SLOVENSKI STANDARD
oSIST prEN 9116:2022

01-junij-2022

Aeronavtika - Sporočilo dobavitelja o spremembi

Aerospace Series - Supplier Notice of Change (NOC)

Ta slovenski standard je istoveten z: prEN 9116

ICS:

49.020	Letala in vesoljska vozila na splošno	Aircraft and space vehicles in general

oSIST prEN 9116:2022 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 9116

April 2022

ICS

Will supersede EN 9116:2015

English Version

Aerospace Series - Supplier Notice of Change (NOC)

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ASD-STAN.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (prEN 9116:2022) has been prepared by the Aerospace and Defence Industries Association of Europe — Standardization (ASD-STAN).

This document is currently submitted to the CEN Enquiry.

After enquiries and votes carried out in accordance with the rules of this Association, this document has received the approval of the National Associations and the Official Services of the member countries of ASD-STAN, prior to its presentation to CEN.

This document will supersede EN 9116:2015.

0 Introduction

0.1 Rationale

This document was created to define the process requirements and data expectations for the submission of proposed changes in design and manufacturing information that requires approval of the Design Approval Holder (DAH), when the DAH is different from the design activity. This document provides for the organisational requirements, definitions, and data submission, including suggested data descriptions and format (paper or electronic submission).

This revision to the document provides updated information and improves the writing clarity to facilitate uniform submittal of supplier change notifications and/or approval when contractually invoked at any level, including sub-tier suppliers, or as guidance within the aviation, space, and defence industries. This document can be invoked as a stand-alone requirement or used in conjunction with 9100-series standards (i.e. 9100, 9110, 9120).

0.2 Introduction

To ensure customer satisfaction, aviation, space, and defence industry organisations needs to provide and continually improve, safe and reliable products and services that meet or exceed customer and applicable statutory and regulatory authority requirements. The globalization of the industry and the resulting diversity of regional and national requirements and expectations have complicated this objective. Organisations have the challenge of purchasing products and services from external providers throughout the world and at all levels within the supply chain. External providers have the challenge of delivering products and services to multiple customers with varying quality expectations and requirements.

Industry established the International Aerospace Quality Group (IAQG), with representatives from aviation, space and defence companies in the Americas, Asia/Pacific, and Europe, to implement initiatives that make significant improvement in quality and reductions in cost throughout the value stream. This international standard has been prepared by the IAQG.

This document identifies requirements for design change management and/or manufacturing process change to a previously approved product design (baseline configuration) of the product. This includes requirements for supplier Notice of Change (NOC) data definition and documentation for the aviation, space, and defence 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. This document can be invoked as a stand-alone requirement or used in conjunction with IAQG 9100-series standards (i.e. 9100, 9110, 9120).

1 Scope

1.1 General

The aviation, space, and defence 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 or manufacturing activity controls various aspects of the configuration and specifications related to the product. When a change to design or process is requested or required, the change is typically required to be evaluated against the impacts to the entire 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 implemented and approved, where authorized to do so, but require notification. Changes that affect customer mandated requirements or specifications shall be approved prior to implementation. In many cases, the design activity is not conducted by the DAH or design authority. The design activity may be several layers below the design approval. Irrespective of the supplier is in the supply chain, notification is required. The typical change notification flow is presented in Figure 1.

Figure 1 — Requirements for change notification flow

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 organisations concerned. An objective of this document 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). A sample form can be found in the Supply Chain Management Handbook (SCMH).

If all or part of this document is contractually invoked, design organisations and design holders (i.e. the organization responsible for the product end item design) that have responsibility for change management of products used on other higher-level designs need to use the information and processes defined in this document for submitting change notifications.

1.2 Purpose

This document defines the common NOC requirements for aviation, space, and defence organisations. Included are the requirements that an internal/external supplier or subcontractor need to use when submitting a NOC to the customer for either change authorization or notification. A NOC informs the customer of physical or functional (e.g. design, material, software) changes or any associated process changes to an established baseline configuration.

Retention of the NOC establishes a means of configuration control and captures the evolution of the part. This requirement is of utmost importance in commercial/civil aviation products where changes to type certificated products are mandated by regulations; however, these same concepts are also required in defence and space applications per contractual requirements.

Where there are changes to items which the organization does not have design input or is not permitted to make any changes to the design [e.g. build to print, Technical Standard Order (TSO) articles]. Change requests need to be formally submitted to the customer and approved via the customer's change request process.

This document is not applicable to commercial parts [off-the-shelf items not specifically designed for aviation, space, or defence products; aka Commercial off-the-Shelf (COTS)] for which changes in product definition is not affected or known. COTS items that are modified or altered are subject to the requirements herein. When this document is applied to an organization that distributes product, then this document need to be a requirement from the distribution organization to the organization from which the product is procured.

1.3 Convention

In this document, the following terms are used:

— "shall" indicates a requirement;

— "should" indicates a recommendation;

— "may" indicates a permission; and

— "can" indicates a possibility or capability.

Words "example" or "e.g." indicate suggestions given for guidance. Information marked "NOTE" is for guidance in understanding or clarifying the associated requirement.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 9100:2018, *Quality Management Systems - Requirements for Aviation, Space and Defence Organizations*[1]

EIA – 649, National Consensus Standard for Configuration Management [2]

SUPPLY CHAIN MANAGEMENT HANDBOOK I.A.Q.G. (SCMH) — (see IAQG website — https://iaqg.org/tools/scmh/)

RTCA/DO-254, Design Assurance Guide for Airborne Electronic Hardware (EUROCAE ED-80) [3]

3 Terms and definitions

For the purposes of this document, the terms and definitions given in the IAQG International Dictionary [4] and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at https://www.iso.org/obp
- IEC Electropedia: available at https://www.electropedia.org/

3.1
baseline configuration
product definition that is established by agreeing to the definition of the attributes for a product at a point in time; identifies a known configuration to which changes are addressed

Note 1 to entry: this definition is sometimes determined jointly by the customer and the design activity (supplier) and may require consultation with the DAH and/or design authority, if different than the customer.

3.2
change evaluator
person(s) authorized on behalf of the DAH 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

Note 1 to entry: the change evaluator could also be the customer or the producer of the end item.

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[1] As developed under the auspice of the IAQG and published by various standards bodies [e.g., ASD-STAN, SAE International, European Committee for Standardization (CEN), Japanese Standards Association (JSA)/Society of Japanese Aerospace Companies (SJAC), Brazilian Association for Technical Norms (ABNT)].
[2] Published by: Electronic Industries Alliance (EIA) Publications; https://www.eia.org.
[3] Published by: Radio Technical Commission for Aeronautics Inc.; https://www.rtca.org.
[4)] Located on the IAQG website: https://iaqg.org/tools/dictionary/.

3.3
critical item
items (e.g., functions, parts, software, characteristics, processes) having significant effect on the provision and use of the products and services; including safety, performance, form, fit, function, producibility, service life, etc.; that require specific actions to ensure they are adequately managed

EXAMPLE Examples of critical items include safety critical items, fracture critical items, mission critical items, and key characteristics.

3.4
design activity
organisation that transforms customer supplied information and/or design specifications into product attributes to establish the configuration of the product

3.5
design approval holder
(DAH)
organisation with formal approval for the design, validation, and service support of a product

Note 1 to entry: in civil aviation, this is the organization responsible for the design of product 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); TSO/European Technical Standard Order (ETSO); European Part Approval (EPA); European Aviation Safety Agency (EASA) Part 21 - "Design Organisation Approval Holder", or equivalent].

3.6
end item
item that is ultimately delivered to the end user

EXAMPLE Aircraft, vehicle, propulsion system.

3.7
key characteristics
(KC)
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

Note 1 to entry: refer to 3.3.

3.8
product
aviation, space, and defence vehicle, engine, propeller, airframe part, or equipment (within that vehicle) to be used in operating or controlling a vehicle in flight

Note 1 to entry: the result of a process, which in the context of this standard includes any item, part, or component used in the end item (see 3.6).

Note 2 to entry: product may include software that is embedded or field loadable in the end item.

3.9
source control drawing
(SCD)
engineering description, qualification requirements, and acceptance criteria for items procurable from a specialised segment of industry, that provides the performance, installation, interchangeability, or other characteristics required for critical applications

Note 1 to entry: an SCD also provides visibility of approved sources and the vendor's item identification that is qualified and approved for use in the critical application(s).

[SOURCE: adapted from ANSI/ASME Y14.24.]

3.10
special process
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 requirements

4.1 Changes to baseline configuration

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 shall clearly define the design characteristics and performance requirements of the product, including acceptance conditions of the products 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 shall be evaluated and approved. Any changes in the product configuration shall be submitted to the customer and DAH if different from the customer's. Figure 2 depicts the process when customer-delegated change evaluation is not obtained, and Figure 3 is for organization with customer-delegated change evaluation approval.

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

a. SCD;

b. product specifications and drawings, including electronic data sets and supersession;

c. bill of materials (BOM), including definition of spare or substitute parts which may be used in repair, but have different definition than those of baseline configuration parts;

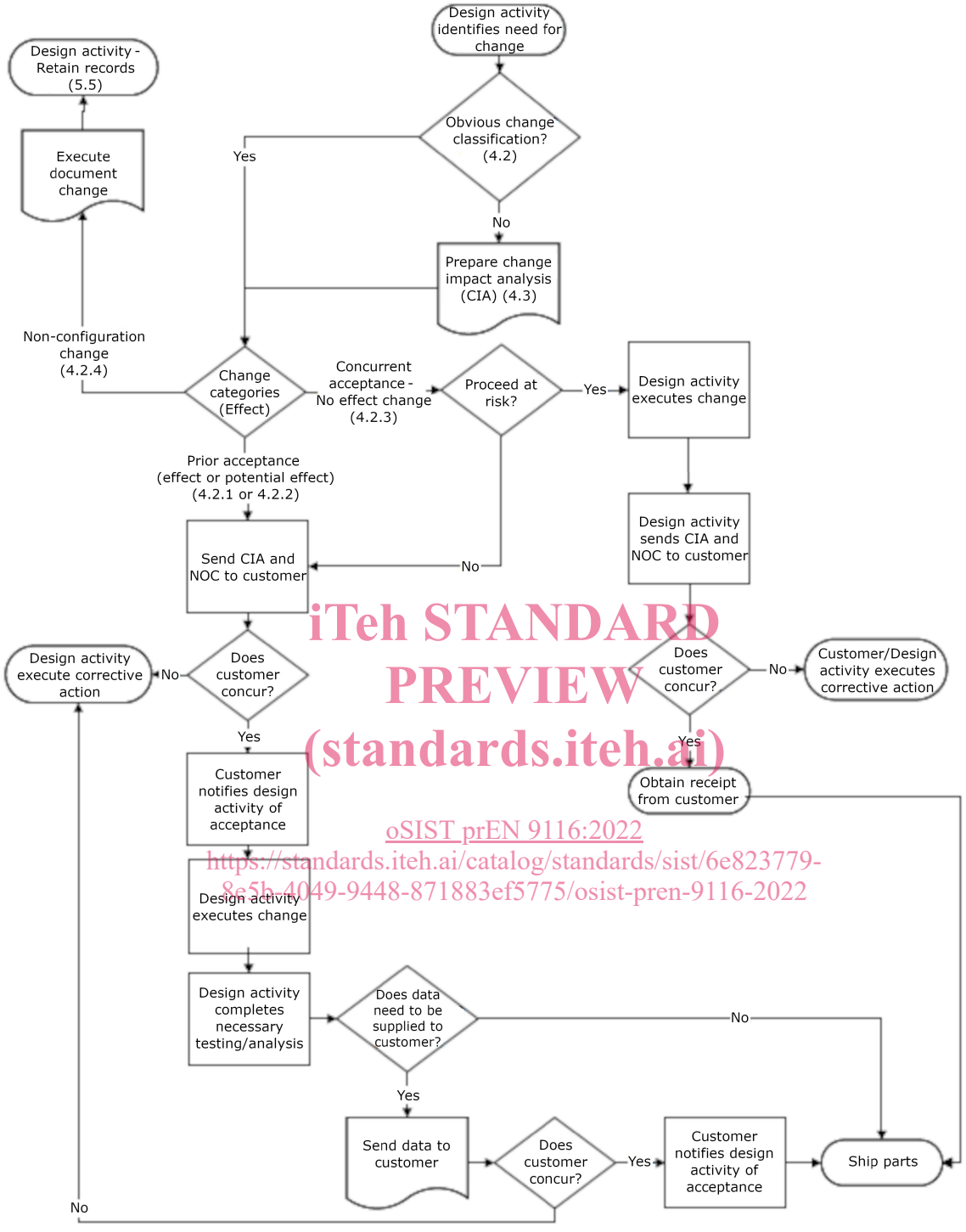
d. process specifications in accordance with contractual requirements;

e. manufacturing methods, as shown on engineering drawings or supporting process specifications;

f. product usage/function/systems application, which may include:

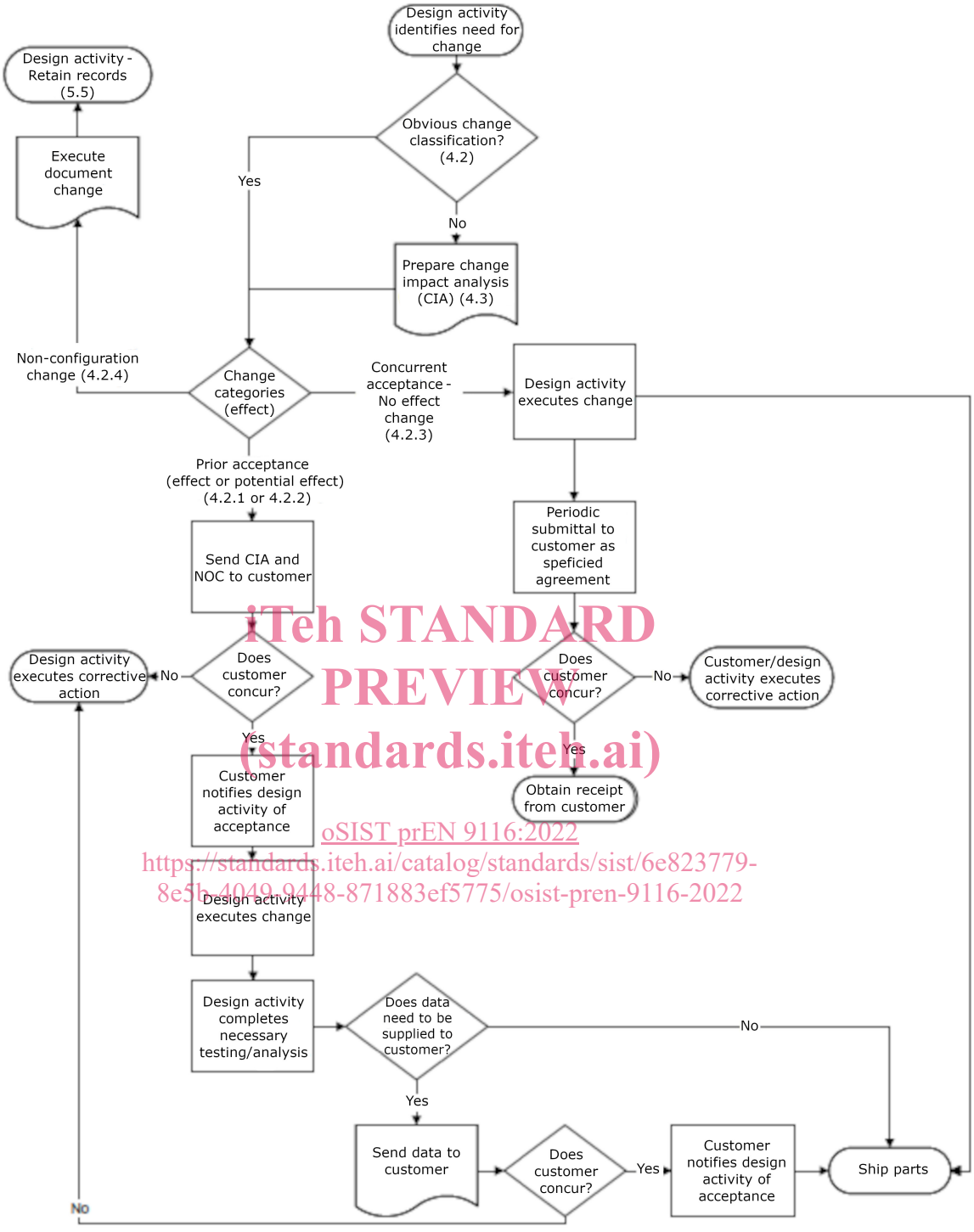
   — effect of product failure on system application,

   — identification of key components, processes, and/or characteristics, as applicable.



NOTE Design activity does not meet criteria of Clause 5.

Figure 2 — Flow chart for notice of change (NOC) submittal (design activity is not authorized to analyse changes on behalf of customer)



NOTE Design activity meets criteria of Clause 5.

Figure 3 — Flow chart for notice of change (NOC) submittal (design activity is authorized to analyse changes on behalf of customer)