

Questions & Answers

Q. What happens if non-conformance is found?

A. The FAI is not complete until all non-conformances affecting the part are closed and corrective actions implemented.

The FAI must be re-done for the affected characteristics. The new results should be clearly indicated on the FAI forms.

Q. Do I need to perform a full FAI every time a characteristic changes?

A. The FAI requirements are satisfied by a partial FAI that addresses the differences between the current and previous approved configuration. In this case only the affected fields in the forms need to be completed.

Q. Do I need independent inspection to perform the FAI?

A.. This is not specified in the standard. However it is good practice to meet the intent of the FAI that any inspection should be by independent means and measured from first principles. The need for measurement capability should be recognised through application of appropriate gauge Repeatability and Reproducibility studies.

Membership

The IAQG consists of key leaders from aerospace companies working together.

They represent 3 sectors:

- the Americas
- Europe
- Asia - Pacific

The members (about 70) are selected by the 3 sectors and **cover the largest aerospace companies in the world** (45 companies on board).

All prime aerospace industry companies are eligible to be members of the IAQG Council through one of the 3 sectors.

All members cover their own costs to participate in the IAQG.

Points of Information / Contact

A list of companies with personnel participating in IAQG can be found at:

www.iaqq.org

For further information on IAQG please contact:

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www.iaqq.org

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The International Aerospace Quality Group

FAI

First Article Inspection IAQS 9102 Rev A



Questions&Answers

Founded in 1998

Introduction

In order to ensure the integrity of aerospace products, the purpose of the First Article Inspection is to provide objective evidence that all engineering design and specification requirements are properly understood, accounted for, verified, and documented.

The First Article Inspection (FAI) is a check of the activities defined in the design/make launch plan on the first product from the series production run :

It provides

- confirmation that all necessary documentation, equipment and controls are available and are adequate for ongoing series production
- That the design and manufacturing procedures and processes are adequate and they have been fully utilised to produce the part
- “closed loop” verification that the part, as produced by the method examined during this activity, fully meets the design intend.

The following questions and answers may help to improve and better understand this standard

Questions & Answers

Q. Is this standard International?

A. This Standard for First Article Inspection (FAI) is developed by the International Aerospace Quality Group (IAQG).

It is published, like any other IAQG Standard, as :

- AS9102 by SAE in Americas
- EN 9102 by AECMA/CEN in Europe
- SJAC 9102 by SJAC in Asia

The standard has been revised to Rev A in order to clarify what is a mandatory requirement, a conditional requirement or optional requirement in the forms and to improve the layout of the standard to aid understanding of the intent.

Q. Why a new international standard ?

A. The main motivation for writing this Standard was that the IAQG recognizes that the aerospace companies have some common requirements for an FAI, however, the documentation requirements differ. This non-uniformity of the documentation has created unnecessary errors, confusion and rework. The development and adoption of common standard with unified requirements will

- eliminate common errors and omissions
- simplify FAI for suppliers
- focus on product quality rather than documentation

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Q. Is this a mandatory requirement “standard “ or just a “guideline” ?

A. Whether 9102 is a "standard" or a "guideline" depends upon Customer requirements. 9102 becomes enforceable only when invoked by the Customer.

If a Customer has not established any specific FAI requirements, then per 9100, 9102 is to be used as a "guideline" to perform FAI.

However, if a Customer requires an FAI to be performed as per 9102, then 9102 is treated as a requirement "Standard" and not as a “guideline”. In this situation, every requirement of the standard must be met, unless exempted by the Customer.

The IAQG member companies have committed to adopt this Standard as an FAI requirement.

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Q. What is the applicability of this standard?

A. This standard applies to assemblies, sub-assemblies and detail parts including castings and forgings. It does not apply to procured standard catalog hardware and deliverable software.

For assemblies, the assembly level FAI is performed on those design characteristics specified on the assembly drawing. Reference in the assembly FAI to detail level FAI reports is required.

The FAI is applicable to new product representative of the first production run. It is not a requirement of this standard that an FAI is performed on prototype parts or parts manufactured to methods different from those intended for the production run. However it may be used to verify conformance of such parts.

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Q. Do all fields in the forms have to be filled out?

A. No, the fields are classified as follows:

Each input field is identified in one of three ways :-

(R) Required:

This is mandatory information. The field is shown in Bold font

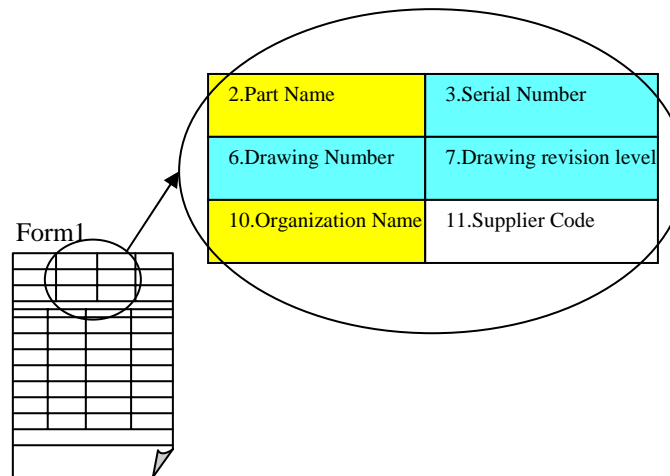
(CR) Conditionally Required:

This field must be completed when applicable. This field is shown in *Bold Italic* font

(O) Optional

This field is provided for convenience. It is shown in Regular font

The fields are also colour coded for visual convenience. (R) as Yellow and (CR) as Blue. The use of black and white forms is also acceptable.



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Q. Do I have to use the 9102 Forms?.

A. The completeness and accuracy of the FAI report contents is very important, for that, we need clear visibility and uniformity. To ensure uniformity and clear visibility to documentation requirements (e.g. characteristic accountability), 9102 standardizes the forms.:

- If you use another form, then that form must have the same field reference numbers and contain all "Required" and "Conditionally required" information.

- Additions to the forms can be made if there are extra company or customer requirements so long as the 9102 form content remains. Form 3 contains space for such additional requirements.

•Q. Can electronic forms be used?

A. Yes, electronic forms can be used.

As long as each field required by the relevant 9102 form is clearly accounted for and is visible in one place with appropriate field number, use of electronic forms is acceptable. Your Customer may require you to demonstrate that such accountability meets the intent of 9102 regarding clarity, visibility and uniformity.

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Q. Where can I find the forms electronically?

A. The 3 forms are available at the following web address in Word format.

<http://www.sae.org/aagg/publications/as9102a-faq.htm>

Q. Do I need to do more than complete the 3 forms?

A. In addition to completing the forms the FAI requires that the inspection includes reviewing the manufacturing process documentation to ensure that all operations were completed as planned; that referenced data was complete; that any non-conformance documentation is complete; that material certifications had been complied with; that the approved and correct special process was used; that key characteristic requirements were met; that part specific gauges and/or tooling was qualified and traceable; and, that every design characteristic was uniquely identified, accounted for, and inspected.

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Q. Are additional documents expected?

A. Supplier is required to provide objective evidence through reference to quality records affected by FAI

The evidence may include (but not limited to) signed records, stamped acceptance record signed reviews by peer, manager or QA , (as described by the supplier's quality system), certificates of conformance, corrective action records and closure, MRB records, duly signed published internal reports, etc . Electronic files, so long as they are stored on permanent, secure media, are also acceptable.

Q. Are the personal certification (e.g. NDT) part of the FAI?

A. This is not mandated in the standard. However it is good practice to have documented evidence that the operator certifications have been evaluated.

Documented evidence may be generically demonstrated via quality system assessment. For example, if you can demonstrate that you have a robust quality system that ensures such evaluations, it may be acceptable and the customer may not demand it every time you carry out an FAI.

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Q. Are routing papers mandatory to deliver?

A. The requirements demand that the router number reference is included in form 1, field 9.

It is not expected that you attach the routing document (unless your contract with the customer demands it). A reference to the appropriate revision control version of the manufacturing process may be sufficient, as long as you can demonstrate that you are producing parts to that specific process.

Q. Where should process specifications, procedure, basic methods be recorded?

A. You may reference such specifications in form 2 sections 5 and 6.

Q. Is it necessary to add data from equipment control calibration tests ?

A. That's covered by the result qualification system. You may reference to current report numbers and attach those reports to the FAI documentation.