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1.0 Purpose

This handbook provides guidance on how to identify, plan for, and satisfy requirements for conducting a first article inspection (FAI).

2.0 Scope

This handbook applies to FAIs conducted during manufacturing activities within scope of the QMS. *Smith & Co.'s suppliers are expected to follow the guidance herein.*

3.0 Users

Quality, Purchasing, Subcontracts, and Engineering must comply to extent specified herein.

4.0 Acronyms and Abbreviations

Term	Definition
ASL	Approved Supplier List
BOM	Bill of Material
CAGE	Commercial and Government Entity
CMM	Coordinate Measurement Machine
CNC	Computer Numerical Control
C of C	Certificate of Conformance
COTS	Commercial Off the Shelf
DCMA	Defense Contract Management Agency
FAI	First Article Inspection
FAIR	First Article Inspection Report
GD&T	Geometric Dimension and Tolerancing
NCR	Nonconformance Report
PO	Purchase Order
QCC	Quality Clause Code
TP	Test Procedure
VICD	Vendor Item Control Drawing

5.0 FAIR Purpose

A FAIR is evidence that Smith & Co., and its suppliers can produce a part/assembly that meets engineering, design, and customer requirements. It also provides evidence that a process can produce a conforming product and when applicable, its suppliers understand and incorporate requirements as planned.

5.1 FAIR Requirement

A FAIR is required when contractually specified.

Conditions where a FAIR must be repeated are as follows:

- design change to a part, subassembly, or assembly impacting fit, form, and function,
- change in source, process, inspection method, location, tooling, or materials impacting fit, form, and function,
- change in CNC program or other media source that may impact fit, form, or function
- event impacting the manufacturing process,
- nonconformance noted within the initial FAIR, or
- lapse in production for more than 1 year, unless otherwise contractually specified.
  NOTE: A full FAI is required when there is a lapse of time from the last production run to production restart.

Unless otherwise noted, a partial FAIR is acceptable as noted above. Only characteristic changes must be verified. Refer to the **Special Situations** for further guidance.

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5.2 FAIR Form Structure

5.2.1 Overall Structure

A FAIR is comprised of three forms, with each having a different purpose as follows:

- Form 1 – Part number accountability
- Form 2 – Product accountability to include materials, special processes, and any functional testing.
- Form 3 – Characteristic accountability, verification, and compatibility evaluation

Supplemental documentation must be provided when referenced within a FAIR, like a balloon drawing, C of C, material certification, test reports, special process certificates, test analyses, and job travelers. FAIR forms and its supporting documents shall be combined and submitted as a single PDF to be accepted unless the customer directs otherwise.

When handwritten, FAIR legibility is paramount to include being free of typos. All errors should be lined through, initial and dated, and the correct information at or near the lined through error. No "white out," scribbling over, or the like is allowed.

5.2.2 Form 1 - Part Number Accountability

Form 1 identifies the part/assembly/subassembly inspected and provides product-related information. Refer to **Appendix A – FAIR Form 1 Example**.

Form 1 includes the following fields: (Items 1 through 4 are identical in each FAIR form.)

1. Part No. – Part/Assembly number on the engineering drawing
2. Part Name – Part/Assembly name noted on the face of the engineering drawing.
3. Serial No. – If parts are serialized, enter the serial number(s). If none, enter "N/A."
4. FAIR No. – Naming convention is the part/assembly number followed by the month (MM) and year (YYYY). For example, "845729-06-2026."
5. Part Revision Level – Revision level of the part/assembly FAI is conducted on and should be located on the face of the drawing like "A," "D," "W," etc.
6. Drawing No. – Located on the face of the engineering drawing.

6A. Model No. – Model number of the FAI part/assembly.

7. Drawing Revision – Face of drawing revision of the part/assembly.

7A. Model Revision – Model revision of the FAI part/assembly.

8. Additional changes – Any incorporated change into the part/assembly not reflected in the part/drawing revision such as tooling change, process change, etc. If none, enter "N/A."
9. Manufacturing Process reference - Provide any reference number allowing for traceability to a manufacturing document of the FAI part/assembly such as job number, tooling number, and weld CofC.
10. Organization name – Name of the company performing the FAI.
11. Supplier code – CAGE code of the company performing the FAI.
12. Customer PO No. – PO number part/assembly will be delivered against.
13. Detail/Assembly Part – Indicates if the FAI is against a detail part or assembly.
    NOTE: Mark appropriate box. An assembly will include a BOM whereas a part will not.
14. Full/Partial FAI – Indicates if the FAIR is a full or partial FAI. If partial, baseline part number field provides the previous part number and its revision the partial FAI supplements. Note the reason for conducting a partial FAI in the reason field.
15. If part number is an assembly, information for all indexed part numbers and subassemblies must be documented in the following fields:
    15a. Part No. – Part number on the assembly BOM like a detail part, subassembly, software, or COTS.
    15b. Part Name – Part name as shown on the assembly BOM.
    15c. Part Type – Enter "Detailed part," "Subassembly," "Software," "COTS," or "COTS equivalent."
    15d. FAI Report No. – FAIR number the part's FAI was accomplished on.
16. FAIR contains a documented nonconformance? – Mark "Yes" or "No."
17. Prepared by – Name (and stamp) of who completed Form 1. If multiple people, include all names (and stamps).
18. Date – Date when Field 16 was selected.
19. Reviewed By – Name and stamp of person who reviewed and approved the entire FAIR.
20. Date – Date when Field 19 was populated.
21. Customer Approval – Signature (and stamp) of customer representative if requested by the customer. If not

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requested by the customer, enter "N/A."
22. Date – Date when Field 21 was populated.

5.2.3 Form 2 - Product Accountability - Materials, Special Processes, and Functional Testing

Form 2 identifies materials, special processes, and functional testing defined as a design characteristic. Refer to **Appendix B – FAIR Form 2 Example**.

Form 2 includes the following fields: (Items 1 through 4 are identical in each FAIR form.)

1. Part No. – Part/Assembly number on the engineering drawing
2. Part Name – Part/Assembly name noted on the face of the engineering drawing.
3. Serial No. – If parts are serialized, enter the serial number(s). If none, enter "N/A."
4. FAIR No. – Naming convention is the part/assembly number followed by the month (MM) and year (YYYY). For example, "845729-06-2026."
5. Material or Process Name – Name of required material, special process, or functional test noted on the engineering drawing.
6. Specification No. – Enter the specification number and its revision related to the material, special process, or functional test such as:
    a. Material specification to include any allowable alternative.
    b. Special process specifications and where applicable including class (for example, MIL-DTL-5541 Ty II Cl 3).
    c. Functional test number (for example, PTP 0101), and
    d. If a modified COTS item, enter the original part details.
7. Code – Enter any supplied material or process code. Otherwise, enter "N/A."
8. Supplier – For externally provided material or special process, enter the supplier's CAGE/supplier code, name, and full address.
9. Customer Approval Verification – Indicate if the material or special process provider is approved by the customer. Enter "Yes" if approved, "No" if approval is pending, and "N/A" if approval is not required.
10. Certificate No. – Enter the traceable reference number or certificate name associated with the material or special process, such as heat, log test report, etc.
11. Functional Test Procedure No. – When identified as a design characteristic, enter all TP numbers and names.
12. Acceptance Report No. – Enter the CofC numbers and names indicating the part/assembly has met its functional testing requirements.
13. Comments – Enter any additional pertinent comments related to materials, processes, and functional tests.
14. Signature – Name (and stamp) of who completed Form 2. If multiple people, include all names (and stamps).
15. Date – Date when Field 14 was populated.

5.2.4 Form 3 - Characteristic Accountability, Verification, and Compatibility Evaluation

Form 3 records the results of each part or part of an assembly related to the design characteristics. Any identified nonconformance must be listed within Field 11. Refer to **Appendix C – FAIR Form 3 Example**.

Form 3 includes the following fields: (Items 1 through 4 are identical in each FAIR form.)

1. Part No. – Part/Assembly number on the engineering drawing
2. Part Name – Part/Assembly name noted on the face of the engineering drawing.
3. Serial No. – If parts are serialized, enter the serial number(s). If none, enter "N/A."
4. FAIR No. – Naming convention is the part/assembly number followed by the month (MM) and year (YYYY). For example, "845729-06-2026."
5. Characteristic No. – Unique number assigned to each design characteristic to be inspected and/or tested. Each characteristic has a balloon number related to the ballooned drawing and BOM.
6. Reference location – Location of each design characteristic on the balloon drawing with reference to the drawing zone, such as A1, B3, etc.
7. Characteristic designator – Entry depends on design characteristic type.
    a. For notes and flag notes, enter "Flag Note X" and "Note X," where "X" indicates the number.
    b. For GD&T, enter the characteristic classification per the design drawing, such as "Major," "Minor," "Critical." "Key," etc.
8. Requirement – Special characteristic on the engineering drawing such as a dimension, note, geometric tolerance, etc.

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a. Lower tolerance – Characteristics acceptable lower limit
b. Upper tolerance – Characteristics acceptable upper limit

9. Result – Measurement or observation taken for the specified design characteristic. Measurements must be recorded in the units specified on the face of the drawing.
    a. Where qualified tooling—go/no go gage, surface finish gage, etc.—is utilized, enter "Pass" or "Fail"
    b. For visual inspection, enter "Accept" or "Reject."
    c. For reference dimensions, enter "Reference Only."
    d. For basic dimensions, enter "Basic Dimension."
10. Design/Qualified Tooling – Enter the tool's unique identifier used to perform the measurement or test. If the design characteristic is a visual inspection, enter "Visual."
11. NCR No. – For any design characteristic not conforming to requirements, enter the NCR number. Otherwise, enter "N/A."
    a. Each nonconforming characteristic requires its own NCR or NCR line entry. When multiple nonconforming characteristics cause a single issue, only one NCR is created. Refer to **Control of Nonconforming Product (QOP 8.7)**.
12. Additional Comments – Enter any additional comments related to the materials, processes, and functional tests to include referenced reports or other documents.
13. Signature – Name (and stamp) of who completed Form 3. If multiple people, include all names (and stamps).
14. Date – Date when Field 13 was populated.

5.3 Special Situations

5.3.1 Partial (Delta) FAI

A part or assembly previously that completes a full FAI with a condition noted in **FAIR Requirement** requires a partial (delta) FAI. The partial (delta) FAI will only verify the design characteristics that changed from the previous FAI. For clarify, a balloon drawing will be provided along with highlighting the FAIR sections requiring completion and updates.

For a partial (delta) FAI, complete the following in Form 1, field 14:

- Mark Partial FAI,
- Enter baseline part number and revision, and
- Enter reason for performing the partial (delta) FAI.

5.3.2 Non-Applicable Fields

Where a FAIR field is not applicable, enter "N/A" in the field to indicate it was considered and no entry is required.

5.3.3 Nonconformance Occurrence

When an NCR is generated, take steps as follows:

1. Enter the NCR number in each form's respective field(s).
    a. For Form 2 (materials, special processes, and functional test), enter the detailed information in field 13 (Comments) to include the NCR number.
    b. For Form 3 (measured and inspected characteristics), enter the nonconforming result in field 9 (Results), NCR number in field 11 (NCR No.), and details in field 12 (Additional comments).
    c. In Form 1, within section 15 select "FAI Not Complete."

When ready, sign (stamp) and date Form 1 and complete the remainder of the FAIR ensuring no nonconformances are detected and if so, record each.

When nonconformances are detected, refer to **Control of Nonconforming Product (QOP 8.7)**. Upon correction of the nonconformity, a partial FAI is required using the applicable FAIR forms to supplement the incomplete full FAIR. Once complete and traceability to each FAIR is accomplished, the FAIR is considered complete.

5.3.4 Unattainable Design Characteristic Measurement

Periodically, a part or assembly may have one or more characteristics that cannot be measured or verified. In such cases, the characteristic requires verification during the manufacturing process where it is accessible. Gaining these

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measurements must be accomplished when subsequent or parallel processing has no impact on the characteristic.

5.3.5 Automated Inspection and Measurement Equipment

When automated equipment, such as a CMM, is used to produce an inspection and test report, the report may be attached to the FAIR if it has:

1. characteristic numbers clearly linked in the FAIR,
2. results have clear traceability to the characteristic number,
3. results are directly comparable to the characteristics, and
4. a report attached to FAIR Form 3.

5.3.6 Alternate Material, Special Processes, or External Provider

When a design characteristic specifies an acceptable alternate material or special process, a new FAIR is required. If the use of an alternate has no potential impact to form, fit, or function, a new FAIR is not required, but rationale must be documented and communicated to the customer for approval. When a need to change a special process supplier exists, there may be an impact to form, fit, or function. When this occurs, a new partial FAIR is required.

5.4 FAI Communication

The below sections detail how to communicate FAI requirements to a supplier and how to plan and execute an internal FAI.

5.4.1 Purchase Orders

When an assembly is purchased, suppliers must submit a FAIR for each part and level of assembly. When source inspection is required, all PO line items must flow down the source inspection QCC. All PO line items requiring an FAI must flow down the FAI required QCC. If the supplier is required to submit a FAIR prior to shipment and source inspection cannot be accomplished, all line items must flow down the advanced FAI submission QCC.

The packing slip must clearly indicate “First Article Inspection Report enclosed.” For additional information, refer to **Supplier Quality Handbook (HBK 8.4)**.

5.4.2 FAI Planning

When an FAI is required and prior to the first production run, the job must clearly indicate “FAI Required” at the applicable operation(s). A review of the job operation sequence and its verbiage must be reviewed and updated, where needed, to prevent an FAI characteristic from being captured. Ensure source inspection requirements are noted and proper notice is given to each.

Consider the following items while planning an FAI:

- All engineering drawings and BOMs are “Released.”
- Job and PO part and assemblies match the engineering revision.
- Identification of flow down requirements on the respective PO line item and job operation.
- Pre-population of the FAIR(s) and compare to the released specifications.
- Ballooning of the drawing to include all subassemblies and assemblies as required.
- Ensure that 100% of design characteristics, notes, embedded specifications, and subassemblies are attainable.
- Verify suppliers are on the ASL required to be used by the customer and the job operations support the capture of the FAI characteristics.
- Suitable monitoring and measuring equipment are available, is of appropriate resolution and accuracy, and will be within the calibration date prior to use.
- Customer-specific requirements such as source inspections.

5.4.3 FAI Frequently Asked Questions

Frequently asked questions (FAQs) regarding an FAI are as follows:

- What forms are expected for a partial (delta) FAI?
    - Forms 1 through 3 are required for all FAIs, but complete only the affected fields for the characteristics being revalidated.

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- Do drawing notes that contain dimensions need a recorded measurement?
  - Yes. All dimensions must have a recorded measurement, tolerance, and inspection method.
- Should requirements from COTS items not on the drawing be included?
  - Yes. When details for parts/hardware installation are contained within the COTS item specification and produced on the assembly, the dimensions must be recorded.
- Will an unapproved special process supplier result in a rejected FAI by the customer?
  - Yes. When a customer-specific special process supplier is required, it must be used to prevent a nonconformance.
- Can certain monitoring and measuring equipment lead to an FAI rejection?
  - Yes, when there is a lack of confidence a valid, repeatable, and reproducible measurement is obtainable.
- When a feature has multiple place measurements, are all measurements required to be recorded?
  - Yes. All measurements for any given feature must be recorded.
- Should all certifications, test reports, etc. be included in the FAI package?
  - Yes. All objective evidence must be included in the FAI package.
- What are the most common errors that lead to rejection of an FAI package?
  - Typos such as inverted numbers and tolerances.
  - Missing part numbers, revisions, and subassembly part numbers.
  - Incorrect revisions.
  - Missing specification revision.
  - Missing special process supplier code or other relevant information and documentation.
  - Missing signatures and dates.
  - Missing or incorrect objective evidence.
  - Missing or incomplete balloon drawing(s).
  - Missing or unaccounted for drawing notes.
  - Failure to gain customer approval prior to submittal without written authorization to do so.
  - Not using the most current revision of AS9102 Forms 1, 2, and 3.

5.5 Supplier FAI Receipt

Upon receipt of an FAI from a supplier, Receiving notifies quality. Quality then takes control of the FAI package and initiates a review of the documentation. Once the FAIR and parts are accepted, Quality retains the FAI package per **Control of Documented Information (QOP 7.5)** and **Receiving Inspection (QOP 8.4.2)**.

6.0 References

- HBK 8.4, Supplier Quality Handbook
- QOP 7.5, Control of Documented Information
- QOP 8.4.2, Receiving Inspection
- QOP 8.7, Control of Nonconforming Product

7.0 Records

- First Article Inspection Report
- Nonconformance Report
- Job package (drawing, BOM, pick list, FAIR, etc.)
- PO package (PO, packing slip, certifications, etc.)

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8.0 Appendix A – FAIR Form 1 Example

Form 1: Part Number Accountability

1. Part Number	2. Part Name	3. Serial/Lot Number	4. FAI Report Number
BRK-100245-001	Mounting Bracket	240501	2026-01
5. Part Revision Level	**6. Drawing Number**	**7. Drawing revision level**	**8. Additional Changes**
C	100245-001	A	ECN 7824
9. Manufacturing Process Reference (WO#)	**10. Organization Name**	11. Supplier Code	12. P.O. Number
Job No. 7294	A Cut Above	J7LB4	9610-1
13. Detail FAI	**14. Full FAI** X	***Baseline Part Number including revision level***	
Detail	**Partial FAI**		
Assembly FAI	***Reason for Partial FAI:***		

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. FAI Report Number
ASM-200500	Avionics Support Assembly	ASA1001	2026-10

1) Signature indicates that all characteristics are accounted for; meet drawing requirements or are properly documented for disposition.

2) Also indicate if the FAI is complete per Section 5.4: **FAI complete** ☒ X **FAI not Complete** ☐

19. Report Completed By: Will E. Doit	**20. Date** 6/11/2026
21. Report Reviewed by (Quality Representative): Alfore Justice	22. Date 6/11/2026
23. Customer Approval and Stamp (if applicable): Not required.	24. Date

FAI Status: ☒ FAI Acceptable ☐ FAI Pending ☐ FAI Rejected

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9.0 Appendix B – FAIR Form 2 Example

FORM 2 - PRODUCT ACCOUNTABILITY - MATERIALS, SPECIAL PROCESSES, AND FUNCTIONAL TESTING

Sheet ___ of ___

1. Part Number:	2. Part Name:		3. Serial Number:		4. FAIR Number:
BRK-100245-001	Mounting Bracket		240501		2026-01
5. Material or Process Name:	**6. Specification Number:**	7. Code:	**8. Supplier:**	**9. Customer Approval Verification:**	**10. Certificate of Conformance Number:**
Rivet Solid CS 1000	MS20426L	N/A	ABC Rivets, 10 Elm St Boston, MA LM 004321	N/A	PO 98765
Sealant	MIL-PRF-2333777D	N/A	Sam's Sealants, 99 43rd St., San Jose, CA LM 008759	N/A	PO 98765

11. Functional Test Procedure Number:	12. Acceptance Report Number:

13. Comments

14. Signature	15. Date
Will E. Doit	06-10-26

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10.0 Appendix C – FAIR Form 3 Example

Form 3: Characteristic Accountability, Verification and Compatibility Evaluation

1. Part Number		2. Part Name						3. Serial/Lot Number	4. FAI Report
BRK-100245-001		Mounting Bracket							
Characteristic Accountability						Inspection / Test Results			Other Fields
5. Char No.	6. Reference Location	7. Characteristic Designator	8. Requirement	8a. UoM	8b. Upper Limit	8c. Lower Limit	9. Results	10. Designed Tooling	11. Non-Conformance Number	14. Notes
1	Note 1		All dimensions apply after plating.	Ea	N/A	N/A	Pass	N/A	N/A	Visual
2	Note 2		Label part with part number, revision, and serial number where shown.	Ea	N/A	N/A	Pass	N/A	N/A	Visual
β	Note 3		Remove all burrs and break edges.	N/A	N/A	N/A	Pass	N/A	N/a	Visual
4	Sh. 1, Zn A2		4x Dia. .250	In.	+.01	-.02	.251 -.253	N/A	N/A	CMM
5	Sh. 1, Zn A3		6.00, 2 plcs.	In.	+.005	-.003	5.995 - 5.997	N/A	N/A	CMM
6	Sh. 1, Zn B2		2.50, 2 plcs.	In.	+.004	-.003	2.497 - 2.501	N/A	N/A	CMM
The signature indicates that all characteristics are accounted for; meet drawing requirements or are properly documented for disposition.										
12. Prepared By	Will E. Doit							13. Date	6/10/26	

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