

# FAQ

## Frequently Asked Questions About Safety in the Aviation Industry



With a particular focus on configuration management in accordance with EN/AS9100, our experts provide you comprehensive information on how to best avoid deficiencies and increase safety along the entire aviation industry value chain.

### 1. What are the requirements for aviation safety?

From production and delivery to operation and maintenance - safety along the entire value chain is critically important for the aviation industry. A comprehensive and reliable quality assurance system can be implemented to help ensure a high level of safety. Requirements for the aviation industry include various approval procedures for production and development as well as standards for optimal quality assurance.

### 2. What does the chain of responsibility in aviation look like?

Based in Cologne, the European Union Aviation Safety Agency (EASA) has been responsible for issuing device approvals for regulatory systems since 2003. Design organizations classified by the authorities according to EASA Part 21/J, as well as manufacturing and maintenance

organizations with an official approval according to EASA Part 21/G, therefore have full responsibility for placing only operationally safe components and equipment on the market - along the entire value chain.

### 3. How do the individual legal and regulatory requirements differ?

Formal laws such as the German Air Traffic Act (LuftVG) are legally binding regulations enacted by the legislature. In contrast, official requirements and directives such as the Air Traffic Regulations (LuftVO) and Regulation (EC) 748/2012 are substantive laws issued by the executive, i.e. the public administration. Recognized standards set state-of-the-art mandates to promote optimal conditions and provide technical support for existing legislation.

#### 4. What happens if EASA withdraws an equipment certification?

Only the production of new devices is affected in cases in which an EASA equipment certification is retracted. Existing and already installed devices are excluded. Devices in stock, on which a valid Form 1 is attached, can still be used for new installations.

Defective devices can be repaired by an approved company, usually with the help of the documents prepared within the framework of the old device approval. After repair, the devices receive a new Form 1 and may be reinstalled. However, this only applies if no design changes have been made due to unsafe conditions or if the appropriate tools or the necessary spare parts are still available.

#### 5. What are manufacturing organizations according to EASA Part 21/G?

EASA Part 21/G is the official approval of original equipment manufacturers (OEM) working in the aviation industry. A Part 21 manufacturing organization is a company that produces aeronautical equipment for which an airworthiness determination is required in accordance with the applicable design documentation. These companies require approval by the aviation authority demonstrating their competence for the manufacture of aeronautical products.

Since some legal peculiarities apply to the manufacture of aeronautical products, production may only be carried out in accordance with special prescribed manufacturer specifications. These specifications, the so-called “Approved Design Data”, are provided by a design organization approved according to EASA Part 21/J.

A manufacturing organization approval is also required for those organizations which produce aviation equipment that is not generally subject to separate testing as serial parts or equipment, but for which the necessity of an approval for technical reasons or for reasons of international cooperation has been determined by the aviation authority.

#### 6. What are maintenance organizations according to EASA Part 21/G?

Also approved according to EASA Part 21/G, maintenance organizations provide services to sustain aeronautical

products, parts or appliances in accordance with comprehensive documentation. Maintenance services include the overhaul, replacement, repair, inspections or changes (modifications) to aircraft, engines and components. Similar in many respects to EASA Part 21/G for manufacturers, the requirements for maintenance organizations are defined in the “Implementing Rule Continuing Airworthiness” in EASA Part 145.

#### 7. What are design organizations according to EASA Part 21/J?

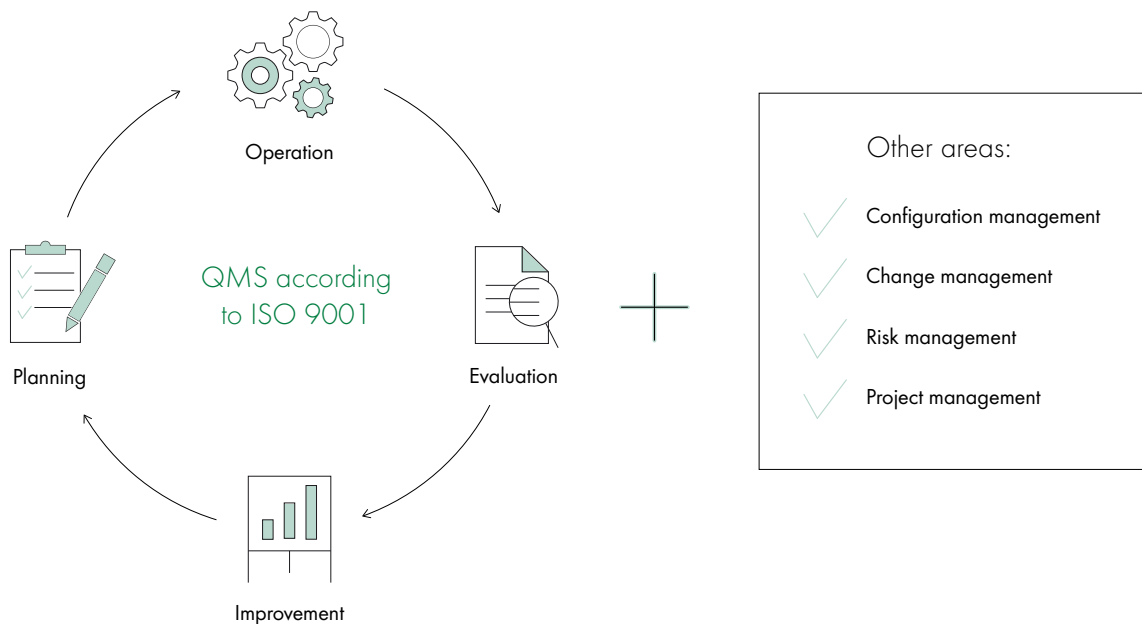
EASA Part 21/J is the official approval of design organizations. The development of aeronautical products is subject to special requirements regarding safety and reliability. Only EASA-approved companies that have successfully demonstrated their capability to design aeronautical products, parts or appliances are allowed to carry out new development. Design organizations base their designs on the approved production, maintenance or repair specifications (Approved Data).



#### 8. What is EN/AS9100?

The EN/AS9100 aviation standard regulates quality assurance in the aerospace industry. The EN/AS9100 series demands all participants in the aviation value-added chain introduce and maintain a corresponding quality management system. To a large extent, EN/AS9100 coincides with the legal requirements of the relevant aviation authorities, which describe the structure and content of a quality management system in detail (EASA Part 66, 21, 145, 147, M).

## Quality management in the aviation industry



The series of standards is divided into the following subgroups:

- EN/AS9100 Design, development, production, assembly and maintenance
- EN/AS9110 Maintenance organizations
- EN/AS9120 Distributors and warehouses

The EN/AS9100 series of standards is based on ISO 9001, the internationally recognized standard for quality management systems. The standard has been extended to include requirements specifically adapted to the aerospace industry.

### 9. What does a comprehensive, integrated quality management system in aviation look like?

EN/AS9100 integrates various areas into the overall quality management system (QMS) in order to meet the strict requirements of the aviation industry. In addition to the underlying ISO 9001 requirements, a comprehensive QMS includes integrated elements such as configuration management, change management, risk management and project management among others.

### 10. What are the advantages of certification to EN/AS9100?

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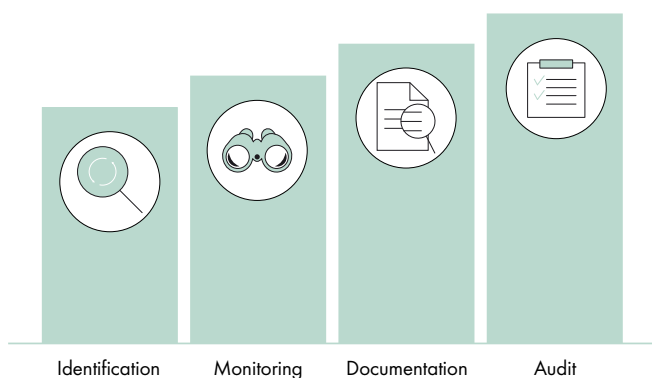
### 11. What is the objective of configuration management within the EN/AS9100 standard?

An important part of EN/AS9100, configuration management deals with the systematic control and proper documentation of the composition and properties of products - throughout the entire product life cycle.

The purpose of configuration management, in accordance with EN 9223-101, is to ensure consistent, common and traceable technical information. To allow for complete product traceability and quality assurance for all parts, each product should be comprehensively described from development and use, to maintenance, repairs and changes. Configuration management forms the link between content and scope management (project scope management) and quality management (project quality management). Outside of project management, configuration management usually falls under quality management. However, it can also be regarded as an independent discipline.

## 12. What are the four pillars of configuration management?

Certain steps are necessary to define the configuration of an aeronautical product in the best possible way. Configuration management therefore consists of four major pillars: identification, monitoring, documentation and audit. For identification, the most important units are hierarchically structured, defined and clearly separated from each other with distinct parameters and provided with a unique numbering for traceability. Monitoring and documentation primarily involve the tracking of changes to create a reliable basis for customer releases or support applications for official approvals. The last pillar, the audit, compares the technical implementation with the reference description, defined services and change requests. The audit also checks to make sure that the configuration description is up-to-date.



## 13. Does an EN/AS9100 audit check the configuration management?

Yes. Based on EN 9101, a standard founded on the well-known ISO 9001 and extended to include the requirements for aerospace and defense organizations, the audit also mandates the review of various sub-areas including configuration management.

## 14. How can you prepare for an EN/AS9100 audit?

Air carriers should determine the scope, limits and applicability of their quality management system (QMS). In addition, a comprehensively described process landscape with interfaces, concrete process objectives and process-oriented management techniques is important and should be implemented accordingly. If the objectives of individual processes are not met, corrective action plans must be submitted as proof of the continuous QMS improvement. All companies operating in the aviation industry must continuously improve the suitability, adequacy and effectiveness of their quality management system.

Contact our experts to learn more about safety in the aviation industry today!

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