



QM-018 FAI DOCUMENTATION REQUIREMENTS

The following documents are to be part of the FAIR documentation package:

- 1 AS9102 Form 1
- 2 AS9102 Form 2
- 3 AS9102 Form 3
- 4 Ballooned drawing(s) and additional technical data like EO's, ECD's etc.
- 5 CoC from Supplier, ALL sub-tiers and processors
- 6 Material and process certificates
- 7 Product Qualification approval, when applicable
- 8 Production plan/technique/shop traveler approval
- 9 Completed shop travelers
- 10 Inspection plans/records
- 11 Copies of completed concession record(s).
- 12 Part marking verification (e.g., digital image) and printout from UID matrix reader.

1) --- PURPOSE FAI FORMS

- 13 AS9102 Form 1: AS9102 Form 1 is for Part Number Accountability.
This form is used to identify the part that is being first article inspected (FAI part) and associated (sub)assemblies or detail parts.
Specific information for each field is listed in 4.1.
- 14 AS9102 Form 2: AS9102 Form 2 is for Product Accountability – Raw Material, Specifications and Special Process(es), Functional Testing.
This form is used if any material, special processes or functional testing are defined as a design requirement.
Specific information for each field is listed in 4.2.
- 15 AS9102 Form 3 AS9102 Form 3 is for Characteristic Accountability, Verification and Compatibility Evaluation.
This form is used to record an actual measurement or inspection/verification of the FAI part for every design characteristic on the drawing, including notes.
Specific information for each field is listed in Annex 4.3.

2) --- GENERAL FAI FORM REQUIREMENTS

- 16 FAI forms shall meet the requirements of the latest revision of SAE AS9102 and the requirements of this instruction.
- 17 FAI forms shall be filled out in English.
- 18 FAI forms shall be completed either electronically or, clearly legible, in permanent ink.
- 19 AS9102 forms can be downloaded at: www.sae.org/aagg/publications/as9102a-faq.htm
- 20 When performing a partial FAI, use all FAI forms. Complete the forms as required. If FAI Form 2 or Form 3 does not change, mention this as such on the forms and add them in the FAI package.
- 21 Preferably FAI Form 1, 2 and 3 are separately numbered. It is also acceptable to combine them.
- 22 FAI Form continuation sheets using the same form are acceptable or insert additional rows if completing electronically.
- 23 Results shall be recorded in the units specified on the drawing or specification.
- 24 When 2 units are specified (e.g. Imperial and Metric), record as a minimum the unit as stated leading for product acceptance / rejection.
- 25 Verify that every design characteristic requirement is accounted for, uniquely identified and has



- inspection results traceable to each unique identifier
- 26 Results from inspection of design characteristics shall be expressed in quantitative terms (Variables Data) when a design characteristic is expressed by numeral limits.

3) --- FIELDS ON FAI FORMS:

- 27 Each field in the forms is designated with a unique reference number.
- 28 Each field is identified in tables 4.1-4.3 with the following markers under the column "Type":
- (I) Important field – Utmost consideration must be given to these fields and the data entered there.
 - (R) Required: Mandatory information, these fields must not be left empty.
 - (CR) Conditionally Required: This field shall be completed when applicable, for example in case of customer requirement or specific (deviating) circumstances. If not applicable, fill in "N/A".
 - (O) Optional: This field is provided for convenience.
- 29 **Where fields are not used, "N/A" must be filled in as confirmation that the field is not forgotten. This is a mandatory requirement for ALL fields, with the exception of "Customer approval".**
- 30 Date notation preferable: DD-MMM-YYYY. (e.g., 12-DEC-2013).
- 31 **NOTE:** Avoid any misinterpretation between date notation in the USA "month day, year" and date notation in Europe "day, month, year".

4.1) --- FAI FORM 1 DETAILED REQUIREMENTS

	Form	Field	Type	Item	Requirement
32	1	1	I	Part number	Number of the part (FAI part) as shown on the drawing.
33	1	2	I	Part Name	Name of the part as shown on the drawing.
34	1	3	I	Serial Number	Batch/serial number of the part. If FAI is not a serialized part, record the batch number.
35	1	4	R	FAI Report Number	Unique reference number that identifies the FAI. This may be an internal report number. Don't use part nr. as only reference.
36	1	5	I	Part Revision Level	The revision of the part being first article inspected. Indicate if there is no revision. Confirm prior to start of production the Rev being produced / certified!
37	1	6	R	Drawing Number	Drawing number associated with the FAI part. In case of a "NKT"-product mention both the original drawing- and sheet number as the "NKT"-drawing- and sheet number.
38	1	7	I	Drawing Revision Level	The drawing sheet number and revision level of the engineering drawing. If applicable record here also the separate Parts List and/or Notes List number and the revision level. If the Drawing, Parts list and/or Notes List consists of multiple sheets indicate per sheet the number and the revision level.
38	1	8	CR	Additional Changes	Provide reference number(s) of any changes that are incorporated in the product but not reflected in referenced drawing/part revision level (e.g., change in design, engineering changes, manufacturing changes, deviation or exclusion from certain drawing requirement, etc.). E.g., Engineer Orders (EO), Engineering Notice (EN) etc. If no changes, add N/A
40	1	9	R	Manufacturing Process Reference	A reference number that provides traceability to the manufacturing record of the FAI part (e.g., router number, jobcard, traveler, work order, manufacturing plan number, etc.)



					Any number or reference that provides that traceability is acceptable.
41	1	10	R	Organization Name	Name of the Supplier performing this FAI. The Supplier is the entity who manufactured the FAI part.
42	1	11	R	Supplier Code	Unique number given by Customer to the Supplier. It is sometimes referred to as Vendor Code, Vendor Identification Number, Supplier Number, etc. A cage code is acceptable. <ul style="list-style-type: none"> - If FLG has supplied an unique Supplier's Identification Number please use that number. - For FAI parts outsourced by the Supplier, mention the Supplier Code as given to the sub-tier Supplier. If no Supplier Code use N/A.
43	1	12	R	P.O. Nr. and P.O. Line Nr.	Record the Supplier's Purchase Order and if applicable Order Line Number.
44	1	13	R	Detail part or an Assembly FAI	Check as appropriate.
45	1	14a	R	Full FAI or Partial FAI	Check as appropriate.
46	1	14b	I	Reason for Partial FAI	For a partial FAI, provide the reason for the partial FAI. For a full FAI record here also the reason. (E.g., 1 st time production, work stoppage greater than 2 year, controlled action).

If applicable, Field 15. up to incl. 18. are related to detail part numbers or (sub) assembly numbers required to make the (sub) assembly as noted in Field 1.

47	1	15	R	Part Number	Number of the part (FAI part) as shown on the drawing. If no part numbers or (sub) assembly numbers required to make the (sub) assembly as noted in Field 1, record in the first line N/A. Further lines may remain empty.
48	1	16	R	Part Name	Name of the part as shown on the drawing. If no part numbers or (sub) assembly numbers required to make the (sub) assembly as noted in Field 1, record in the first line N/A. Further lines may remain empty.
49	1	17	R	Part Serial Number	Part batch/serial number. If no part numbers or (sub) assembly numbers required to make the (sub) assembly as noted in Field 1, record in the first line N/A. Further lines may remain empty.
50	1	18	R	FAI Report Number	FAI report reference number If no part numbers or (sub) assembly numbers required to make the (sub) assembly as noted in Field 1, record in the first line N/A. Further lines may remain empty. Include copies of ALL documents referenced here with the FAIR
51	1	19a	I	Signature	Name and signature/stamp of the person who prepared FAI Form 1. The signature on this form certifies the following two things: 1) That all characteristics are accounted for; meet drawing requirements or are properly documented for disposition, 2) FAI is complete per 52. Check as appropriate. This shall be a person authorized by the Supplier. <i>An electronic signature is acceptable as long as it is acceptable</i>



					<i>within Supplier's Quality Management System. The Quality Management System must define electronic signature usage and control.</i>
52	1	19b	R	FAI Complete/ FAI Not Complete	Check appropriate box. Check box "FAI complete" if the FAI is complete per SAE AS9102 5.4. Check box "FAI not Complete" if the FAI is not complete per SAE AS9102.
53	1	20	I	FAI Preparation Date	Date when this FAI Form 1 was prepared.
54	1	21	I	Reviewed By	Name and signature/stamp of the person from the Supplier who reviewed and approved FAI package. <i>This shall be a person from Quality Management or Designee.</i>
55	1	22	R	FAI Approval Date	Date when the FAI report is approved.
56	1	23	O	Customer Approval	This field is used by Customer to record approval. This field can be left blank.
57	1	24	O	Customer Approval Date	Date Customer approved this FAI. This field can be left blank.

4.2) --- FAI FORM 2 DETAILED REQUIREMENTS

Form	Field	Type	Item	Requirement	
58	2	1	I	Part number	See FAI Form 1, Field 1.
59	2	2	I	Part Name	See FAI Form 1, Field 2.
60	2	3	I	Serial Number	See FAI Form 1, Field 3.
61	2	4	R	FAI Report Number	See FAI Form 1, Field 4.
62	2	5	R	Material or Process	Record the name or description of material or process. Record the name as indicated per design characteristic. Examples: <ul style="list-style-type: none"> · Steel, Corrosion-Resistant PH13-8Mo condition H1000. · 15-5PH CRES condition H1025. · Passivate. · Epoxy Primer · Anodic Coating. · Electrical Chemical Etch .0005" deep · Precipitation-Hardening to H1150 · 100% Hardness Test. · Liquid Penetrant Inspection. Inspection Criteria per MIL-STD-1907 Grade A
63	2	6	R	Specification	Record material or process specification number. General: <ul style="list-style-type: none"> · Record the complete material or process specification. · Include the revision and revision amendments, if applicable. · Include permitted alternates, if used. · In case a design requirement specifies a specification that is superseded, state both the superseded specification as well the specification used. <ul style="list-style-type: none"> · When material or process deviate from design requirement include Concession Permit in Form 2, Field 10.



Extra for processes:

- Mention class, method, type etc., if any.

Examples processes: *(Mentioned revisions might be superseded or cancelled)*

- SAE AMS-QQ-P-35A s/s by SAE AMS2700E, Method 1, Type 2.
- MIL-PRF-23377K
- MIL-A-6825 F, Type IB, Class 1.
- LGPS1600 F, Amendment Rev. PSO800.
- SAE AMS2759/3 E.
- ASTM E18 - 12.
- ASTM E1417-E1417M - 13. Type 1, Method D, Sensitivity Level 3.
- MIL-STD-1907, Grade A. Valid Notice 4.

Extra for material:

- Record raw material form (e.g., sheet, bar, etc.).
- Include all "Make From" materials that are incorporated into the FAI part. For raw materials, include all materials that are incorporated into the FAI part, (e.g., weld/braze filler materials, balls for ball brazing, etc.), and Standard Catalog Hardware (e.g., AN, MS fasteners); but do not include processing materials such as acid etchants.

Examples for material: *(Mentioned revisions might be superseded or cancelled)*

- SAE AMS5643S, Flat.
- SAE AMS5659N, Bar.

64	2	7	CR	Code	When available record code for material or process listing.
65	2	8	R	Special Process Supplier Code	FLG doesn't recognize special process codes. Record name and place of Supplier performing special process(es) or supplying material, as applicable. Full address shall be recorded on the supplier certifications. If the Supplier is not the manufacturer, mention the manufacturer and all intermediary Suppliers involved. Also applicable for raw material and SCH.
66	2	9	CR	Customer Approval Verification	Indicate by recording "Yes", "No" or "N/A" if the special process or material source is approved by FLG. Unless FLG approval is known, record N/A
67	2	10	I	Certificate of Conformance Number	Reference number of the certificate (e.g., special process completion certification, raw material test report number, Standard Catalog hardware compliance report number, traceability number). A copy of ALL the certificates mentioned must be included with the FAIR. If there is no CoC, state: N/A. For partial FAIR's only mention the affected fields. Where applicable: when material or process deviate from design requirement a FLG concession permit is required.
68	2	11	R	Functional Test Procedure Number	Functional test procedure called out as design requirement. Include also the revision number of the procedure.
69	2	12	R	Acceptance Report Number	The functional test certification number indicating that test requirements have been met.
70	2	13	CR	Comments/	Production plan approval:



				Production Plan Approval	Record production plan approval nr. of FLG and Design Authority when applicable. Other comments as applicable. Note N/A if no additional info is required.
71	2	14	I	Prepared By	Name of the person who prepared this form. This shall be a person authorized by the Supplier. Always add a signature next to the name.
72	2	15	I	Date	Date when this form was completed.

4.3) --- FAI FORM 3 DETAILED REQUIREMENTS

	Form	Field	Type	Item	Requirement
73	3	1	I	Part number	See FAI Form 1, Field 1.
74	3	2	I	Part Name	See FAI Form 1, Field 2.
75	3	3	I	Serial Number	See FAI Form 1, Field 3.
76	3	4	R	FAI Report Number	See FAI Form 1, Field 4.
77	3	5	I	Characteristic Number (Char #)	Unique assigned number for each design characteristic. A ballooned drawing is required and considered an industry best practice to support Field 5 of Form 3. <ul style="list-style-type: none"> Identify 100% of the design characteristics. Give every design characteristics a unique number which correspond with the numbers on Form 3. Balloon and number all dimensions. Balloon and number all surface finish callouts (Including exclusion and inclusion area callouts). Balloon and number all material and hardness callouts Don't forget the requirements identified in the title boxes of the drawings.

NOTE: EACH char line # must be validated by the responsible QA official, by adding a SIGNATURE, INSPECTION STAMP AND DATE (see field 14). It is allowed to use curly braces () to combined multiple chars on the document to avoid cluttering the document with signatures / stamps.

If FORM 3 consists of multiple pages, EACH page must have the chars signed off!

78	3	6	R	Reference Location	Location of the design characteristic (e.g., drawing zone incl. page/sheet number and section, specification, etc.).
79	3	7	R	Characteristic Designator	If applicable, record characteristic type (e.g., Key, Flight Safety, Critical, Major, Minor, CTE etc.).
80	3	8	R	Requirement	Specified requirement for the design characteristic (e.g., drawing dimensional characteristics with nominal and tolerances included, drawing notes, specification requirements, etc.). <ul style="list-style-type: none"> Mention the complete text of the specified requirement or any other efficient, time saving method is acceptable as long traceability is maintained and the data on the attachment(s) is verified. If multiple units of dimension are stated as design characteristic, use the unit of dimension as stated leading for product acceptance/rejection.
81	3	9	R	Results	List measurement(s) obtained for the design characteristics.

For multiple characteristics:



- List each characteristic as individual values or list once with the minimum and maximum of the measured value attained.
- If the range is reported state the quantity of measured characteristics.
- If a characteristic is found to be non-conforming then that characteristic shall be listed separately with the measured value noted.

For design requirement require verification testing:

- Record the actual results.
- If a laboratory report or certificate of test is included in the FAIR, then these results need not be written on the form, record the reference number in this field. The laboratory report or certificate of test must show specific values for requirements and actual results.

For metallurgical characteristics with visual verification: (E.g. grain flow).

- Rate the requirement against standard photograph.
- List the photo number of the closest comparison.
- A statement of conformance is acceptable (record the reference number in this field).

For processes that require verification per design characteristic:

- Record verification indicator such as "Accept", "Conforms" or "Complies".
- Include statement of compliance (e.g., certification of compliance, CTE report/list etc.).

For processes that include process values:

- Include the results. (E.g. values of minimum layer thicknesses, go/no-go thread before/after thickness).

For screw threads:

- See Annex A.1. Screw Thread Inspection.

For part marking:

- Record as applicable method, content, color, height/depth/size and location per applicable specification.
- Add a print copy or photograph of part marking.

82	3	10	R	(Designed) Tooling	<p>Record always media of inspection.</p> <ul style="list-style-type: none"> · If a specially designed tooling (including NC programming) is used as a media of inspection, record also the tool identification number. · If a standard tooling is used as a media of inspection, record the type of tooling (e.g. caliper/vernier, comparator, profilometer etc.)
83	3	11	CR	Non-Conformance Number	<p>Record a non-conformance document reference number if the characteristic is found to be nonconforming. <i>See WI 8.3-1 "Control of Nonconforming Product".</i></p> <p>If there are no non-conforming issues, add N/A.</p>
84	3	12	I	Prepared By	<p>Name + signature/stamp of the person who prepared this form.</p> <p>This shall be a person authorized by the Supplier.</p>
85	3	13	R	Date	<p>Date when this form was completed.</p>



86	3	14	R	Inspector Characteristic	Record for EACH characteristic or group of characteristics the unique identification (signature & stamp + date) of the inspector, at the end of the line in question. The white border at the right side of the form can be used to add the signatures+dates.
87	3	-	O	Insert Columns	Add additional columns that are in addition to the requirements. Record any supporting information. Not applicable if no further info is necessary.

5) --- DEFINITIONS

88	Accept	For use in FAI Form 3 Field 9 to state that the requirements are met. The following words are accepted as a synonym: Complies, Conform, OK.
89	Attribute Data	A result of a characteristic or property that only indicates whether the result does or does not meet a given requirement (for example, go/no-go, accept/reject, pass/fail, conform/not conform etc.).
90	Batch Number	A unique number assigned to a specific work order for the production of 1 or more products. Don't use the same number as material batch number because this number might be used for different work orders. It's not allowed to use multiple material batches in a production batch.
91	Concession	Written permission to use or release a product that does not conform to the specified requirements. Note: A concession is generally to a specific time, serial number(s) or quantity of a nonconforming product.
92	Concession Request	Written request for a concession before delivery of a nonconforming product.
93	Critical Safety Item (CSI)	CSI's are those items whose failure results in a direct hazardous effect. A hazardous effect prevents continued safe flight and landing. CSI's if missing or not conforming to the design data, quality requirements, or overhaul and maintenance documentation, would result in an unsafe condition per the established risk acceptance criteria. The determining factor in CSI's is the consequence of failure, not the probability that the failure or consequence would occur. In communication other terms can be used as well (e.g. "Critical Part", "Flight Safety Part", "Safety Critical", "Mission Abort Critical", "Fracture Critical", "Class 1A/1B", "Flight Safety Critical Part"). The term Critical Safety Item is the encompassing term.
94	Defect	Product characteristic which is nonconforming to the requirements of the contract, specification, drawing, or other applicable product requirements.
95	Design Characteristics	Those dimensional, visual, functional, mechanical, and material features or properties, which describe and constitute the Design of the article as specified by Drawing Requirements. These characteristics can be measured, inspected, tested, or verified to determine conformance to the Design requirements. Dimensional features include in-process locating features such as target-machined (or forged/cast) dimensions on forgings and castings, and, weld/braze joint preparation necessary for acceptance of finished joint. Material features or properties may include processing variables and sequences, which are specified by the drawing (e.g., heat treat temperature, fluorescent penetrant class, ultrasonic scans, sequence of welding and heat treat). These provide assurance of intended characteristic that could not be otherwise defined.



96	Disposition	Instruction how a nonconforming product will be used (Rework, Repair, Use-As-Is, Scrap).
97	Drawing Requirements	Requirements of the drawing (include Parts Lists), specification, or purchasing document to which the article is to be made. These include any notes, specifications, and lower-level drawings invoked.
98	First Article Inspection (FAI)	A complete, independent, and documented physical and functional inspection process to verify that prescribed production methods have produced an acceptable item as specified by engineering drawings, planning, purchase order, engineering specifications, and/or other applicable design documents.
99	First Article Report (FAIR)	The forms and package of documentation for a part number or assembly, including FAI results, as per this instruction.
100	First Production Run Parts	The first group of one of more parts that are the result of a planned process designed to be used for future production of these same parts. Prototype parts, or parts built using methods different from those intended for the normal production process, shall not be considered as part of the first production run.
101	Flight Safety Part	See Critical Safety Item (CSI).
102	"Form", "Fit" and "Function"	<ul style="list-style-type: none"> · Form: the shape, size, dimensions, mass, weight, and other visual parameters which uniquely characterize a product. For software, form denotes the language and media. · Fit: The ability of a product to physically interface or interconnect with or become an integral part of another product. · Function: The action or actions which a product is designed to perform.
103	Item	Synonym for product.
104	Material Review Board	Committee of people authorized to review and determine the disposition of nonconforming product.
105	Measuring Device	A device for measuring a physical quantity. It shall be appropriate to the feature being measured, including the proper unit of measure (i.e. International System of Units (SI)/ Metric System) or Imperial (English Units)).
106	Multiple Characteristics	Identical characteristics that occur at more than one location (e.g., "4 places") but are established by a single set of drawing requirements (e.g., rivet hole size, dovetail slots, corner radii, chemical milling pocket thickness).
107	Must	To be required. Indicates a mandatory requirement. In this instruction similar to "shall".
108	NKT Product	A product ordered by customer where some requirements from the Design Authority are excluded. Product will be completed by the customer. An ordered NKT Product is also subject to the FAI requirements
109	Nonconforming Product	Product with 1 or more defects.
110	OK	See Accept.
111	Part or Product	The result of a process. A part is defined by engineering drawings or model based definitions. It includes finished detailed parts and (sub)assemblies, forgings and castings.
112	Proprietary Product	Design authority owned by a Supplier. Product cannot be recreated without the consent of the owner.
113	Reference Characteristics	The characteristics that are used for "information only" or to show relationship. These are dimensions without tolerances and refer to other dimensions on the drawing.
114	Repair	An action of correction to make a product functional, but not 100% conforming to requirements. Any Rework on a Critical Safety Item (CSI) shall also be treated as a Repair. For all Repairs a MRB-disposition is required.

For example:

Nonconforming condition: Bore internal diameter is discovered .002 inch (0,05 mm) under low limit after nital etch outside processing.



		<i>Appropriate action: Submit Concession Request to Reli for presentation to the customer.</i>
		<i>Nonconforming condition: Pit is discovered in the chrome by the Supplier during the final grind operation.</i> <i>Appropriate action: Submit Concession Request to Reli for presentation to the customer.</i>
115	Rework	An action of correction to correct nonconformities that bring a product back into 100% conformance to the applicable requirements prior to any controlled process. For example: <i>Nonconforming condition: Bore internal diameter is discovered .002 inch (0,05 mm) under low limit prior to outside processing.</i> <i>Appropriate action: Condition may be reworked.</i> <i>Nonconforming condition: Defective plating.</i> <i>Pit is discovered in the chrome by the processor during final review.</i> <i>Appropriate action: Condition may be reworked to as outlined within the specific plating specification requirements.</i>
116	Scrap	An action that renders the nonconforming or suspect product to a condition which prevents usability of the product in any manner. (Does not meet Form-Fit-Function).
117	Shall	In this instruction similar to "must".
118	Standard Catalog Hardware	A part or material that conforms to an established industry or national authority published specification, having all characteristics identified by text description, National/Military Standard Drawing, or catalog item.
119	Supplier	The Supplier that provides a product or service. Same as subcontractor. Can be an internal or external Supplier, sub-tier Supplier and/or processor.
120	Variables Data	Quantitative measurements taken on a continuous scale. For example, the diameter of a cylinder or the gap between mating parts.
121	Use-As-Is	Nonconforming product with or without Repair or Rework which can be used because it does not violate "Form", "Fit" and "Function". Concession request required.

6) --- ABBREVIATIONS

122	CA	Corrective Action
123	CoC	Certificate of Conformity/ Certification of Conformance
124	CR	Concession Request
125	CSI	Critical Safety Item
126	CTE	Critical To Engineering
127	CTM	Critical To Manufacturing
128	DFARS	Defense Federal Acquisition Regulation Supplement
129	ECD	Engineering Change Data
130	EN	Engineering Note
131	EO	Engineering Order
132	RELLI	Reli Technology Holland B.V., acting as official contractor for FLG
133	FLG	Fokker Landing Gear – customer/OEM supplying critical assemblies to Aerospace OEM's
134	ID	Identification Number
135	N/A or NA	Not Applicable



136	N/C	Non Conformance
137	NKT	"Niet Konform Tekening" <i>Not according to Drawing</i>
138	NL	Notes List
139	No. or Nr.	Number
140	P/N	Part Number
141	PL	Parts List
142	PO	Purchase Order
143	Op. No. or Op. Nr.	Operation Number
144	Qty	Quantity
145	SAE	Society of Automotive Engineers
146	SCH	Standard Catalog Hardware
147	SCMH	Supply Chain Management Handbook
148	SH	Sheet (Blue Print, Engineering Drawing)
149	UID	Unique Identification Number
150	#	Number sign

If any issues with the above arise, please contact us at:

purchase@relli.nl

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