Supplier Guide for Completion of First Article Inspection (FAI) Reports

Introduction

- This presentation is intended as supplemental information in support of the AS9102 Standard for Aerospace First Article Inspection requirements. The requirements cited in the standard always take precedence.
- This material should be used in conjunction with applicable East/West Drawings, Specifications, Terms and Conditions, Quality Clauses, and Workmanship Standards to create a complete FAI report.

Purpose

The purpose of an FAI is to validate and provide objective evidence that:

- Product realization processes are capable of producing parts and assemblies that meet engineering and design requirements.
- Provide confidence that the product realization processes can produce conforming product.
- Demonstrate that the manufacturers and processors of the product understand the associated requirements.

When Should an FAI be Performed?

The supplier will be required to perform an FAI when Quality Clause Q5b is invoked on the PO. However, a supplier should also perform an FAI when any of the following conditions occur:

- Full FAI
  - Change in location of manufacture
  - Lapse in Production of more than 2 years

- Partial (Delta) FAI – Only include the characteristics that are affected by the change
  - Revision Change
  - Change in Sub-Tier Supplier
  - A change in the method of manufacture (e.g. tooling, processes, machine, numerical control program, sequence of manufacture)

What is required in an FAI?

The supplier will be required to perform an FAI for the parts identified on the PO when Quality Clause Q5b is invoked.

- Detail parts as defined by engineering drawings or model-based definitions.

- Assemblies - for the characteristics specified on the assembly level drawing, **and**
- All levels of subassembly and detail parts utilized by the assembly – Including castings and forgings

- Modified Standard or COTS Items as “make from” with unique modifications on drawings – Only the modifications’ characteristics need to be accounted for

What does not require an FAI?

Unless contractually required, Quality Clause Q5b does not apply to:

- Development and prototype parts that are not considered as part of the first production run.
- Unique single run production orders, not intended for ongoing production (e.g., out-of-production spares).
- Procured standard catalogue items, COTS, or deliverable software.

No FAI required

Planning Activities

The supplier should consider the following activities during FAI planning and coordinate planning with East/West, if required:

- Determine if there are any characteristics that will not be measurable in the final product and decide where these measurements will be taken.
- Extract Digital Product Definition (Model Based Definition) characteristics required for production that are not fully defined on 2D drawings, including tolerances for nominal dimensions.
- Determine what objective evidence will be included in the FAIR for each characteristic.

Planning Activities - Continued

- Determine if any approved special process, laboratory, material, and/or East/West required sources are identified, and that the manufacturing planning and sub-tier purchase order flows down the correct specification and sources.
- Ensure that any key characteristic and/or critical item requirements are identified.
- Determine if any part specific gauges and/or tooling is required. Make sure the gauges and/or tooling is identified, qualified, and traceable.
- Work with East/West Supply Chain and Quality to see if advanced FAI review/approval is required.

Evaluation Activities

The supplier needs to complete the following activities before or during production (when applicable) in support of FAI to ensure conformance with design characteristics:

- Review documentation for the manufacturing process (e.g., routing sheets, manufacturing and quality plans, manufacturing work instructions) to ensure all operations are complete as planned and call out the correct specification, material types, conditions, and approvals.
- Review supporting documentation in the FAI (e.g., inspection data, test data, Acceptance Test Procedures, special process approvals and certifications) for completeness.
- Verify that the raw material and special process certifications call out the correct specification, material types, conditions, and approvals.
- Verify that required East/West approved sources are used.

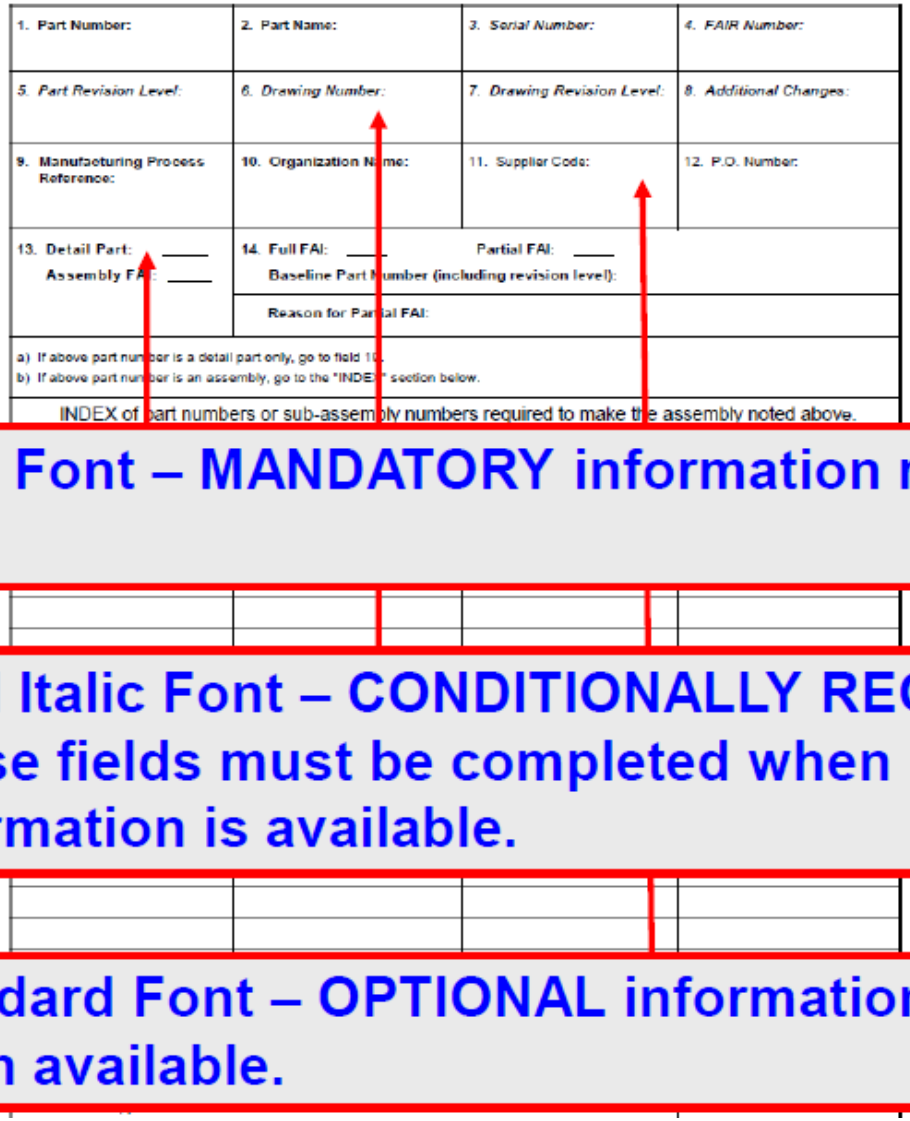
Evaluation Activities - Continued

- Verify that required tooling (e.g., part specific gauges) are used and appropriately documented on Form 3.
- Verify that every characteristic is accounted for, uniquely identified, and has inspection results traceable to each unique identifier.
- Verify the characteristics that are the output of the manufacturing process are measured, inspected, tested, or verified to determine conformance, including DPD characteristics.
- Verify part marking is legible, correct in content and size, and properly located per applicable specifications.

What needs to be included?

- Part Number Accountability (form 1) - used to identify the product that is having the First Article Inspection (FAI) conducted on (e.g., detail part, subassembly, assembly); referred to as “FAI part”.
- Accountability – Materials, Special Processes, and Functional Testing (form 2) - used if any materials, special processes, or functional testing are defined as characteristics.
- Characteristic Accountability, Verification, and Compatibility Evaluation (form 3) - used to record inspection results for the design characteristics and to document any applicable nonconformances.
- Supporting Documentation – used to prove characteristic acceptance (see slide 24 on what supporting documentation is required)

AS9102 B Forms – What needs to be filled out?



Bold Font – MANDATORY information required.

Bold Italic Font – CONDITIONALLY REQUIRED. These fields must be completed when information is available.

Standard Font – OPTIONAL information required when available.

AS9102 B Form 1 –Part Number Accountability

1. Part Number:	2. Part Name:	3. Serial Number:	4. FAIR Number:
5. Part Revision Level:	6. Drawing Number:	7. Drawing Revision Level:	8. Additional Changes:

Box 1 – Enter the Part Number of the FAI part from the PO
Box 2 – Name of the FAI part (can be found on the PO)
Box 3 – Serial number of the FAI part (If Applicable)
Box 4 – Supplier Reference number for FAIR
Box 5 – Revision of the FAI part being inspected
Box 6 – Drawing number or DPD data set of the FAI part
Box 7 – Revision level of the drawing or DPD data set of the FAI part
Box 8 – DWI number for any other Deviations/Waivers granted but not incorporated into the drawing or DPD data set

AS9102 B Form 1 –Part Number Accountability

9. Manufacturing Process Reference:	10. Organization Name:	11. Supplier Code:	12. P.O. Number:
13. Detail Part: _____ Assembly FAI: _____	14. Full FAI: _____ Partial FAI: _____ Baseline Part Number (including revision level):		
	Reason for Partial FAI:		

Box 9 – A reference number that provides traceability to the manufacturing record of the FAI part (router, work order, etc.)

Box 10 – Name of the supplier performing the FAI (your company)

Box 11 – Your East/West supplier code (can be found on the PO)

Box 12 – East/West Purchase Order number

Box 13 – Check as appropriate. Any parts that have subcomponents or subassemblies listed on the drawing should be marked as Assembly FAI (usually single digit dash numbers)

Box 14 – Check as appropriate. For a partial FAI, provide the previous part number and revision level used as the baseline and the reason for the current FAI.

AS9102 B Form 1 –Part Number Accountability

a) If above part number is a detail part only, go to field 19. b) If above part number is an assembly, go to the "INDEX" section below.			
INDEX of part numbers or sub-assembly numbers required to make the assembly noted above.			
15. Part Number:	*16. Part Name:*	*17. Part Serial Number:*	*18. FAIR Number:*

Boxes 15-18 are only required if the part number in Box 1 is an Assembly with lower-level parts (Box 13 should be marked Assembly also)

Box 15 – Lower-level part numbers included in the assembly (one per row)
Box 16 – Corresponding Name of the part
Box 17 – Serial number of the part installed in the assembly (if applicable)
Box 18 – FAI Report number for the lower-level part in Box 15

AS9102 B Form 1 –Part Number Accountability

19. Signature: ___ FAI Complete ___ FAI Not Complete			20. Date:
21. Reviewed By:			22. Date:
23. Customer Approval :			24. Date:

Box 19 – Name of the person completing the FAIR. This can be a signature or filled out electronically. Mark whether the FAI is complete or not. Any FAI that has a nonconformance or is otherwise not production ready shall be marked Not Complete.

Box 20 – Date when field 19 was signed

Box 21 – Name of the person approving the FAIR. This can be a signature or filled out electronically

Box 22 – Date when field 21 was signed

Box 23 – Used by East/West to record approval, if required

Box 24 – Date when field 23 was signed

AS9102 B Form 2 –Product Accountability

1. Part Number:	2. Part Name:		3. Serial Number:		4. FAIR Number:
5. Material or Process Name:	6. Specification Number:	7. Code:	8. Supplier:	9. Customer Approval Verification:	10. Certificate of Conformance Number:

Boxes 1-4 are repeated on all forms for convenience and traceability

Box 5 – Name of the material and/or special processes used in the detail part (Assembly materials should be listed on lower-level detail FAIRs).
Box 6 – Material specifications and temper for all materials used in the FAI part. Special process specifications; including class (if applicable). If standard catalogue items or COTS are modified, then list that standard hardware or COTS item.
Box 7 – The East/West Process and Finish codes from EWI-PC-1000 or EWI-FC-1000 as applicable
Box 8 – Identify supplier name (and address and CAGE code if known) performing the special processes or supplying material.
Box 9 – Indicate if the special process source is approved by East/West (note: For Special Processes, approved suppliers are on the East/West AVL available at https://www.eastwestindustries.com/wp-content/uploads/2020/07/ApprovedFCPCVendors.pdf)
Box 10 – Enter the applicable certificate number

AS9102 B Form 2 –Product Accountability

11. *Functional Test Procedure Number:*	12. *Acceptance Report Number:*
13. Comments	
14. Signature	15. Date

Box 11 – Functional Test Procedure number identified as a design characteristic

Box 12 – The functional test certification indicating that test requirements have been met

Box 13 – Provide supporting comments, as applicable

Box 14 – Name of the person completing the Form. This can be a signature or filled out electronically

Box 15 – Date when field 14 was signed

AS9102 B Form 3–Characteristic Accountability, Verification and Compatibility Evaluation

1. Part Number				2. Part Name			3. Serial Number	4. FAIR Number
Characteristic Accountability				Inspection / Test Results				
5. Char. No.	6. Reference Location	7. Characteristic Designator	8. Requirement	9. Results	10. Designed / Qualified Tooling	11. Nonconformance Number	14. Additional Data / Comments	

Box 9 – List measurement(s) obtained for the characteristic.

- For multiple characteristics list each characteristic as individual values or list once with the minimum and maximum of measured values attained. If a characteristic is found to be nonconforming, then that characteristic shall be listed separately with the measured value noted.
- When qualified tooling (e.g., radius gauges) is used as a go/no go gauge, record the results as an attribute (e.g., pass / fail)
- When automated inspection tooling produces measurement results, those results may be referenced on Form 3, identified as pass/fail, and attached (see Slide 24) only when:
  - The results in the attached reports are clearly traceable to the characteristic numbers.
  - The results are directly comparable to the characteristic.

AS9102 B Form 3–Characteristic Accountability, Verification and Compatibility Evaluation

1. Part Number				2. Part Name			3. Serial Number	4. FAIR Number
Characteristic Accountability				Inspection / Test Results				
5. Char. No.	6. Reference Location	7. Characteristic Designator	8. Requirement	9. Results	10. Designed / Qualified Tooling	11. Nonconformance Number	14. Additional Data / Comments	

Box 9 – Continued

- If a requirement requires verification testing, record the actual results on the form. If a laboratory report or certificate of test is included in the FAIR, the results may be recorded as an attribute (e.g., pass / fail) and the test reference number recorded on form 2. The laboratory report or certificate of test shall show specific values for requirements and actual results.
- For processes that require verification per design characteristics, include a statement of conformance (e.g., per cert) and include the process on form 2.
- For characteristics verified by attribute inspection (e.g., park marking) include statement of conformance (e.g., accept).

AS9102 B Form 3–Characteristic Accountability, Verification and Compatibility Evaluation

1. Part Number				2. Part Name			3. Serial Number	4. FAIR Number
Characteristic Accountability				Inspection / Test Results				
5. Char. No.	6. Reference Location	7. Characteristic Designator	8. Requirement	9. Results	10. Designed / Qualified Tooling	11. Nonconformance Number	14. Additional Data / Comments	

Box 10 – When specially designed tooling (including NC programming as a media of inspection) is used for attribute acceptance of the characteristic, record the tool identification number. When calibrated tooling is used for attribute acceptance, record the gauge control number.

Box 11 – If the characteristic is found to be nonconforming, record a nonconformance document reference number. This will automatically indicate that the FAI is not complete and shall be indicated as such on form 1, Box 19.

Box 14 – This area is reserved for any additional notes or comments that will help to explain the results of the characteristic evaluation.

AS9102 B Form 3–Characteristic Accountability, Verification and Compatibility Evaluation

12. Signature							13. Date

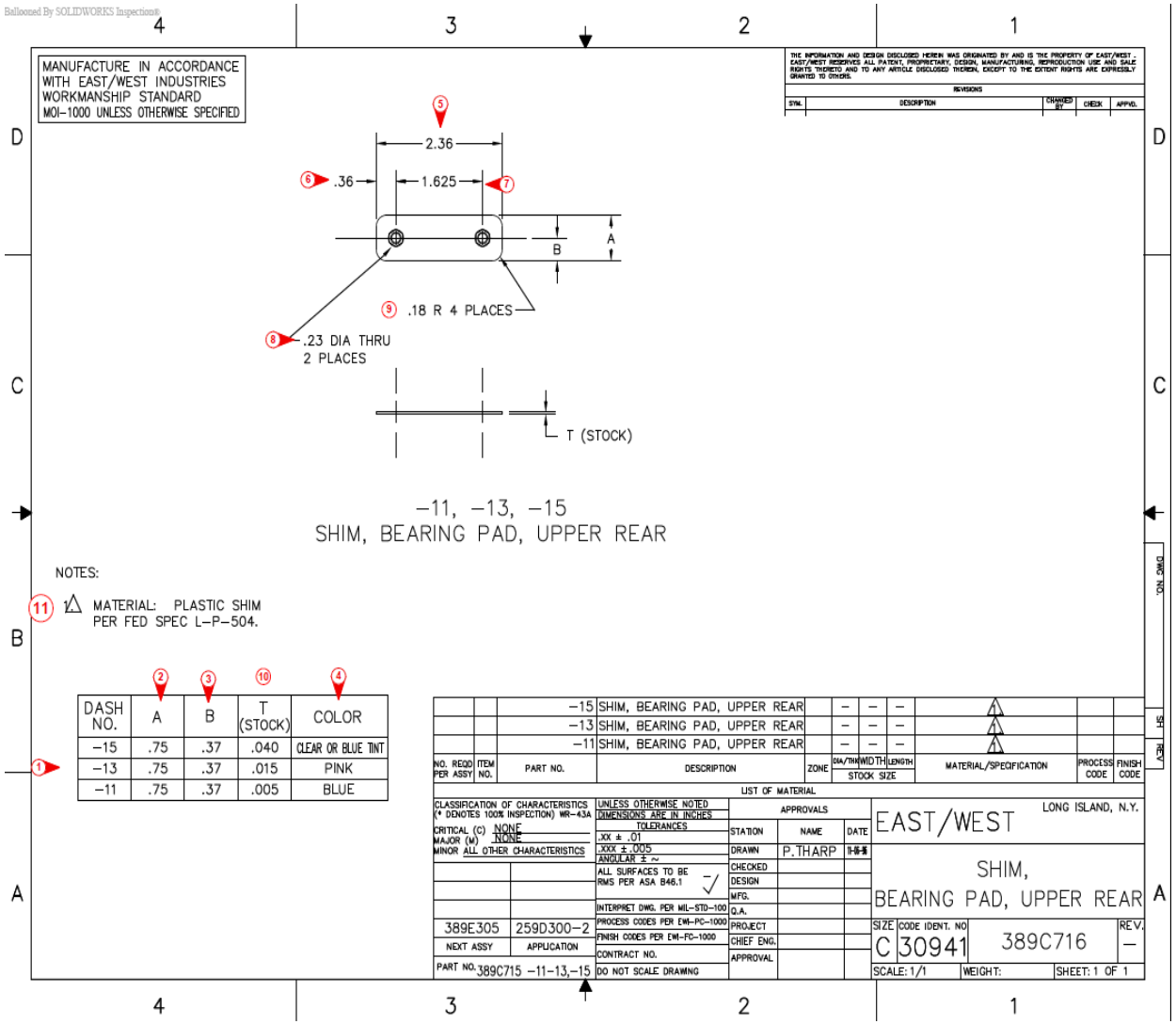
Box 12 – Name of the person completing the Form. This can be a signature or filled out electronically

Box 13 – Date when field 12 was signed

Ballooned Drawings

A ballooned drawing is considered an industry best practice and is objective evidence to show that all characteristics are accounted for.

- Verify that all characteristics are accounted for
- Balloon and number all dimensions, surface finish requirements, notes, material callouts, process callouts, hardness callouts, etc.
- Don't forget the requirements identified in the title boxes at the bottom of the drawings.



Supporting Documentation

In addition to the ballooned drawing, objective evidence to show that all characteristics are accounted for and met must be provided.

- Any material or Special Processes that are performed on the part must have Certifications of Conformance (C of C's) from East/West approved sources
  - In the case of special process providers, any NADCAP approved source is acceptable
  - In some cases, the PO will require the use of a particular source (e.g., if the part is for Northrop Grumman, NGC approved sources must be used)
- Any test or Qualification reports that are called out on the drawing will need to be included
- Any subassembly or detail part FAI's will need to be included
- If PO requirements are included as design characteristics, the PO must be included
- Any Automated test Reports (including CMM reports) need to be included
- Any COTS parts used in an assembly must have a vendor C of C showing traceability to the OEM provided and included
- Any Manufacturing Process Reference included on Form 1, Box 9, should be included

Most Common Reasons for FAIR Rejection

- Missing FAI Reports and/or Test Reports for subassemblies and/or fabricated detail parts
- East/West required supporting documentation does not accompany the FAI Report (C of C's, etc.).
- FAI does not account for all characteristics.
- Variable data requirements from the engineering drawing are not provided with numerical results.
- Missing or wrong information provided.
- Missing special processor or Material Supplier name on Form 2, box 8.
- Missing tolerances on Form 3, box 8.
- All 3 forms are not signed

FAQ – Forms Usage

Q1: Are requirements defined as "CR" in the forms (1-3) to be filled only when there is a special requirement from the customer or, always filled when applicable?

Q1 Answer: "Special requirement from the customer" is only an example of Conditionally Required (CR) items must be filled in when "applicable". For example, not all parts have a serial number but when they do you must fill in that field (form 1 field 3). The same is true for the other "CR" fields. When not applicable or required by engineering, leave them blank or write N/A.

Q2: What is the condition upon which form 1, field 4, FAIR Number, is required?

Q2 Answer: Field 4 is required when an organization is using a process to produce their FAI that will assign a unique FAIR number to the FAI. This field would not be required when an organization is using paper forms or electronic forms that do not generate a unique FAIR number.

FAQ – Forms Usage

Q3: What is the difference between field 5 and field 7 on form 1?

Q3 Answer: Field 6 of Form 1 is the Drawing Number; this field should have the drawings (including parts list), that contain design characteristics needed for product realization. There may be more than one drawing listed in this field. Field 7 of Form 1 is the Drawing Revision Level, this would be the revision level of the drawing or DPD set that is listed in field 6. When there is more than one entry in field 6 then the entries in this field need to correspond to the entries in field 6. Field 5 of Form 1 is the Part Revision Level, this is the revision level that is identified on the part. Not all organizations use a part revision level for tracking configuration.

Q4: What are some examples of entries for form 1, field 9 (required field)?

Q4 Answer: The intent is to provide linkage to the planning/router that was used during the manufacture of the FAI part/assembly. Some companies track parts with a production control number and a "router issue number". Production control numbers are usually for cost collection and order tracking and router issue numbers can be directly correlated to the router. You may use anything that provides linkage to the exact router/planning used during FAI.

FAQ – Forms Usage

Q5: Form 1 field 9: Manufacturing Process Reference. Please elaborate on what is required?

Q5 Answer: The purpose of field 9 on form 1 is to provide traceability from the FAI part to the router/planning used to manufacture the part. Any number or reference that provides that traceability is acceptable.

Q6: What is the expectation for field 18 when the organization does not have a supplier's FAIR number?

Q6 Answer: When an organization does not have the supplier's FAIR number because it does not exist or is not stored to where the organization has access to view the supplier's FAIR when performing their own FAIR, then FAIR number would not be required. When a supplier FAIR number is documented in field 4 of the supplier FAI and the organization has access to view the number when performing the next level FAI then it would be required to be added to the organization's FAI.

Q7: Are the AS9102 Forms mandatory?

Q7 Answer: You may create your own forms, but they must require the same information as the AS9102 forms and must be numbered with the same field numbers.

FAQ – Forms Usage

Q8: Can parts lists, reports and other records be noted on the forms and attached rather than copying all the data onto the forms?

Q8 Answer: Yes, you may reference the attachments on the forms and attach parts lists, reports etc. You may also attach drawings to form 3 and note the drawing on the form as long as the characteristics and results are clearly identified on the drawing. Any efficient, time saving method is acceptable but you must maintain clear traceability and the data on the attachments must be verified.

When automated inspection tooling produces measurement results, those results may be referenced on form 3, identified as pass/fail, and attached when:

- The characteristic numbers on form 3 are clearly linked in the attached report
- The results in the attached reports are clearly traceable to the characteristic numbers on form 3.
- The results are directly comparable to the Design Characteristic. E.g., coordinate data alone would not be acceptable for a positional tolerance; the results should show the actual positional value.

FAQ – Forms Usage

Q9: How should multiple pages of forms be numbered?

Q9 Answer: Each form is to be numbered independent of the others. The reason for three forms is that in some companies, different people or organizations fill out the different forms. It is acceptable to combine them.

Q10: Can an electronic signature be used in field 19 of form 1?

Q10 Answer: An electronic signature is acceptable as long as it is acceptable within your Quality management system. The Quality management system must define electronic signature usage and control.

Q11: Form 1 field 14 - What does baseline mean?

Q11 Answer: This refers to the previous FAI part number, or approved configuration, including revision level, to which a partial FAI is performed. An example of an approved configuration could be a part produced prior to the requirement of this standard.

FAQ – Forms Usage

Q12: Can a part produced prior to AS9102 be a Baseline Part Number without clear evidence of each design characteristic?

Q12 Answer: Even if there is no FAIR or detail verification data for each design characteristics (e.g., numerical data), it can be considered a Baseline Part number, as long as the product had already been verified, produced and addressed as conforming product.

Q13: Form 2 field 7 - What should be entered in this field?

Q13 Answer: East/West has special codes for different processes, and we require an entry in this field.

FAQ – Forms Usage

Q14: If using electronic forms and have multiple pages, what fields are required on subsequent pages for each form?

Q14 Answer: If you are using electronic forms, you can just add rows and additional sheets won't be required. If you are converting the forms to paper and need additional pages, follow the note at the top of the forms instructions: "NOTE: Fields 1-4 are repeated on all forms for convenience and traceability." Repeat fields 1-4 on each additional sheet.

Q15: What is the purpose of field 14 on form 3?

Q15 Answer: Form 3 field 14 is an optional field for the user to add information that is in addition to the requirements of AS9102. Since it is optional and at your discretion, you may add columns and titles for those columns as you see fit. You may not rearrange or change any other portion of the form.

Q16: What are "characteristic designators" for form 3 field 7?

Q16 Answer: "Characteristic designators" are identified on engineering documents. Applicable design engineering also establishes definitions of those designators (including major/minor characteristics, key characteristics, structural characteristics, etc.).

FAQ – When to Perform an FAI

Q1: When a lapse in production of 2 or more years occurs, is a Full or Partial FAI required?

Q1 Answer: An FAI is required for any characteristics that may be impacted by the inactivity. When a full FAI is not preformed, your FAI procedure should describe the rationale for assessing the characteristics that were not affected by the inactivity and how the assessment is documented.

Q2: After an initial FAI is complete, is a supplier required to complete partial FAI's when inspection frequency and methods are changed?

Q2 Answer: FAI (Complete/Partial) would be required for the changed inspection when the tool listed on Form 3 field 10 is changed.

FAQ – When to Perform an FAI

Q3: If Manufacturing is moved from one location/facility to another, is a new FAI required?

Q3 Answer: AS9102 - 4.6.f.1 states: A change in manufacturing source(s), process(es), inspection method(s), location of manufacture, tooling or materials, that can potentially affect fit, form or function. The key wording is "potentially affect fit, form or function". If you have good rationale supporting a position that the change doesn't "potentially affect fit, form or function" (and you gain approval from East/West) an updated FAI is not required. The move distance isn't a factor. Record the reason for Partial FAI on field No.14 of Form 1.

Q4: In AS9102 - 4.6.f, there are conditions that require a new or partial FAI when a change occurs "that can potentially affect fit, form or function". How is this assessed?

Q4 Answer: The only people able to evaluate these changes for "fit, form or function" are those knowing the product, the processes, the environment and knowing which problems occurred in the past (lessons learned). These people belong to the producer ("the organization" in AS9100). You may also be required by East/West for a partial FAI.

FAQ – When to Perform an FAI

Q5: Is a partial FAI required for all natural or manmade events that affect the manufacturing process?

Q5 Answer: The key wording is “that affect the manufacturing process”. If a company has provisions, such as calibration or recovery procedures, to validate that the equipment is not affected, then an update is not required.

Q6: Can an Assembly FAI be completed when one or more of the detail parts has not completed the FAI process?

Q6 Answer: Unless the failed detail FAI affects the fit, form or function of the assembly, the Assembly FAI can be completed if it complies with AS9102. The failed detail stands on its own, and it alone requires a FAI in accordance with AS9102 paragraph 4.4.

Q7: When engineering provides alternates, must the FAI be repeated when the alternate is used?

Q7 Answer: A partial or full FAI would generally be required when an alternate is used. The determination of an FAI requirement would depend on your assessment of the potential for affecting fit, form, or function. In cases that determination is made that a FAI is not required, the rationale should be documented and presented to East/West.

FAQ – When to Perform an FAI

Q8: When the supplier for a process specified by the drawing is changed, must the FAI be redone?

Q8 Answer: Yes, you or your new supplier must perform a partial FAI covering the processes/characteristics moved. Moving to a new supplier provides the "Potential" to affect fit, form or function. Also see answer to question Q3.

Q9: If a baseline FAI exists but is to a system used prior to AS9102, must the baseline FAI be updated to AS9102 prior to performing a new partial FAI?

Q9 Answer: AS9102 is not retroactive. An AS9102 partial may be completed using the original completed baseline.

Q10: Is an FAI required for unique single run production orders.

Q10 Answer: AS9102 section 1.3 states, unless contractually required, the standard does not apply to “Unique single run production orders, not intended for ongoing production”. Single Run production orders are a one-time run of a product that is not intended for ongoing production but may be installed on a production unit.

FAQ – Standard Catalogue and Commercial -Off-The-Shelf (COTS) Items

Q1: Where is Standard Catalogue and Commercial-Off-The-Shelf (COTS) Items entered on the First Article Inspection Report (FAIR)?

Q1 Answer: Standard Catalogue and Commercial-Off-The-Shelf (COTS) Items, when used as purchased, are entered on form 1. If Standard Catalogue or Commercial-Off-The-Shelf (COTS) Items (e.g., AN, MS fasteners) are modified, then list that Standard Catalogue or Commercial-Off-The-Shelf (COTS) Items on form 2, field 6.

Q2: Are COTS and Standard Catalogue Item C of C required with a FAIR, for items recorded on Form 1?

Q2 Answer: The standard requires that non-modified Standard Catalogue Items and Commercial-Off-The-Self items are listed on form 1 of the FAI. Field 18 is for the FAIR number and does not require the CofC number to be recorded in this field. Since no CofC number is required to be documented on form 1 of the FAI, the CofC would not be required for supporting documentation.

Q3: How are Standard Catalogue Items defined?

Q3 Answer: Any item purchased from a catalogue available to the public is considered a Standard Catalogue Items. AS9102 defines Standard Catalogue Items as: A part or material that conforms to an established industry or national authority published specification, having all characteristics identified by text description or industry/national/military standard drawing.

FAQ – Standard Catalogue and Commercial -Off-The-Shelf (COTS) Items

Q4: What is the definition of a Modified Commercial-Off-the-Shelf Item? Can it be a COTS item that is changed in manufacturing or is it a COTS item that is purchased and changed?

Q4 Answer: A modified COTS item would be a COTS item that has a change made to it from its originally purchased configuration. An item that has the configuration changed during the manufacturing process would be a “similar part”.

Q5: Are company designed standards, like Boeing's BAC standards, considered Standard Catalogue Items?

Q5 Answer: No. Company designed standards are not available to the public and do not meet the definition. Parts manufactured to company designed standards are entered on form 1. (See answer to Question Q1).

FAQ – Similar Parts

Q1: AS9102 Paragraph 4.6 states in part - FAI requirements may be satisfied by previously approved FAI performed on identical characteristics of similar parts produced by identical means. How similar do the parts have to be?

Q1 Answer: If a series of parts are made using the same processes and the parts are identical except for a few characteristics, a complete FAI can be done on one part and for the others, account for the unique characteristics. On form 3 for the "other parts", record the unique characteristics and refer to the full FAI for the identical characteristics. The key is traceability and that all characteristics are accounted for.

FAQ – Purchase Order Requirements

Q1: Does AS9102 allow inspection to Purchase Order requirements?

Q1 Answer: Yes. The AS9102 definition of drawing requirements indicates that the requirement may be invoked by purchasing document. AS9102 definitions: "DRAWING REQUIREMENTS: ”Requirements of the drawing and associated parts lists, specification, or purchasing document to which the product is to be produced from, including any notes, specifications, and lower-level drawings invoked.." Use Form 1, field 8 to list the Additional Changes. The Additional Changes in the Purchase Order including added and deleted characteristics are to be reported in Form 3. (e.g., omit fasteners, excess material)

FAQ – General Questions

Q1: What does "First Production Run" mean?

Q1 Answer: The first production run is the first group of one or more parts that are the result of a planned process designed to be used for future production of these same parts. The first production delivery parts require an FAI. Development and prototype parts that are not intended for production use are not considered as part of the first production run.

Q2: How is a partial FAI documented?

Q2 Answer: When performing a partial FAI, use form 1 and only the additional forms required to document the change. Also, reference the original FAI on form 1, field 14. The original forms must never be altered. You may use attachments to any form if more space is needed.

FAQ – General Questions

Q3: Can an FAI be completed when a non-conformance exists?

Q3 Answer: The non-conformance must be corrected, and the correction verified and documented on new forms at the next production run before considering the FAI "completed".

- The FAI with characteristic nonconformance(s) is Not Complete. An FAI with noted nonconforming characteristics should have field 19 signed and noted as “Not Complete”
- When processing a FAIR with documented non-conformances:
- Record the nonconforming characteristic(s) on form 3.
- Record the nonconformance document reference number on form 3 field 11.

Check the box “FAI Not Complete” on form 1 field 19.

The supplier implements corrective actions and performs a partial FAI for all affected characteristics on the next production run after implementation of the corrective action. If the partial FAI does not clear all nonconformances, the FAI is still Not Complete and the requirement to complete the FAI is still in effect. Note: a full FAI may be done in lieu of a partial FAI.

Q4: Is it a requirement to have a ballooned drawing in the FAI report?

Q4 Answer: Yes, the ballooned drawing is often used to show verification that “every design characteristic requirement is accounted for, uniquely identified, and has inspection results traceable to each unique identifier.”

FAQ – General Questions

Q5: In the definition of First Article Inspection, what is the meaning of independent as used in AS9102?

Q5 Answer: The person that verifies the characteristic for the First Article cannot be the same person that generated the characteristic. Self-inspection is not permitted (i.e.. operator self-verification). Also, the equipment used to verify the characteristic needs to be different from the equipment used to produce the characteristic.

Q6: What is expected for evidence of characteristics that are not able to be verified in the final product?

Q6 Answer: Characteristics not measurable in the final product shall be verified during the manufacturing process, if they are not affected by subsequent operations, or by destructive means. Characteristics verified at the detail level may be referenced in the assembly-level FAIR. Your FAI planning process should address objective evidence to be included in the FAIR for each design characteristic.

Q7: Does "Reference Characteristic" (as defined in 9102) include both, "Basic" dimensions and "Reference“ dimensions (as defined in ASME Y14.5-2009)?

Q7 Answer: The AS9102 definition of Reference Characteristic is; "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." Both basic and reference dimensions fall under the definition of reference characteristics.