



AEROSPACE STANDARD

AS9016

REV. A

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Superseded by AS9116

Aerospace Series – Notice of Change (NOC) Requirements

RATIONALE

AS9016 is cancelled and superseded by AS9116.

CANCELLATION NOTICE

This document has been declared "CANCELLED" as of March 2015 and has been superseded by AS9116. By this action, this document will remain listed in the Numerical Section of the Aerospace Standards Index noting that it is superseded by AS9116. Cancelled specifications are available from SAE.

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FOREWORD

To assure customer satisfaction, aerospace industry organizations must produce and continually improve safe, reliable products that meet or exceed customer and regulatory authority requirements. The globalization of the aerospace industry and the resulting diversity of regional/national requirements and expectations has complicated this objective. End-product organizations face the challenge of assuring the quality and integration of product purchased from suppliers throughout the world and at all levels within the supply chain. Aerospace suppliers and processors face the challenge of delivering product to multiple customers having varying quality expectations and requirements.

The aerospace industry established the International Aerospace Quality Group (IAQG) for the purpose of achieving significant improvements in quality and safety, and reductions in cost throughout the value stream. This organization includes representation from aerospace companies in the Americas, Asia/Pacific, and Europe.

This document standardizes requirements for Notice of Change (NOC) data definition and documentation for the aviation, space, and defense industries. The establishment of common requirements for use at all levels of the supply-chain is intended to improve quality, safety, and decrease costs by the elimination or reduction of organization-unique requirements and the resultant variation inherent in these multiple expectations.

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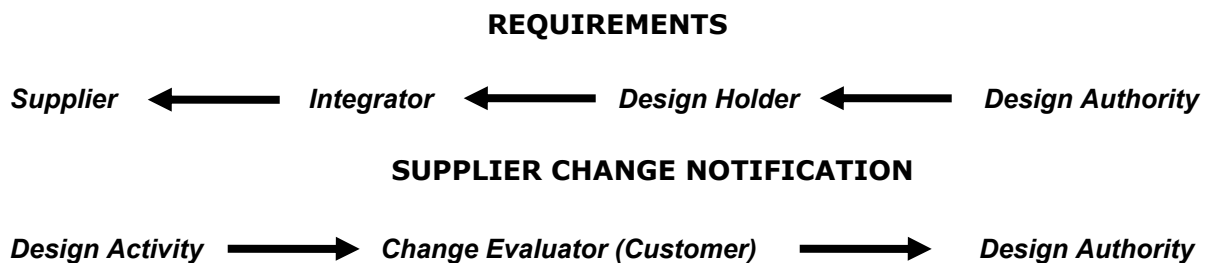
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1. SCOPE

1.1 General

The aviation, space, and defense industries rely on the development and manufacture of complex products comprised of multiple systems, subsystems, and components each designed by individual designers (design activities) at various levels within the supply chain. Each design activity controls various aspects of the configuration and specifications related to the product. When a change to design information is requested or required, the change has to be evaluated against the impacts to the higher-level system.

Proposed changes to design information that the design activity identifies to be minor and have no effect on their product requirements or specifications have the potential to be concurrently implemented and approved, where authorized to do so. Changes that affect customer mandated requirements or specifications must be approved prior to implementation. In many cases, the design activity is not the design approver or authority; ultimate approval may be several layers above the design activity.



Submitting NOC data either electronically or conventionally on paper is subject to the terms and conditions of the customer's contract. This also includes, where applicable, data access under the regulations of export control.

The process of exchanging, coordinating, and approving NOC data varies with the multiple relationships and agreements among all parties concerned. The information provided by this standard forms the architecture for submitting and managing data that allows for concise and accurate communication using various methods. One objective of this standard is to provide the definition of a data set that can be integrated into any form of communication (e.g., electronic data interchange, submission of conventional paper forms).

If this standard is invoked in the contract, design activities and Technical Standard Order Approval (TSOA) holders that have responsibility for change management of products used on other higher-level designs shall use the information and processes defined in this standard for submitting change notifications to customers.

1.2 Application

This standard defines the common NOC requirements for aviation, space, and defense organizations. Included are the requirements that an internal/external supplier or subcontractor shall use when submitting a NOC to the customer for either change authorization or notification. A NOC informs the customer of physical or functional (including software) changes to an established baseline configuration. Retention of the NOC establishes a means of configuration control and captures the evolution of the part. This concept is of utmost importance in commercial/civil aviation products where changes to type certificated products is mandated by regulations. However, these same concepts are also required to some degree in defense and space applications per contractual requirements.

This standard is not applicable to products that are manufactured by a supplier to their customer's designs and processing requirements (also known as build-to-print). Change requests to this type of product shall be formally submitted to the customer and approved via the customer's change request process. Additionally, this standard is not applicable to commercial parts (off-the-shelf items not specifically designed for aviation, space, or defense products) for which changes in product definition is not affected or known, but change to commercial parts that are known (i.e., change in definition from one commercial part number to a different commercial part number) shall be processed in accordance with this standard.

When this standard is applied to an organization that distributes product, then this standard shall be a requirement from the distribution organization to the organization from which the product is procured. The distribution organization can act as a conduit for the NOC or the design activity (supplier) can work directly with the design authority (customer). The distribution organization should be compliant with AS9120 as per customer requirements.

Application or implementation of this standard in any form, either expressed or implied, is not allowed for product which has escaped the supplier's quality system.

2. APPLICABLE DOCUMENTS

The following publications for a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of the other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

AS9100 Quality Management Systems – Requirements for Aviation, Space and Defense Organizations

AS9110 Quality Management Systems – Aerospace - Requirements for Maintenance Organizations

AS9120 Quality Management Systems – Aerospace - Requirements for Stocklist Distributors

ARP9034 A Process Standard for the Storage, Retrieval and Use of Three-Dimensional Type Design Data

2.2 ANSI Publications

Available from American National Standards Institute, 25 West 43rd Street, New York, NY 10036-8002, Tel: 212-642-4900, www.ansi.org.

ANSI/ASME Y14.24 Types and Applications of Engineering Drawings

2.3 EIA Publications

Available from Electronic Industries Alliance, 2500 Wilson Boulevard, Arlington, VA 22201-3834, Tel: 703-907-7500, www.eia.org.

EIA – 649 National Consensus Standard for Configuration Management

2.4 ISO Publications

Available from American National Standards Institute, 25 West 43rd Street, New York, NY 10036-8002, Tel: 212-642-4900, www.ansi.org.

ISO 9000:2005 Quality management systems – Fundamentals and vocabulary

3. TERMS AND DEFINITIONS

For the purposes of this document, the terms and definitions stated in ISO 9000 and the following shall apply:

3.1 Baseline Configuration

The design definition for the physical product and its performance requirements from which design change control can then take place. This is determined jointly by the customer and the design activity.

3.2 Change Evaluator

The person authorized on behalf of the design authority to assess the potential impact of the change(s), evaluates changes for the potential impact on the fit, form, or functionality of the part, system, or assembly and failure to meet the customer requirements. The change evaluator could also be the customer or the producer of the end item and/or the design authority.

3.3 Deliverable

Any design data provided to the customer which represents the product provided.

3.4 Design Activities

The supplier design activity or subcontractor that owns the design and provides a deliverable to the customer.

3.5 Design Authority

An organization with formal authority for the design, validation, and service support of a product.

NOTE: In civil aviation, this is the organization responsible for the design of articles or for changes thereto that is the holder of a design approval granted by a regulatory authority [i.e., Type Certificate (TC), Supplemental Type Certificate (STC), Parts Manufacturer Approval (PMA), Technical Standard Order (TSO)/Joint TSO/European TSO, European Part Approval (EPA) or equivalent].

3.6 End Item

The item that is ultimately delivered to the end user (e.g., vehicle, propulsion system).

3.7 Key Characteristics

An attribute or feature whose variation has a significant effect on product fit, form, function, performance, service life, or producibility that requires specific actions for the purpose of controlling variation.

3.8 Mandatory

A requirement that must be fulfilled or common transferable data that must be provided and systematically recorded.

3.9 Optional

Any data field that is not defined as mandatory by this standard, including any special data fields requested by the customer or the originator.

3.10 Product

In this document product means any aerospace vehicle, engine, propeller, airframe part or equipment (within that vehicle) to be used in operating or controlling an aerospace vehicle in flight. The result of a process, which in the context of this standard includes finished detailed parts and assemblies. It also includes forgings and castings.

NOTE: Product can include software that is embedded or field loadable in the end item.

3.11 Source Control Drawing (SOCD)

Source Control drawing as defined by ANSI/ASME Y14.24.

3.12 Special Process

A process where the resulting output cannot be verified by subsequent monitoring or measurement and as a consequence, deficiencies become apparent only after the product is in use or has been delivered.

4. CONFIGURATION CHANGE DEFINITIONS

4.1 Changes to Baseline Configurations

A baseline configuration is an agreed configuration definition against which compliance was shown (e.g., certification baseline). Baseline configuration is captured by design data and is typically retained by the design activity. The baseline configuration must clearly define the design characteristics and performance requirements of the product to the lowest level of detail necessary to produce the product and ensure compliance with all applicable requirements of the customer.

All changes to previously customer accepted baseline configurations must be evaluated and approved. Until the requirements of section 5 are satisfied, each change (from the lowest level in the supply chain) shall be submitted to the customer and ultimately to the design authority for concurrence to implement. Figure 1 depicts the process when customer delegated change evaluation is not obtained and Figure 2 is for organization's with customer delegated change evaluation approval.

The product baseline configuration from which changes will be evaluated may include:

- a. Source Control Drawing (SOCD).
- b. Product specifications and drawings, including electronic data sets and supersession.
- c. Bill of Materials (BOM), including definition of line replaceable items.
- d. Process specifications in accordance with contractual requirements.
- e. Manufacturing methods, as shown on engineering drawings.
- f. Product usage/function/systems application, which may include:
 1. Affect of product failure on system application.
 2. Identification of key components, processes, and/or characteristics, as applicable.

