

	Supplier First Article Inspection (FAI) Requirements		
Author:	Collins Supplier Quality	Issue Date:	November 2, 2024
		Effective Date:	February 2, 2025

1.0 PURPOSE/SCOPE

- 1.1 When this document is referenced in Collins Aerospace requirements, purchase orders, or other supplier agreements, suppliers and their sub-tier suppliers are responsible for compliance to all applicable requirements herein.
- 1.2 Suppliers of the following types (as defined by COL-ASQR-PRO-0003) are responsible for compliance to all applicable requirements herein.
 - 1.2.1 Type 1: BTP, Collins Aerospace Design Part Manufacturer
 - 1.2.2 Type 2: Design Responsible Supplier
 - 1.2.3 Type 3: Distributor
 - 1.2.4 Type 4: Special Process Supplier
- 1.3 FAI shall be performed in accordance with the latest revision of AS/EN/SJAC9102 and the requirements herein. When AS/EN/SJAC9102 revisions are deployed, Collins may provide guidance related to implementation timing.
 - 1.3.1 All FAI performed on Collins product shall meet the requirements of AS/EN/SJAC9102, including all levels of product (e.g., detail, sub-assembly, assembly), any design-control authority (e.g., Collins, supplier), and all types of media (e.g., 2D, 3D DPD dataset, mylars, tabulated drawings, coordinate drawings).
- 1.4 FAI shall be performed if the FAI status of a product cannot be fully established.
- 1.5 Collins Aerospace may require a supplier to perform FAI or submit a FAIR at any time.
 - 1.5.1 This requirement may be communicated through PO or via a FAIR requirement request in Net-Inspect.
- 1.6 Additional requirements may be added by Collins SBUs/sites to supplement these requirements.

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This document flows the requirements of:

AS/EN/SJAC9102, First Article Inspection Requirement

2.0 RESPONSIBILITIES

- 2.1 Suppliers shall comply with the latest revisions of this procedure and Collins Aerospace SBU/site requirements. Suppliers shall establish compliance within 90 days of the document effective date unless otherwise specified in a Collins Aerospace publication notification.
- 2.2 Order of precedence, in circumstances of conflicting requirements, shall be managed in accordance with COL-ASQR-PRO-0003.
- 2.3 For questions / interpretation of AS/EN/SJAC9102, supplier should first consult the Supply Chain Management Handbook published by IAQG and available online as public information at https://iaqg.org/tools/scmh/. If further assistance is needed, contact the Collins buyer.
- 2.4 Refer to other quality flow-down documentation (e.g., HSM17, RC-9000) if a cancelled or superseded specification is called out on a Collins Aerospace drawing. FAIR shall identify both the as-built configuration and the designed configuration, if different due to cancelled or superseded specification(s).

3.0 REFERENCES

DOCUMENT NUMBER	DOCUMENT TITLE
AS/EN/SJAC9102	First Article Inspection Requirement
HSM17	Supplier Product-Release Program
RC-9000	Supplier Quality Management System Requirements
COL-ASQR-FRM-0002	Supplier Process Change Notification
COL-ASQR-FRM-0003	Supplier Request for Information (SRI)
COL-ASQR-PRO-0003	Aerospace Supplier Quality Requirements



4.0 DEFINITIONS/ACRONYMS

TERM / ACRONYM	DEFINITION	
2D	Two dimensional	
3D	Three dimensional	
As-built configuration	The configuration of the FAI part utilized during FAI manufacturing, assembly, etc.	
ВТР	Build to Print	
ccs	Configuration Control Sheet	
CoC	Certificate of Conformance	
DISCUS Software that automates analyzing and extracting characteristics from a drawing or model.		
DPD Digital Product Definition (sometimes called MBD for model-based definition or PDD for prodefinition dataset)		
GD&T Geometric Dimensioning & Tolerancing		
IAQG International Aerospace Quality Group		
LTA Long Term Agreement		
M&PT / M&P Material and Process Technology or Materials and Process		
MPI Magnetic Particle Inspection		
Nonconformance	A part, material, or assembly that does not meet specified design characteristic(s)	
SBU Strategic Business Unit		
SRI Supplier Request for Information (e.g., COL-ASQR-FRM-0003)		
PCB	Printed Circuit Board (aka Printed Wiring Board): an unpopulated circuit board.	
PO	Purchase Order	
QN	Quality Notification	



When form is capitalized in this document, it refers to one of the three FAIR forms referenced in AS/EN/SJAC9102, namely:

- Form 1 Part Number Accountability
- Form 2 Product Accountability Materials, Special Processes, and Functional Testing
- Form 3 Characteristic Accountability, Verification, and Compatibility Evaluation

See AS/EN/SJAC9102 for additional definitions regarding the following:

- Assembly
- Attribute Data
- Ballooned Design Characteristic
- Ballooned Document
- Baseline Part Number
- Commercial-off-the-shelf (COTS) Item
- Deliverable Software
- Design Characteristic
- Designed Tooling
- Detail Part
- Digital Product Definition (DPD)
- First Article Inspection (FAI)

- First Article Inspection Report (FAIR)
- First Production Run
- Modified Commercial-off-the-shelf (COTS) / Standard Catalog Item
- Multiple Characteristics
- Product
- Qualified Tooling
- Reference Characteristic
- Special Process
- Standard Catalog Item
- Variable Data

5.0 PROCEDURE/REQUIREMENTS

- 5.1 FAIR Requirements
 - 5.1.1 FAI shall be performed to released Collins design requirements, even if supplier-controlled documentation is used to produce the product.
 - 5.1.1.1 Part number, name, and revision (Form 1, fields 1, 2, and 5) shall be the Collins part number, name, and revision, when available.
 - 5.1.1.2 Drawing number and revision shall be from the Collins drawing, when available.
 - 5.1.2 The requirements in this document do not replace or remove the requirement for suppliers / manufacturers to complete internal FAI to their own drawings when they exist.
 - 5.1.3 All FAIRs pertaining to Collins product, regardless of design responsibility, shall be made available to Collins upon request.
 - 5.1.4 The FAI shall be completed to the PO requirements (e.g., Collins drawing, Ops Sheet, Installation drawing, CCS).
- 5.2 FAI Planning
 - 5.2.1 Suppliers are expected to comply with the FAI planning requirements denoted in AS/EN/SJAC9102. As an output of FAI planning activity, suppliers shall initiate the FAI process.
- 5.3 Submission of FAIR to Collins for Review



- 5.3.1 The holder of the Collins Aerospace PO is responsible for the submittal of all relevant FAIR documentation to Collins, including detail-part characteristics and FAIRs generated by its supply chain.
- 5.3.2 When the Collins SBU/site has selected Net-Inspect as the means of FAI submission, FAI reports and associated data shall be created, reviewed, and stored using the Net-Inspect software application. Suppliers should use DISCUS or another ballooning software to enter information in Forms 1, 2, and 3 located in Net-Inspect.
 - 5.3.2.1 To register for Net-Inspect system, go to this link: https://www.net-inspect.com/. Use of Net-Inspect for FAI on Collins product is free for Collins suppliers.
 - 5.3.2.2 DISCUS is available free of charge to suppliers for characteristic identification. Consult your Collins SBU-specific contact with questions related to obtaining a license for DISCUS. Use the following link to start the installation process: https://www.discussoftware.com/customers/oem-programs/collins-aerospace-program/
- 5.3.3 Collins may elect to review or participate in the supplier's FAI process at any time and may require inprocess and/or final FAI validation hold points or FAI approval prior to shipment to Collins (including an onsite review at the supplier's facility).
 - 5.3.3.1 First Article Inspection review by Collins will typically be scheduled within five (5) days of notice received if onsite review is required.
 - 5.3.3.2 Use of a third-party source shall be considered an extension of Collins Aerospace regarding review and approval of FAIRs.
 - 5.3.3.3 Note: Collins Aerospace approval of the FAI does not absolve the supplier of the responsibility to ensure the FAI and parts are compliant to requirements.
 - 5.3.3.4 Note: Collins Aerospace is migrating supplier notification of FAI approval to Net-Inspect. Until that migration is complete, suppliers may be notified of Collins approval through other means (e.g., a signed Form 1 or via the Collins supplier portal). Suppliers may be notified of First Article Inspection failure using the Collins supplier corrective action process.
- 5.3.4 It is recognized that some documents are, on occasion, deemed proprietary information. When this is the case, the supplier shall include a letter in the FAIR supporting documentation stating the proprietary nature of the documents and that the documents shall be made available to Collins during a visit if required.
- 5.4 Nonconformance Handling
 - 5.4.1 When a FAIR contains a documented nonconformance as indicated by Form 1, field 19, parts shall not ship unless Collins has approved shipment of the non-conforming material per the site's authorization process. Per AS/EN/SJAC9102, the supplier shall repeat the FAI process until all nonconformances are resolved.
- 5.5 Source Control Drawings



- 5.5.1 When the Collins PO holder also holds design authority over the part / assembly being procured, the organization is to account for all features, requirements, and production test parameters (when defined) that appear on the Collins controlled drawing.
- 5.5.2 See Appendix B for additional clarification regarding identification of source control drawings relative to COTS and BTP items.

5.6 Record Retention

- 5.6.1 Supplier shall retain the current full FAIR and all subsequent partial FAIRs for a minimum of 10 years from the end of the contract or from the last shipment of product (whichever is later), in addition to other record retention requirements (e.g., COL-ASQR-PRO-0003).
- 5.6.2 Supplier shall ensure FAI records are protected from unintended alteration.

5.7 Distributor FAIRs

- 5.7.1 FAIR supporting documentation shall record traceability from the manufacturer to the Collins PO. When the FAI part is procured through a distributor, the distributor may create a Form 1 as a cover sheet and attach either the manufacturer FAIR or the existing Form 1 from a FAIR previously approved by Collins.
- 5.8 Commodity-based Requirements
 - 5.8.1 Electronics
 - 5.8.1.1 For PCBs, the following requirements apply:
 - The FAIR shall include all design features of the individual PCB at a minimum. Panel details are only required in the FAIR if the panel details are defined in engineering documentation.
 - All Hole / Drill chart data shall be validated on the FAIR, except the "Drill Name" column.
 - Inks shall be reported, and certifications shall be attached, when inks are required on the drawing.
 - For drawings containing GD&T, enter geometric tolerance for datums and positional tolerance for non-plated holes, when applicable.
 - 5.8.1.2 Design characteristics within wire charts, schematic diagrams, or equivalent shall be included in FAI, each with a unique identifier.
 - 5.8.2 Machining, Casting, and Forging
 - 5.8.2.1 When machining a casting or forging that has no other details, the FAI shall be considered a detail.
 - 5.8.2.2 When M&PT / M&P approval is required for the FAI part, evidence of approval shall be included with the FAIR.



- 5.8.2.3 Casting and forging FAI may require post-machining validation of the FAI part to discover material anomalies (e.g., porosity, seams) before FAI is fully approved by Collins.
- 5.8.2.4 When multi-cavity tools are used, the inspection results from each cavity shall be included in Form 3 of the FAIR.

5.8.3 Plastics and Composites

- 5.8.3.1 When MP&T / M&P approval is required for the FAI part, evidence of approval shall be included with the FAIR.
- 5.8.3.2 FAI for injection molded parts may require post-machining validation of the FAI part to discover material anomalies (e.g., porosity, seams) before FAI is fully approved by Collins.
- 5.8.3.3 When multi-cavity tools are used, the inspection results from each cavity shall be included in Form 3 of the FAIR.

5.8.4 Other

- 5.8.4.1 For dress covers in the cut-and-sew commodity, Collins Aerospace reserves the right to request two (2) fully conformed sets, along with the FAIR, to keep for future reference. At least one of the two sets shall include the FAI part.
- 5.8.4.2 For optics (e.g., lenses), coating curve charts and environmental & durability test reports shall be included with the FAIR and shall provide enough evidence to verify that the article meets the drawing requirements.
- 5.9 Form and Supporting Documentation Requirements
 - 5.9.1 All fields shall be filled out in accordance with AS/EN/SJAC9102, plus the additional requirements found in Table 5-1 through Table 5-4.
 - 5.9.2 Interpret the definitions of R, CR, and O in Table 5-1 through Table 5-4 per AS/EN/SJAC9102, namely:
 - [R] Required
 - [CR] Conditionally Required
 - **[0]** Optional
 - 5.9.3 Appendix A provides a summary of instructions for completing Forms 1, 2, and 3 found in AS/EN/SJAC9102 and this document. The summary is for reference only.



Table 5-1: Requirements for Form 1

FIELD#	FIELD NAME	ADDITIONAL REQUIREMENTS
Field 1 [R]	Part Number	
Field 2 [R]	Part Name	
Field 3 [CR]	Serial Number	
Field 4 [R]	FAIR Identifier	
Field 5 [R]	Part Revision Level	
Field 6 [R]	Drawing Number	 Drawing number shall reflect the Collins drawing and/or DPD, when available. Note: the drawing number may be different than the part number.
Field 7 [R]	Drawing Revision Level	Note: The drawing revision may be different than part revision.
Field 8 [CR]	Additional Changes	Note: SRI is insufficient approval for product deviations.
Field 9 [R]	Manufacturing Process Reference	
Field 10 [R]	Organization Name	
Field 11 [R]	Supplier Code	Note: for Collins PO holders, the supplier code is issued by Collins Aerospace and listed on the Collins PO.
Field 12 [R]	Purchase Order Number	Note: For Collins PO holders, enter the Collins procurement document number (e.g., purchase order, LTA, scheduling agreement).
Field 13 [R]	Detail/Assembly	
Field 14 [R]	Full FAI/Partial FAI	
Baseline [CR]		
Reason [R]		
Field 15 [CR]	Part Number	When Collins is the design authority, the part number shall be defined by Collins, either as listed on engineering documentation or the approved manufacturer's list (AML).
Field 16 [CR]	Part Name	
Field 17 [CR]	Part Type	
Field 18 [CR]	FAIR Identifier	For COTS items, enter a certification traceability number.
Field 19 [R]	Does FAIR Contain a Documented Nonconformance(s)?	
Field 20 [R]	FAIR Verified By	
Field 21 [R]	Date	
Field 22 [R]	FAIR Reviewed / Approved By	
Field 23 [R]	Date	
Field 24 [CR]	Customer Approval	
Field 25 [CR]	Date	
Field 26 [0]	Comments	



Table 5-2: Requirements for Form 2

FIELD#	FIELD NAME	ADDITIONAL REQUIREMENTS
Field 1 [R]	Part Number	
Field 2 [R]	Part Name	
Field 3 [CR]	Serial Number	
Field 4 [R]	FAIR Identifier	
Field 5 [CR]	Material or Process Name	 If processes are required to be performed multiple times (e.g., 2x MPI), each occurrence shall be listed in separate rows with all information included. If listed in the engineering documentation, include ink and clear coat.
Field 6 [CR]	Specification Number	If listed in the engineering documentation, include the applicable revision, type, class, grade, etc.
Field 7 [CR]	Code	
Field 8 [CR]	Supplier	
Field 9 [CR]	Customer Approval Verification	
Certificate of Field 10 [CR] Conformance Number		
Field 11 [CR]	Functional Test Procedure Number	Enter the revision date and/or revision of the test procedure, if defined.
Field 12 [CR]	Acceptance Report Number	
Field 13 [O]	Comments	

Table 5-3: Requirements for Form 3

FIELD#	FIELD NAME	ADDITIONAL REQUIREMENTS
Field 1 [R]	Part Number	
Field 2 [R]	Part Name	
Field 3 [CR]	Serial Number	
Field 4 [R]	FAIR Identifier	
Field 5 [R]	Char. No.	All balloons shall be individually listed and accounted for on Form 3.
Field 6 [CR]	Reference Location	
Field 7 [CR]	Characteristic Designator	
Field 8 [R]	Requirement	
Field 9 [R]	Results	
Field 10 [CR]	Designed / Qualified Tooling	
Field 11 [CR]	Nonconformance Number	
Field 12 [0]	Additional Data / Comments	

Table 5-4: Required Supporting Documentation

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DOCUMENT	REQ.
Completed Forms 1, 2 & 3 per AS/EN/SJAC9102.	
Ballooned Documents – drawing(s), parts list(s), model(s), control drawing(s), specifications, configuration control sheet(s) (CCS), etc.	
A photograph or replication of Part Marking that represents production marking (bag and tag photo is acceptable for details that are used in sub of top-level assemblies). If parts are serialized, the serial number contained in the part marking photo or replication shall match Form 1, field 3. NOTE: part marking includes any other required marking specified in the Engineering requirements (e.g., direction arrows; grab here; hold here; flow; this side up).	
NOTE: To ensure correct part marking, approval may be obtained from Collins prior to FAI submission.	0
Certifications for all material(s) (e.g., raw materials, paint, primer, adhesives, weld filler)	CR
CoC for all special processes (including Finish Application) with revision(s) used. See COL-ASQR-PRO-0003 and other SBU-specific flow-down for additional special process and certification requirements.	
CoC and/or traceability documentation for all COTS items.	CR
Copies of approved nonconforming material documentation (e.g., QNs, Deviations, Waivers) as applicable to the FAI part (see Form 1, field 8 and Form 3, field 11).	CR
Supporting Change Documentation associated with the FAI part. The document number shall match Form 1, field 8. Examples include: • Engineering Change Proposal Requests (ECPR) • Collins form COL-ASQR-FRM-0002 (Supplier Process Change Notification) • Mechanical Advanced Action Authorization (MAAA) • ADCN (Advance Drawing Change Notice) • DCN (Drawing Change Notice) • CCS (Configuration Control Sheet) • QN (Quality Notification)	
Test Report(s) – Copy of the Acceptance Test Report(s) referenced in Form 2, field 12.	CR

6.0 SUPERSEDED DOCUMENT(S)

DOCUMENT NUMBER	DOCUMENT TITLE
N/A	N/A

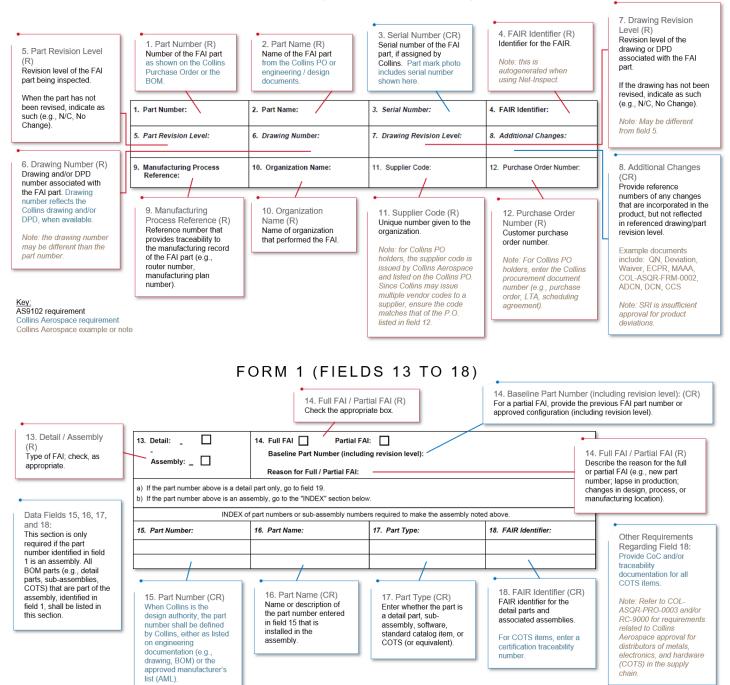
7.0 REVISION HISTORY

REVISION	DESCRIPTION	MODIFIED ON
00	Initial Issue.	November 4, 2024



Appendix A: Form Guidance (Reference Only)

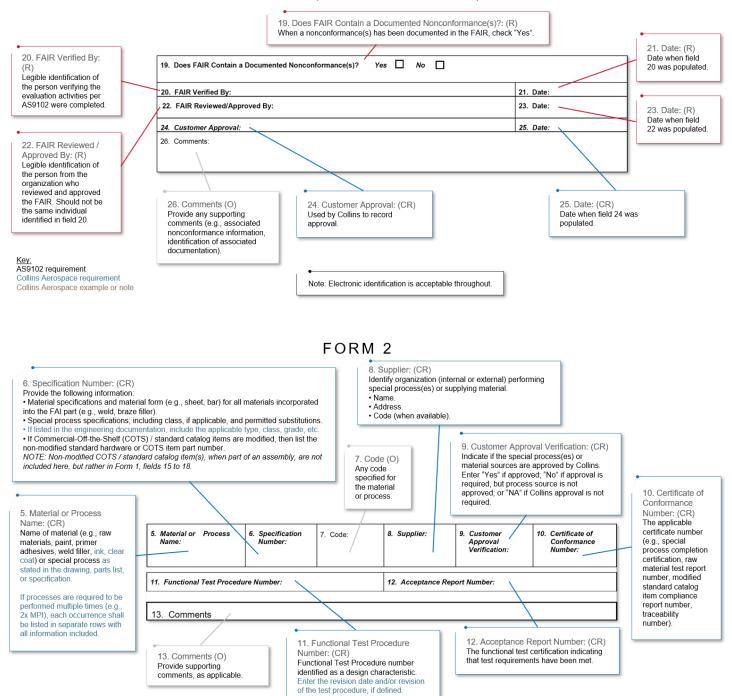
FORM 1 (FIELDS 1 TO 12)



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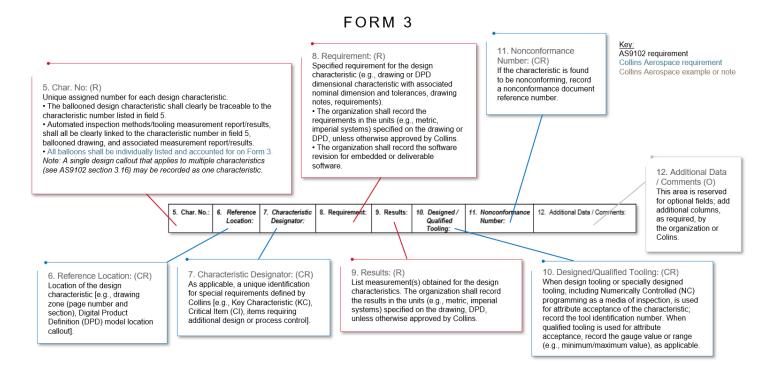
FORM 1 (FIELDS 19 TO 26)



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Appendix B: Part Type Definition Guidance

The following decision tree is a guide to assist suppliers in determining if FAI will be required for a part or assembly. Although this guidance is generally accurate, consult quality requirement flow-downs for part-specific FAI requirements.

