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Space systems — Programme management and quality — Vocabulary

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 14, *Space systems and operations*.

This second edition cancels and replaces the first edition (ISO 10795:2011), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the following terms have been added: acceptable risk, acceptance of risk, assurance, authorization, availability, breadboard, breakdown structure, cause, caution condition, certificate of conformity, certification, commissioning, counterfeit part, critical <safety>, critical <general>, flight spare, functional specification, ground segment, implementation document, information system, interface control document, key characteristic, milestone, orbital disposal, qualification model, re-entry, review board, space segment, space segment element, special requirements, systems engineering, and systems engineering management;

— the following terms have been removed: audit client, audit conclusion, audit criteria, audit evidence, audit findings, availability of an item, certificate of compliance, certification procedure, Critical, launch vehicle, non-conformance, normative reference, organizational structure, part, quality manual, quality planning, space element, and spare parts.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

It is intended that this document be applied for the management, engineering, and product assurance in space projects and applications. The definitions in this document specify what is accomplished, rather than how the necessary work is organized and carried out. This allows the application of existing organizational structures and methods where they are effective, and for the structures and methods to evolve as necessary without rewriting the standards. The formulation of this document takes into account the existing International Standards prepared by ISO/TC 176, *Quality management and quality assurance*.

Space systems — Programme management and quality — Vocabulary

1 Scope

This document provides definitions of all common terms used in the area of space systems and operations for programme management and quality. It does not contain terms specific to an individual International Standard in the area of space systems and operations, which are defined in that particular International Standard.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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 http://www.electropedia.org/

3.1
acceptable risk
safety (3.210) *risk* (3.206), the *severity* (3.215) and the probability of which may be reasonably accepted by humanity, without durable or irreversible foreseeable consequence on health, Earth, and the *environment* (3.92), at the present time and in the future

EXAMPLE A safety risk may be acceptable for crew members of a manned *space vehicle* (3.225) when it is comparable to that of *test* (3.239) pilots, for the personnel participating in hazardous activities when it is comparable to that of industrial workers, for people, public and private property, and the environment, when it is comparable to that of other hazardous human activities (e.g. high-speed surface travel).

[SOURCE: ISO 14620-2:2011, 3.1]

3.2
acceptance
<act> act, means of which *customer* (3.78) certifies that the object developed and manufactured in accordance with his/her *specification* (3.227), and he/she agrees with the reveal *deviations* (3.86) and *failures* (3.98) ("complaints") and that this object is free from *defects* (3.79) under its delivery by the *supplier* (3.232)

3.3
acceptance
<process> part of the *verification* (3.244) *process* (3.171), which demonstrates that the *product* (3.173) meets specified acceptance margins

[SOURCE: EN 16601-00-01:2015, 2.3.2]

3.4
acceptance criteria
minimum *requirements* (3.201) that it is necessary for an *item* (3.134) to satisfy for formal *acceptance* (3.2, 3.3)

3.5
acceptance of risk
decision to cope with consequences, should a *risk* (3.206) scenario materialize

Note 1 to entry: A risk can be accepted when its magnitude is less than a given threshold, defined in the *risk management policy* (3.209).

Note 2 to entry: In the context of *risk management* (3.208), *acceptance* (3.2, 3.3) can mean that even though a risk is not eliminated, its existence and magnitude are acknowledged and tolerated.

[SOURCE: ISO 17666:2016, 3.1.1]

3.6
accepted risk
hazard (3.120) that has not been eliminated and for which the *residual risk* (3.202) is deemed low enough to continue operation and that has been accepted by *project* (3.178)/program *management* (3.146) on the basis of documented *risk* (3.206) *acceptance* (3.2, 3.3) rationale

3.7
acceptance test
test (3.239) to determine that a *system* (3.234), *subsystem* (3.231), *component* (3.48) or functional part is capable of meeting *performance* (3.166) *requirements* (3.201) prescribed in a purchase *specification* (3.227) or other *document* (3.88) specifying what constitutes the adequate performance capability for the *item* (3.134) and to demonstrate that the item is free from manufacturing *defects* (3.79)

3.8
accident
mishap
undesired event arising from operation of any *project* (3.178)-specific *items* (3.134) which results in:

a) human death or injury;

b) loss of, or damage to, *hardware* (3.119), *software* (3.217) or facilities which could then affect the accomplishment of the *mission* (3.154);

c) loss of, or damage to, public or private property; or

d) detrimental effects on the *environment* (3.92)

[SOURCE: ISO 14620-1:2018, 3.1.1, modified — The term "mishap" has been added as an alternative.]

3.9
action
task negotiated between two and only two persons, one decision maker and one holder, whose result leads to an expected result as a description of an operation in the formulation of a solution, and is characterized by objectives in terms of cost, *quality* (3.188) and due date

3.10
action item
assignment to a designated *organization* (3.163) or individual the accomplishment of a defined objective within a specified time frame

3.11
alert
formal notification to users, informing them of a *failure* (3.98) or *nonconformity* (3.157) of an *item* (3.134), already released for use or not, that can also be present on other items already delivered (e.g. items with identical *design* (3.82, 3.83) concept, *material* (3.148), *component* (3.48) or *process* (3.171))

Note 1 to entry: An alert can also be raised when a deficiency in a specified *requirement* (3.201) that can affect the fitness for purpose in the defined application has been identified.

[SOURCE: EN 16601-00-01:2015, 2.3.6]

3.12
analysis
verification (3.244) method utilizing techniques and tools such as math *models* (3.155), compilation similarity *assessments* (3.24), *validation* (3.243) of *records* (3.194), etc., to confirm that verification *requirements* (3.201) have been satisfied

3.13
anomaly
gap between a current situation and an expected one

Note 1 to entry: An anomaly justifies an investigation that can lead to the discovery of a nonconformance, a *defect* (3.79) or a "non-lieu" (*deviation* (3.86) without impact, e.g. *product* (3.173) peculiarity).

Note 2 to entry: A deviation may be declared, foreseen or requested.

Note 3 to entry: An anomaly is often detected in comparison with what seems to be standard or with the expected use.

3.14
applicable document
document (3.88) that contains *provisions* (3.181) which, through reference in the source document, incorporates additional provisions in the source document

Note 1 to entry: In this context, a provision is an expression that takes the form of a statement, an instruction, a recommendation or a *requirement* (3.201).

3.15
approval

formal agreement by a designated *management* (3.146) official to use or apply an *item* (3.134) or proceed with a proposed course of *action* (3.9)

Note 1 to entry: Approvals shall be documented.

Note 2 to entry: Approval implies that the approving authority has verified that the item conforms to its *requirements* (3.201).

[SOURCE: EN 16601-00-01:2015, 2.3.11]

3.16
as-built configuration
configuration (3.50) of one *product* (3.173) *item* (3.134) identified by its gaps of *conformity* (3.60) with respect to its applicable configuration

Note 1 to entry: The relevant "*as-designed configuration* (3.19)" corresponds to the same "part number".

Note 2 to entry: "As-built configuration" includes any impacts from technical events, anomalies, *repairs* (3.199), life potential consumption that occurred before the product delivery and any potential *modifications* (3.156) applied on the product but not embodied in the relevant *design* (3.82, 3.83) data file.

3.17
as-built configuration list
ABCL
reporting instrument defining the "as-built status" for each serial number of a *configuration item* (3.55) subject to formal *acceptance* (3.2, 3.3)

Note 1 to entry: The ABCL shall identify the "as-manufactured" and "as-tested" statuses applicable to a part comprising a configuration item.

Note 2 to entry: Using the *configuration item data list* (3.56) as a reference, any difference between the ABCL and the *CIDL* (3.56) shall be documented in the ABCL with reference to the applicable NCR and *RFW* (3.200).

3.18
as-delivered configuration
as-built configuration (3.16) at the time of delivery

3.19
as-designed configuration
current *design* (3.82, 3.83) status at any point of time providing the complete definition of a *configuration item* (3.55)

Note 1 to entry: The starting point of the "as-designed" *configuration* (3.50) with regard to the "as-planned" configuration is based on *changes* (3.39) the company has approved internally but has not yet incorporated in the design, and on changes already implemented but not yet approved in the "as-planned" configuration.

3.20
as-ordered configuration
contractual configuration
configuration (3.50) of a *product* (3.173) *configuration item* (3.55), effectively given by its contractual approved *changes* (3.39) from the *configuration baseline* (3.51)

Note 1 to entry: At a given moment, a product may have several applicable configurations.

3.21
as-planned configuration
planned to be built statement for each *configuration item* (3.55) *unit* (3.93) being delivered

Note 1 to entry: The as-planned *configuration* (3.50) is composed of the current *configuration baseline* (3.51) and any *changes* (3.39) that the company has approved internally but has not yet embodied in the current configuration baseline.

3.22
as-qualified configuration
as-built configuration (3.16) that was certified to have satisfactorily passed specified *qualification tests* (3.187)

3.23
assembly
combination of parts, *components* (3.48) and *units* (3.93) that form a functional entity

[SOURCE: ISO 10786:2011, 3.5, modified — The definition has been editorially revised.]

3.24
assessment
systematic *process* (3.171) of collecting and analysing data to determine the current status of a *product* (3.173), a process, a *system* (3.234), a person or an *organization* (3.163)

3.25
assurance
planned and systematic activities implemented, and demonstrated as needed, to provide adequate confidence that an entity fulfils its *requirements* (3.201)

[SOURCE: EN 16601-00-01:2015, 2.3.13]

3.26
audit
systematic, independent and documented *process* (3.171) for obtaining objective evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled

Note 1 to entry: The fundamental elements of an audit include the determination of the *conformity* (3.60) of an object according to a *procedure* (3.170) carried out by personnel not being responsible for the object audited.

Note 2 to entry: An audit can be an internal audit (first party), or an external audit (second party or third party), and it can be a combined audit or a joint audit.

Note 3 to entry: Internal audits, sometimes called first-party audits, are conducted by, or on behalf of, the *organization* (3.163) itself for *management* (3.146) *review* (3.203) and other internal purposes, and can form the basis for an organization's declaration of conformity. Independence can be demonstrated by the freedom from responsibility for the activity being audited.

Note 4 to entry: External audits include those generally called second and third-party audits. Second party audits are conducted by parties having an interest in the organization, such as *customers* (3.78), or by other persons on their behalf. Third-party audits are conducted by external, independent auditing organizations such as those providing *certification* (3.37)/registration of conformity or governmental agencies.

Note 5 to entry: This constitutes one of the common terms and core definitions for ISO *management system* (3.147) *standards* (3.228) given in Annex SL of the Consolidated ISO Supplement to the ISO/IEC Directives, Part 1. The original definition and Notes to entry have been modified to remove effect of circularity between audit criteria and audit evidence term entries, and Notes 3 and 4 to entry have been added.

[SOURCE: ISO 9000:2015, 3.13.1]

3.27
authorization
permission granted to an operator by a responsible authority to perform specified space activities

Note 1 to entry: Space activities include conducting space operations, conducting *launch operations* (3.137), operating one or more sites, and operating one or more *space vehicles* (3.225) on or from one or more launch sites.

[SOURCE: ISO 14620-2:2011, 3.2]

3.28
availability
ability of an *item* (3.134) to be in a state to perform a required *function* (3.110) under given conditions at a given instant of time or over a given time interval, assuming that the required external resources are provided

Note 1 to entry: This ability depends on the combined aspects of the *reliability* (3.198) *performance* (3.166), the *maintainability* (3.144) performance and the *maintenance* (3.145) support performance.

Note 2 to entry: Required external resources, other than maintenance resources, do not affect the availability performance of the item.

Note 3 to entry: When referring to the measure for availability, the preferred term is "instantaneous availability".

[SOURCE: ISO 16091:2018, 3.1.1]

3.29
breadboard
physical *model* (3.155) designed to test functionality and tailored to the demonstration need

[SOURCE: ISO 16290:2013, 2.1]

3.30
breakdown structure
framework for efficiently controlling some aspect of the activities of a *programme* (3.177) or *project* (3.178)

[SOURCE: ISO 27026:2011, 3.1.1]

3.31
baseline
set of information which describes exhaustively a situation at a given instant of time or over a given time interval

Note 1 to entry: It is generally used as a reference for comparison with an *analysis* (3.12) of subsequent evolutions of the information.

[SOURCE: EN 16601-00-01:2015, 2.3.22]

3.32
business agreement
legally binding agreement, for the supply of goods or services, between two or more actors in the customer-supplier chain

Note 1 to entry: Business agreements are recorded in a variety of forms, such as

— contracts,

— memoranda of understanding,

— inter-governmental agreements,

— inter-agency agreements,

— partnerships,

— bartering agreements,

— purchase orders.

[SOURCE: EN 16601-00-01:2015, 2.3.25]

3.33
calibration
all operations for the purpose of determining the values of the *errors* (3.94) and, if necessary, other metrological properties of a measuring instrument

3.34
catastrophic
capable of causing death or major *system* (3.234) destruction

3.35
cause
circumstance, condition, event or *action* (3.9) that produces an effect or gives rise to any action, phenomenon or condition

Note 1 to entry: Cause and effect are correlative terms (Oxford English Dictionary).

Note 2 to entry: Specific to this document, cause, when used in the context of *hazard analysis* (3.121), is the action or condition by which a *hazardous event* (3.122) is initiated (an initiating event). The cause can arise as the result of *failure* (3.98), human *error* (3.94), *design* (3.82, 3.83) inadequacy, induced or natural *environment* (3.92), *system* (3.234) *configuration* (3.50) or operational mode(s).

3.36
caution condition
condition which has the potential to degrade into a warning condition, and which might require specific *action* (3.9), including the implementation of special *procedures* (3.170) or restrictions on the operation of the *system* (3.234)

[SOURCE: ISO 14620-1:2018, 3.1.3]

3.37
certification
procedure (3.170) by which a party gives formal assurance that a person or an *organization* (3.163) acts, or a *product* (3.173) is, in compliance with specified *requirements* (3.201)

Note 1 to entry: Certification can be carried out by a first, second or third party.

[SOURCE: EN 16601-00-01:2015, 2.3.29]

3.38
certificate of conformity
documented information that attests to *product* (3.173) *conformity* (3.60), conformance to defined *process* (3.171), *design* (3.82, 3.83), and *specification* (3.227) *requirements* (3.201)

3.39
change
official numerically issued alterations to a *document* (3.88) or any portion thereof, usually brought about by changed conditions or more complete information

Note 1 to entry: Such *correction* (3.67) may consist of requiring re-issuance and reprinting of the entire document, or an instruction to replace several pages with a later publication page. However, such documents must be revised.

Note 2 to entry: "Class 1" ("major" for *deviation* (3.86)) are changes that impact the contractual/technical agreement reached between the *contractor* (3.66) and the *customer* (3.78). It is necessary that such changes be submitted to the customer for *review* (3.203) and *approval* (3.15) before implementation.

Note 3 to entry: "Class 2" ("minor" for deviation) are changes that do not impact the customer *contract* (3.65) and that are necessary for the *project* (3.178) and its supply chain to meet the technical/contractual *requirements* (3.201) and *provisions* (3.181). Such changes can be implemented after configuration control board (CCB) approval.

[SOURCE: ISO 21886:2019, 3.7, modified — Note 1 to entry has been added; in Note 2 and 3 to entry, the words "for deviation" has been added.]

3.40
change request
document (3.88) containing a call for a *change* (3.39) of a *requirement* (3.201) of a *product* (3.173) or *process* (3.171)

Note 1 to entry: It is of great importance in the change *management* (3.146) process.

Note 2 to entry: A change request is declarative (i.e. it states what it is necessary to accomplish) but leaves out how the change should be carried out.

3.41
characteristic
distinguishing feature

Note 1 to entry: A characteristic can be inherent or assigned.

Note 2 to entry: A characteristic can be qualitative or quantitative.

Note 3 to entry: There are various classes of characteristic, such as the following:

a) physical (e.g. mechanical, electrical, chemical or biological characteristics);

b) sensory (e.g. related to smell, touch, taste, sight, hearing);

c) behavioural (e.g. courtesy, honesty, veracity);

d) temporal (e.g. punctuality, *reliability* (3.198), *availability* (3.28), continuity);

e) ergonomic (e.g. physiological characteristic, or related to human *safety* (3.210));

f) functional (e.g. maximum speed of an aircraft).

[SOURCE: ISO 9000:2015, 3.10.1]