number as assigned by manufacturer.

K. Field 11, Functional Test Procedure Number

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

NOTE: Functional test procedures are not an in-process check. The Functional Test Plan (FTP) or Acceptance Test Procedure (ATP) is clearly defined as a test procedure and is typically found in the drawing notes or Part List or BOM (PL/BoM) or DPD.

L. Field 12, Acceptance Report Number

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

NOTE: If no report number is generated, refer to the production order for evidence of acceptance.

M. Field 13, Comments

Optional Entry – This field contains any comments as warranted.

N. Field 14, Prepared By

This field contains the Printed name **and** signature of the person who prepared and approved this form. Signature indicates that all applicable materials, special processes, and functional testing are accounted for, meet requirements, are properly documented, and all associated non-conformances are documented on SAE AS9102B Form 3, “Characteristic Accountability, Verification, and Compatibility Evaluation”.

NOTE: Electronic identification and signature are both acceptable.

O. Field 15, Date

This field contains the completion date of the form.

5.3. Form 3, Characteristic Accountability, Verification and Compatibility Evaluation

This form is used to record inspection results for the design characteristics and to document any applicable non-conformance (reference SAE AS9102B §4.4).

A. Field 1, Part Number

This field contains the number of the FAI part (e.g., part number listed on the purchasing documents, part number from the Bill of Materials (BoM) or the manufacturing part number for internal parts when customer part number is not available.)

NOTE: This should be the same as Form 1, Field 1.

B. Field 2, Part Name

This field contains the name of the FAI part as identified in the engineering definition or purchase documents.

NOTE: This should be the same as Form 1, Field 2.

C. Field 3, Serial Number

This field contains the serial number of the product.

NOTE: This should be the same as Form 1, Field 3.

D. Field 4, FAI Report Number

This field contains the FAIR number that identifies the FAI; this may be an internal report number.

NOTE: This should be the same as Form 1, Field 4.

E. Field 5, Characteristic Number

This field contains a unique assigned number for each design characteristic.

NOTE: A single design callout that applies to multiple characteristics may be recorded as one characteristic number.

NOTE2: Datasets derived from MBD engineering may be used for characteristic mapping provided the organization is DPD approved.

F. Field 6, Reference Location

This field contains the location of the specific design characteristic (drawing zone, page number and section, DPD/MBD model location, specification callout, etc.) being verified.

NOTE: The reference location must match where the identifier is found in the attached “bubbled” engineering media, screen shots, etc.

G. Field 7, Characteristic Designator

This field contains the characteristic type. Record characteristic type e.g., critical items (see SAE AS9100C Clause 3.3), key characteristics (see SAE AS9100C Clause 3.4), flight safety, and/or defined by customer. Leave blank if there is no characteristic type defined by the customer.

NOTE: This designator is feature specific and is typically identified in the engineering definition. It does not include standard measuring equipment or feature type.

H. Field 8, Requirement

This field contains the specified requirement (including tolerance) for the design characteristic (e.g., drawing dimensional characteristics with associated nominal dimensions and tolerances included, drawing notes, specification requirements, etc.).

I. Field 9, Results

List the obtained measurements for the design characteristics. This field contains:

- For multiple characteristics, list each characteristic as individual values or list once with the minimum and maximum of measured values attained.
- NOTE: All Results shall be recorded in the units specified on the Engineering Definition and to the same or better precision, (drawing, DPD file or specification) unless otherwise approved by SNA.
- NOTE2: When a characteristic is found to be nonconforming, then that characteristic shall be listed separately with the measured value noted.
- Attribute Data (e.g., pass/fail) may be used in lieu of Variable Data when:
 - When no inspection technique resulting in Variable Data is feasible.
 - The Design Characteristic does not specify numerical limits.
 - When Qualified Tooling(e.g., radius gauges) or Designed Tooling is used as a go/no-go gauge (reference SAE AS9102B §4.4.3.b), record the results as an attribute (e.g., pass/fail).
 - For characteristics verified by attribute inspection include statement of conformance (e.g., accept).
- 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 32. The results on the reports must correlate directly with the characteristic identifiers on Form 3.
 - NOTE: Coordinate Measurement Machine (CMM) data alone would not be acceptable for a positional tolerance; the results shall show the actual positional value.
 - NOTE2: The CMM/Faro Arm report does not need to be bubbled, but does need to correspond to the engineering features listed on Form 3 (i.e. profile bubble #17, See CMM report 92-114d.)
- When a design requirement requires verification testing, then the actual results will be recorded on the form. Record process checks (Rockwell Hardness and conductivity, edge break or tape test results, etc.) when required by end-item customer.
 - NOTE: When a laboratory report or certificate of test is included in the FAIR, then those results need not be written on the form. The laboratory report or certificate of test must be attached and show specific values for requirements and actual results.
- For characteristics with visual verification requirements that are rated against standard photographs, list the photo number of the closest comparison.
 - NOTE: A statement of conformance is acceptable (record the reference number in this field).
- For part marking, ensure that the marking is legible, correct in content and size and properly located in accordance with the applicable specification.
- For processes that require verification per design characteristics, include a statement of conformance (e.g. certification of conformance, verification indicator – accept).

J. Field 10, Designed Tooling/Qualified Tooling

When Designed Tooling is used for attribute acceptance of the characteristic, this field shall contain the tool identification number/program number.

Designed Tooling is product specific tooling (e.g., check fixtures, CMM program, Numerically Controlled Programming) specifically made to verify the design characteristics of a product.

When Qualified Tooling (e.g., radius gauges) is used for attribute acceptance, record the gauge value or range (e.g. minimum/maximum value) as applicable.

K. Field 11, Non-conformance Number

This field contains the non-conformance number as assigned by the customer if the characteristic is found to be discrepant.

L. Field 12, Prepared By

This field contains the Printed name **and** signature of the person who prepared and approved this form. Signature indicates that all applicable materials, special processes, and functional testing are accounted for, meet requirements, are properly documented, and all associated nonconformances are documented on SAE AS9102B Form 3, "Characteristic Accountability, Verification, and Compatibility Evaluation".

NOTE: Electronic identification and signature are both acceptable.

M. Field 13, Date

This field contains the completion date of the form.

N. Field 14

This field is reserved for optional fields. Add columns as required by the purchase order or contract.

6. Appendix A: FAI Supporting Documentation

The following supporting documentation is required in addition to any customer specified requirements:

1. Purchase Order
2. Bill of Material (additional examples include PL and PSDL)
3. Bubbled Engineering Media (Bubble Drawing/Screen shot etc. per SAE AS9102B)
4. Material Certifications from the original manufacturer (including standards, sealants, paints, metals, plastics, and prepregs, etc.).
 - a. NOTE: If using a distributor, full certification trail shall be included back to the original processor and/or manufacturer of material. CoC's must reference traceability number (e.g., raw material report number, compliance report number, CoC) as assigned by the original manufacturer.
5. Service Procurement CoC (to include lot/batch traceability)
6. Acceptance Test Reports
7. Service Procured Non-destructive Inspections (NDI) reports
8. Production Planning/Shop Traveler
9. Contractual Amendments
10. Supporting Inspection Documentation (examples include CMM, Faro Arm, PCM, or Mylar) with mapping.
11. Copy of Non-conformance (must either have engineering disposition, have been reworked per specification allowed procedures, or dispositioned as scrap)
12. For assembly FAIs: detailed FAI reports must be made available, if not linked in NetInspect.
13. Supplier to SNA CoC
14. Documentation supporting additional changes (as applicable to Form 1 Field 8)

NOTE: For documents that contain supplier proprietary data, the proprietary data may be blackened out before the document is attached.

7. Appendix B: UTAS and Pratt & Whitney Special Requirements

The following special requirements apply for parts destined for delivery to UTAS or Pratt & Whitney. The applicable programs are the Pre-cooler Ducts, Phenolic Fillers, and Fan Cowl Door.

Form 3, Characteristic Accountability, Verification and Compatibility Evaluation

A. Field 14

For each characteristic: Record type of inspection measuring equipment used (e.g. gage name, type, description) and inspector identification (e.g. signature, stamp, electronic authorization) of the person that accomplished the inspection.