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Space systems — Programme management and quality — Vocabulary

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National foreword

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Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
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Foreword

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ISO 10795 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 14, *Space systems and operations*.

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Introduction

It is intended that this International Standard be applied for the management, engineering, and product assurance in space projects and applications. The definitions in this International Standard 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 International Standard takes into account the existing International Standard prepared by ISO/TC 176.

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INTERNATIONAL STANDARD ISO 10795:2011(E)

Space systems — Programme management and quality — Vocabulary

Scope

This International Standard provides definitions of all common terms used in the area of space systems and operations. 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.

1 Terms and definitions

1.1 Acceptance

1.1.1
acceptance
⟨act⟩ raw, semi-finished or finished substance (gaseous, liquid, solid) of given characteristics from which processing into a **component** (1.43) or **part** (1.153) is undertaken

1.1.2
acceptance
⟨process⟩ part of the verification process, which demonstrates that the **product** (1.162) meets specified acceptance margins

1.2
acceptance criteria
minimum requirements that it is necessary for an item to satisfy for formal acceptance

1.3
accepted risk
hazard that has not been eliminated and for which the residual risk is deemed low enough to continue operation and that has been accepted by project/program management on the basis of documented risk acceptance rationale

1.4
acceptance test
test to determine that a system, subsystem, **component** (1.43), or functional part is capable of meeting performance requirements prescribed in a purchase specification or other **document** (1.81) specifying what constitutes the adequate performance capability for the **item** (1.121) and to demonstrate that the item is free from manufacturing defects

1.5
accident
undesired event arising from operation of any **project** (1.167) or specific **item** (1.121) that results in (a) human death or injury, (b) loss of, or damage to, project hardware, **software** (1.205) or facilities that can then affect the accomplishment of the **mission** (1.140), (c) loss of, or damage to, public or private property, or (d) detrimental effects on the **environment** (1.85)

NOTE Accident and mishap are synonymous.

[EN 13701:2001, 3.2]

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1.6
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 and due date

1.7
action item
assignment to a designated organization or individual the accomplishment of a defined objective within a specified time frame

1.8
alert
formal notification to users, informing them of a **failure** (1.91) or **nonconformity** (1.144) of an **item** (1.121), already released for use or not, that can also be present on other items already delivered (e.g. items with identical **design** (1.75) concept, **material** (1.135), **component** (1.43) or **process** (1.160)

NOTE An alert can also be raised when a deficiency in a specified **requirement** (1.190) that can affect the fitness for purpose in the defined application has been identified.

[EN 13701:2001, 3.4]

1.9
analysis
verification method utilizing techniques and tools such as math models, compilation similarity assessments, validation of records, etc., to confirm that verification requirements have been satisfied

1.10
anomaly
any gap between a current situation and an expected one

NOTE 1 An anomaly justifies an investigation that can lead to the discovery of a nonconformance, a defect or a “non-lieu” [deviation without impact, e.g. **product** (1.162) peculiarity].

NOTE 2 A deviation may be declared, foreseen or requested.

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

1.11
applicable document
document (1.81) that contains **provisions** (1.170) which, through reference in the source document, incorporates additional provisions in the source document

NOTE In this context, a provision is an expression that takes the form of a statement, an instruction, a recommendation or a requirement.

1.12
approval
formal agreement by a designated management official to use or apply an **item** (1.121) or proceed with a proposed course of action

NOTE 1 Approvals shall be documented.

NOTE 2 Approval implies that the approving authority has verified that the **item** (1.121) conforms to its **requirements** (1.190).

Adapted from EN 13701:2001, 3.8.

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1.13
as-built configuration
configuration of one **product** (1.162) item identified by its gaps of conformity with respect to its applicable configuration

NOTE 1 The relevant “as-designed configuration” corresponds to the same “part number”.

NOTE 2 “As-built configuration” includes any impacts from technical events, anomalies, repairs, life potential consumption that occurred before the **product** delivery and any potential modifications applied on the **product** but not embodied in the relevant design data file.

1.14
as-built configuration list
ABCL
reporting instrument defining the “as-built status” for each serial number of a configuration item subject to formal acceptance

NOTE 1 The ABCL shall identify the “as-manufactured” and “as-tested” statuses applicable to a part comprising a configuration item.

NOTE 2 Using the configuration item data list as a reference, any difference between the ABCL and the CIDL shall be documented in the ABCL with reference to the applicable NCR and RFW.

1.15
as-delivered configuration
as-built configuration at the time of delivery

1.16
as-designed configuration
current design status at any point of time providing the complete definition of a configuration item

NOTE The starting point of the “as-designed” configuration with regard to the “as-planned” configuration is based on changes 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.

1.17
as-ordered configuration
contractual configuration
configuration of a product configuration item, effectively given by its contractual approved changes from the configuration baseline

NOTE At a given moment, a **product** (1.162) may have several applicable configurations.

1.18
as-planned configuration
planned to be built statement for each configuration item unit being delivered

NOTE The as-planned configuration is composed of the current configuration baseline and any changes that the company has approved internally but has not yet embodied in the current configuration baseline.

1.19
as-qualified configuration
as-built configuration that was certified to have satisfactorily passed specified qualification tests

1.20
assembly
combination of **parts** (1.153), **components** (1.43) and units that form a functional entity

NOTE An assembly can be disassembled and retain its capabilities after reassembly.

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1.21
assessment
systematic process of collecting and analysing data to determine the current status of a **product** (1.162), a **process** (1.160), a **system** (1.221), a person or an **organization** (1.150)

1.22
audit
systematic, independent and documented **process** (1.160) for obtaining **audit evidence** (1.26) and evaluating it objectively to determine the extent to which **audit criteria** (1.25) are fulfilled

NOTE Internal audits, sometimes called first-party audits, are conducted by, or on behalf of, the **organization** (1.150) itself for internal purposes and can form the basis of the organization's self-declaration of **conformity** (1.55). External audits include what are generally termed “second-” or “third-party audits”. Second-party audits are conducted by parties having an interest in the organization, such as **customers** (1.71), or by other persons on their behalf. Third-party audits are conducted by external independent organizations. Such organizations provide certification or registration of **conformity** (1.55) with **requirements** (1.190) such as those of ISO 1401:1994. When **quality** (1.176) and environmental **management systems** (1.134) are audited together, this is termed “combined audit”. When two or more auditing organizations cooperate to audit a single auditee jointly, this is termed “joint audit”.

Adapted from ISO 9000:2005, 3.9.1.

1.23
audit client
organization (1.150) or person requesting an **audit** (1.22)

NOTE The audit client may be the auditee or any other **organization** (1.150) that has the regulatory or contractual right to request an audit.

[ISO 9000:2005, 3.9.7]

1.24
audit conclusion
outcome of an **audit** (1.22) provided by the audit team after consideration of the audit objectives and all **audit findings** (1.27)

[ISO 9000:2005, 3.9.6]

1.25
audit criteria
set of policies, **procedures** (1.159), or **requirements** (1.190) used as a reference

[ISO 9000:2005, 3.9.3]

1.26
audit evidence
records (1.184), statements of fact or other information which is relevant to the **audit criteria** (1.25) and verifiable

NOTE Audit evidence can be qualitative or quantitative.

[ISO 9000:2005, 3.9.4]

1.27
audit findings
results of the evaluation of the collected **audit evidence** (1.26) against **audit criteria** (1.25)

NOTE Audit findings can indicate either **conformity** (1.55) or **nonconformity** (1.144) with audit criteria, or opportunities for improvement.

[ISO 9000:2005, 3.9.5]

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1.28
availability of an item
ability to be in a state to perform as required, under given conditions, at a given instant, or over a given time interval

NOTE 1 The “given conditions” include the provision of necessary external resources.

NOTE 2 This ability depends on the combined aspects of the reliability and maintainability of the **item** (1.121), and the maintenance support performance or recoverability of the **item** (1.121).

NOTE 3 Availability may be quantified using appropriate measures.

1.29
baseline
set of information that describes exhaustively a situation at a given instant of time or over a given time interval

[EN 13701:2001, 3.13]

NOTE It is generally used as a reference for comparison with an analysis of subsequent evolutions of the information.

1.30
business agreement
legally binding agreement, for the supply of goods or services, between two or more actors in the customer-supplier chain

NOTE Business agreements are recorded in a variety of forms, such as

— **contracts** (1.60),

— memoranda of understanding,

— inter-governmental agreements,

— inter-agency agreements,

— partnerships,

— bartering agreements,

— purchase orders.

1.31
calibration
all the operations for the purpose of determining the values of the **errors** (1.87) and, if necessary, other metrological properties of a measuring instrument

NOTE The metrological use of the term “calibration” is often extended to include operations such as adjustments, scale graduation, etc. This use is deprecated.

[IEC Multilingual Dictionary: 2001 edition]

1.32
catastrophic
capable of causing death or major system destruction

1.33
certificate of compliance
signed formal declaration that states that all actions relating to safety and interface verification that the user is required to complete prior to turnover have been accomplished

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1.34
certification procedure
written assurance by a third party that a **product** (1.162), **process** (1.160) or service conforms to specified **requirements** (1.190)

1.35
change
official numerically issued alterations to a **document** (1.81) or any portion thereof, usually brought about by changed conditions or more complete information

NOTE 1 Such a correction is not extensive enough to require retying and reprinting of the entire **document** (1.81) and usually consists of an instruction to replace a few pages with those of a later issue. Documents of 10 or fewer pages are revised, not changed.

NOTE 2 "Class 1" ("major" for deviation) are changes that impact the contractual/technical agreement reached between the **project** (1.167) and its customer. It is necessary that such changes be submitted to the customer for review and approval before implementation.

NOTE 3 "Class 2" ("minor" for deviation) are changes that do not impact the customer **contract** (1.60) and that are necessary for the **project** (1.167) and its supply chain to meet the technical/contractual requirements and provisions. Such changes can be implemented after CCB approval.

1.36
change request
document (1.81) containing a call for an adjustment of a system

NOTE 1 It is of great importance in the change management process.

NOTE 2 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.

1.37
characteristic
distinguishing feature

NOTE 1 A characteristic can be inherent or assigned.

NOTE 2 A characteristic can be qualitative or quantitative.

NOTE 3 There are various classes of characteristic, such as the following:

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

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

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

— temporal [e.g. punctuality, **reliability** (1.187), **availability** (1.28)];

— ergonomic [e.g. physiological characteristic, or related to human **safety** (1.198)];

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

[ISO 9000:2005, 3.5.1]

1.38
clean room
clean area controlled according to specified levels

NOTE Levels specified include humidity, temperature, particulates number versus size and volume and chemical contamination.

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1.39
common-cause failure
⟨within a system⟩ multiple **failures** (1.91) related to a single cause or causal event

NOTE 1 It is generally accepted that the **failures** (1.91) occur simultaneously or within a short time of each other.

NOTE 2 Common-cause failures can also be common-mode failures.

NOTE 3 Common-cause failures reduce the effect of system redundancy.

1.40
common-mode failure
⟨within a system⟩ multiple **failures** (1.91) that occur in the same way

NOTE 1 Common-mode failures can have different causes.

NOTE 2 Common-mode failures can also be common-cause failures (1.91).

1.41
common-mode fault
fault (1.94) of multiple **items** (1.121) that exhibit the same fault mode

[EN 13701:2001, 3.21]

1.42
competence
demonstrated ability to apply knowledge and skills

NOTE 1 Technical competence is defined by the know-how, such as working practices, special skills (“tours de main”), mastery of technology, etc.

NOTE 2 Cognitive competence is knowledge, such as specific fundamental knowledge, scientific “capital”, expertise in a domain, history, etc.

NOTE 3 Methodological competence is defined by the working methods, such as problem solving, manner of decision.

NOTE 4 Experimental competence is the experience related to relations with different interlocutors (e.g. customer relations), to participation, to events, to “personal” actions, etc.

[ISO 9000:2005, 3.9.14]

1.43
component
part
set of materials, assembled according to defined and controlled processes, which cannot be disassembled without destroying its capability and which performs a simple **function** (1.102) that can be evaluated against expected performance requirements

NOTE 1 The term “part” is preferred when referring to purely mechanical devices.

NOTE 2 The term “component” is preferred for EEE devices.

1.44
concession
permission to use or release a **product** (1.162) that does not conform to specified **requirements** (1.190)

NOTE 1 The concession can impose limitations on the use of the concessed product: a concession is generally limited to the delivery of a **product** (1.162) that has nonconforming characteristics within specified limits for an agreed period of time or quantity of that **product** (1.162).

NOTE 2 The “deviation” is an anterior decision whereas the “waiver” is a posterior decision with respect to production phase.

NOTE 3 A concession is part of the **product** (1.162) as-built configuration and does not affect the configuration baselines.

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NOTE 4 The inability to meet the required **product** (1.162) characteristics is documented through the concession after the manufacturing phase.

1.45
configuration
interrelated functional and physical characteristics of a **product** (1.162) (hardware/software) defined in configuration documents subject to configuration management

1.46
configuration baseline
approved status of requirements and design of a **product** (1.162) at project key milestone that serves as reference for activities throughout the **life cycle** (1.128) of the **product** (1.162)

Adapted from ISO 10007:2003, 3.4.

1.47
configuration control
coordinated activities for controlling modifications to a **configuration baseline** (1.46)

NOTE Request for deviations are also considered modifications to a baseline.

1.48
configuration document
document (1.81) that defines the **requirements** (1.190) for **function** (1.102), **design** (1.75), build, production, and **verification** (1.229) for a **configuration item** (1.50)

NOTE For space **standards** (1.215), configuration documents can include documents relating to operation and disposal of the configuration item.

1.49
configuration identification
coordinated activities to establish rules for **configuration item** (1.50) selection, **configuration baseline** (1.46) content definition, and **product** (1.162) and **document** (1.81) identifiers definition

1.50
configuration item
aggregation of hardware, **software** (1.205), processed **materials** (1.135), services or any of its discrete portions, that is designated for **configuration management** (1.52) and treated as a single entity in the configuration management **process** (1.160)

NOTE A configuration item can contain other configuration item(s).

1.51
configuration item data list
CIDL
document (1.81) generated from the central configuration database giving the current design status of a configuration item at a given point of time in sufficient detail and/or providing its complete definition

NOTE A CIDL includes the list of applicable changes not yet incorporated into the baseline documentation and deviations.

1.52
configuration management
activity for establishing and maintaining consistent records of the status of and changes to the performance parameters of a **product** (1.162) and its functional and physical attributes compared to **product** (1.162) design and operational requirements

NOTE Configuration management is applied throughout the entire **life cycle** (1.128) of the **product** (1.162) (i.e. development, production, deployment, operation and disposal).

Adapted from ISO 10007:2003, 3.6.

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1.53
configuration status accounting
formalized recording and reporting of **product** (1.162) characteristics and configuration information, the status of applicable changes and the status of their implementation

Adapted from ISO 10007:2003, 3.7.

1.54
configuration verification
coordinated activities to determine the conformity of the **configuration item** (1.50) to its **configuration document(s)** (1.48)

1.55
conformity
conformance (deprecated)
fulfilment of a **requirement** (1.190)

NOTE This definition is consistent with ISO/IEC Guide 2 but differs from it in phrasing to fit into the ISO 9000 concepts.

[ISO 9000:2005, 3.6.1]

1.56
constraint
characteristic, result or design feature that is made compulsory or has been prohibited for some reason

NOTE 1 Constraints are generally restrictions on the choice of solutions in a **system** (1.221).

NOTE 2 Two kinds of constraints are considered: those that concern solutions and those that concern the use of the system.

EXAMPLE Constraints can come from environmental and operational conditions, law, **standards** (1.215), market demand, investments and means availability, or the organization's policy.

Adapted from EN 1325-1:1997, 3.1.7.

1.57
contamination
introduction of any undesirable molecular or particulate matter (including microbiological matter) into an **item** (1.121) or into the environment of interest

1.58
contingency procedure
pre-planned **procedure** (1.159) for execution in response to a departure from specified behavior

[EN 13701:2001, 3.31]

1.59
continual improvement
recurring activity to increase the ability to fulfil **requirements** (1.190)

NOTE The **process** (1.160) of establishing objectives and finding opportunities for improvement is a continual process through the use of **audit findings** (1.27) and **audit conclusions** (1.24), analysis of data, management reviews or other means and generally leads to **corrective action** (1.63) or **preventive action** (1.158).

[ISO 9000:2005, 3.2.13]

1.60
contract
legally enforceable business agreement for the supply of goods or services

NOTE A contract is a special case of a business agreement in which payment is associated with the contract conditions.

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1.61
contractor
supplier (1.219) in a contractual situation

1.62
correction
action to eliminate a detected **nonconformity** (1.144)

NOTE A correction can be made in conjunction with a **corrective action** (1.63).

EXAMPLE **Rework** (1.193) or regrade.

[ISO 9000:2005, 3.6.6]

1.63
corrective action
action to eliminate the cause of a detected **nonconformity** (1.144) or other undesirable situation

NOTE 1 There can be more than one cause for a nonconformity.

NOTE 2 Corrective action is taken to prevent recurrence whereas **preventive action** (1.158) is taken to prevent occurrence.

NOTE 3 There is a distinction between **correction** (1.62) and corrective action.

[ISO 9000:2005, 3.6.5]

1.64
cost breakdown structure
hierarchical structure that depicts elements of cost

1.65
critical
capable of causing severe injury, severe illness, or major property damage

1.66
critical characteristics
any physical attribute of an article or material that, if defective, can cause loss of life or equipment, or make the article or material non-functional

1.67
critical design review
CDR
review performed prior to fabrication of prototype and after completion of the critical design

NOTE In the review, drawing specifications and test result of the engineering model are evaluated to confirm that the result of the critical design satisfies the requirements of the **contracts** (1.60) and technical specifications to allow proceeding with prototype production phase.

1.68
critical hazard
any hazard that can cause a nondisabling injury, severe occupational illness, loss of an emergency system, or that requires the use of emergency procedures, or involves major damage to one of the following: the launch or servicing vehicle, manned base, an on-orbit life-sustaining function, a ground facility, or any critical support equipment

1.69
critical item
item that can pose a potential threat to the schedule, cost, performance and quality of a **project** (1.167) or programme that is controlled by a specific action plan in order to mitigate emanating risks and to prevent undesirable consequences

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NOTE Examples of critical items are:

— an item not qualified or validated for the application in question (or that has previously caused problems that remain unresolved);

— an item difficult to demonstrate design performance;

— an item highly sensitive to the conditions under which it is produced or used (e.g. contamination, radiation);

— an item having the potential to degrade the quality of the **product** (1.162) significantly, and hence the ability of the end-product to accomplish defined mission objectives;

— an item for which major difficulties or uncertainties are expected in the procurement, manufacturing, assembly, inspection, test, handling, storage and transportation that can have the potential to lead to a major degradation in the quality of the **product** (1.162).

1.70
critical path
series of activities that determine the earliest completion of the **project** (1.167)

NOTE As a consequence, delay of any one task belonging to the critical path extends the **project** (1.167) duration.

1.71
customer
organization (1.150), legal entity or person that receives a **product** (1.162) as part of a business agreement

EXAMPLE Consumer, client, end-user, retailer, beneficiary and **purchaser** (1.171).

NOTE 1 A customer can be internal or external to the **organization** (1.150).

NOTE 2 The “customer”, as a physical or moral person for the account of which the programme or **project** (1.167) is realized, also called “owner” or “contracting authority”, is the responsible actor in the acquisition network for defining the requirements (specified in technical and contractual terms) and for the control of the realisation entrusted to a prime contractor in order to respect the contractual objectives in terms of performance, costs and due dates.

1.72
defect
non-fulfilment of a **requirement** (1.190) related to an intended or specified use

NOTE 1 The distinction between the concepts of defect and **nonconformity** (1.144) is important as it has legal connotations, particularly those associated with **product** (1.162) liability issues. Consequently, the term “defect” should be used with extreme caution.

NOTE 2 The use as intended by the **customer** (1.71) can be affected by the nature of the information, such as operating or maintenance instructions, provided by the **supplier** (1.219).

[ISO 9000:2005, 3.6.3]

1.73
dependability
〈of an item〉 ability to perform as and when required

NOTE 1 Dependability characteristics include availability and its inherent or external influencing factors, such as: reliability, fault tolerance, recoverability, integrity, security, maintainability, durability, and maintenance support.

NOTE 2 Dependability is also used descriptively as an umbrella term for the time-related quality characteristics of a **product** (1.162) or service, and it may also be expressed as a grade, degree, confidence or probability of fulfilling a defined set of characteristics.

NOTE 3 Specifications for dependability characteristics typically include the **function** (1.102) the **product** (1.162) is required to perform; the time for which it is required that that performance be sustained; and the conditions of storage, use and maintenance. Requirements for safety, efficiency and economy throughout the **life cycle** (1.128) may also be included.

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1.74
derating
designed reduction of stress from the rated value to enhance reliability

1.75
design, noun
⟨result⟩ set of information that defines the **characteristics** (1.37) of a **product** (1.162)

Adapted from EN 13701:2001, 3.44.

1.76
design, noun
⟨activity⟩ **process** (1.160) used to generate the set of information defining the **characteristics** (1.37) of a **product** (1.162)

Adapted from EN 13701:2001, 3.45.

1.77
design review
formal, independent examination of a design to identify shortcomings that could affect the fitness for purpose, reliability, maintainability or maintenance support requirements of the **item** (1.121) concerned

NOTE 1 In this context, “design” includes requirements, specifications, drawings, and supporting documentation.

NOTE 2 Design review is not, by itself, sufficient to ensure the adequacy of the emerging design.

1.78
development
process (1.160) by which the capability to adequately implement a technology or **design** (1.75) is established before manufacture

NOTE This process can include the building of various partial or complete **models** (1.141) of the **products** (1.162) and assessment of their **performance** (1.155).

[EN 13701:2001, 3.47]

1.79
deviation
formal authorization to depart from the originally specified requirements for a **product** (1.162), prior to its production

NOTE 1 “Waiver” is a posterior decision whereas “deviation” is an anterior decision with respect to production phase.

NOTE 2 Permission to use or release a product that does not conform to specified requirements.

1.80
discrepancy
departures from expected performance

NOTE They can be the result of nonconforming hardware and/or software, or conditions occurring in test set-up. These differences from expected performance levels can be momentary, non-repeatable, or permanent.

1.81
document
information and its supporting medium

EXAMPLES **Record** (1.184), **specification** (1.214), procedure document, drawing, report, **standard** (1.215).

NOTE 1 The medium can be paper, magnetic, electronic or optical computer disc, photograph or master sample, or a combination thereof.

NOTE 2 A set of documents, for example specifications and records, is frequently called “documentation”.

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NOTE 3 Some **requirements** (1.190) (e.g. the requirement of readability) relate to all types of documents, however there can be different requirements for specifications (e.g. the requirement that they be revision controllable) and records (e.g. the requirement that they be retrievable).

[ISO 9000:2005, 3.7.2]

1.82
documentation
one mode of information communication

NOTE This includes management and technical data current as of a given point in time and may be used to reflect contractor to customer and/or contractor to contractor agreements and procedures. This includes such items as program plans, procedures, specifications, ICDs, reports, technical publications, training documentation.

[SSP 30534]

1.83
EEE component
EEE part
device that performs an electrical, electronic or electromechanical **function** (1.102) and consists of one or more elements so joined together that they cannot normally be disassembled without destroying this capability

[EN 13701:2001, 3.51]

1.84
end item
combination of **parts** (1.153), assemblies, accessories, and/or attachments integrated to form an equipment unit that can accomplish a specific **function** (1.102) when used

NOTE An end item is complete within itself and classified as such for purposes of separate manufacture, procurement, drawings, specification, storage, issue, maintenance, or use.

1.85
environment
natural conditions and induced conditions that constrain the design definitions or operations for end products and their enabling products

NOTE 1 Examples of natural conditions are weather, climate, ocean conditions, terrain, vegetation, dust, light and radiation.

NOTE 2 Examples of induced conditions are electromagnetic interference, heat, vibration, pollution and contamination.

1.86
equipment
unit
integrated set of **parts** (1.153) and **components** (1.43)

NOTE 1 An equipment accomplishes a specific **function** (1.102).

NOTE 2 An equipment is self-contained and classified as such for the purposes of separate manufacture, procurement, drawings, specification, storage, issue, maintenance, or use.

1.87
error
discrepancy between a computed, observed or measured value or condition and the true, specified or theoretically correct value or condition

NOTE An error can be caused by a faulty **item** (1.121), e.g. a computing error made by faulty computer **equipment** (1.86).

[IEC Multilingual Dictionary: 2001 edition]

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1.88
estimate at completion
sum of costs incurred up to the cut-off date and the respective **estimate to completion** (1.89)

Adapted from EN 13701:2001, 3.57.

1.89
estimate to completion
estimate of all costs from the cut-off date required to deliver the **product** (1.162), based on work to be completed, and approved anticipated **contract** (1.60) changes

Adapted from EN 13701:2001, 3.58.

1.90
evaluation
systematic process of determining how well individuals, procedures, systems or programs have met formally agreed objectives and requirements

1.91
failure
〈of an item〉 loss of ability to perform as required

NOTE 1 When the loss of ability is caused by a pre-existing condition, the failure occurs when a particular set of circumstances is encountered.

NOTE 2 A failure of an **item** (1.121) is an event, as distinct from a fault of an item, which is a state.

NOTE 3 Qualifiers may be used to classify failures according to the severity of consequences, such as catastrophic, critical, major, minor, marginal and insignificant, the definitions depending upon the field of application.

1.92
failure mode
fault mode (deprecated in this sense) manner in which **failure** (1.91) occurs

NOTE A failure mode may be defined by the **function** (1.102) lost or the state transition that occurred.

1.93
failure tolerance
attribute of an **item** (1.121) that makes it able to perform a required **function** (1.102) in the presence of certain given sub-item **failures** (1.91)

1.94
fault, noun
state of an **item** (1.121) characterized by inability to perform as required, excluding the inability during preventative maintenance or other planned actions, or due to lack of external resources

NOTE A fault is often the result of a **failure** (1.91) of the **item** (1.121) itself, but can exist without prior **failure** (1.91).

Adapted from IEC Multilingual Dictionary: 2001 edition.

1.95
fault, noun
unplanned occurrence or **defect** (1.72) in an **item** (1.121) that can result in one or more **failures** (1.91) of the **item** (1.121) itself or of other associated **equipment** (1.86)

[IEC Multilingual Dictionary: 2001 edition]

NOTE An **item** (1.121) can contain a sub-element fault, which is a defect that can manifest itself only under certain circumstances. When those circumstances occur, the defect in the sub-element causes the item to fail, resulting in an **error** (1.87). This error can propagate to other items causing them, in turn, to fail. After the **failure** (1.91) occurs, the item as a whole is said to have a fault or to be in a faulty state.

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1.96
fault tolerance
⟨design property of a system⟩ fault masking (deprecated in this sense) ability to continue functioning with certain faults present

NOTE In French, the adjective “fault tolerant” is used in this sense.

1.97
fault tree analysis
FTA
analysis using logic diagram showing the faults of sub-items, external events, or combinations thereof, that result in a predefined, undesired event

1.98
firmware
hardware that contains a computer program or data that cannot be changed in its user **environment** (1.85)

NOTE The computer program and data contained in firmware are classified as **software** (1.205); the circuitry containing the computer program and data is classified as hardware.

1.99
flammability
measure of the ease with which a material is set on fire

1.100
flashpoint
lowest temperature at which a material gives off flammable vapour that, when mixed with the test atmosphere and exposed to an ignition source, provides a non-self-sustaining flash

1.101
flight operations
all activities related to the planning, execution and evaluation of the control of the space segment (or subsets thereof) when in orbit

1.102
function
intended effect of a **system** (1.221), **subsystem** (1.218), **product** (1.162) or **part** (1.153)

Adapted from EN 1325-1:1997, 3.3.1.

1.103
function tree
hierarchical decomposition of the system performances into **functions** (1.102) and sub-functions that, when all are fulfilled, completes the overall system mission

1.104
functional analysis
technique of identifying and describing all **functions** (1.102) of a **system** (1.221)

Adapted from EN 1325-1:1997, 3.3.2.

1.105
functional verification
task of assuring that hardware or software functions as per the design requirements

1.106
ground operations
all activities related to the planning, execution and evaluation of the control of the ground segment (or subsets thereof) facility

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1.107
ground support equipment
GSE
contract (1.60) deliverable equipment (hardware/software) used on the ground to test, transport, access, handle, maintain, measure, calibrate, verify, service and protect flight hardware/software

1.108
ground systems
all ground infrastructure elements that are used to support the preparation activities leading up to mission operations, the conduct of mission operations and all post-operational activities

1.109
hardware
H/W
items of identifiable equipment including piece **parts** (1.153), **components** (1.43), assemblies, subsystems and systems

1.110
hazard
existing or potential condition of an **item** (1.121) that can result in an **accident** (1.5)

NOTE 1 This condition can be associated with the design, fabrication, operation or environment of the item, and has the potential for accidents.

NOTE 2 "Items" can include human beings.

Adapted from ISO 14620-2:2000, 3.9.

1.111
hazard analysis
determination of potential sources of danger, causes, effects, hazard level, and recommended resolution for those conditions found in either the hardware/software system, the person-machine relationship, or both, that can cause loss of personnel capability, loss of system, or loss of life/injury to the public

1.112
hazardous event
occurrence leading to undesired consequences and arising from the triggering by one (or more) initiator events of one (or more) **hazards** (1.110)

1.113
incident
unplanned event that could have been an **accident** (1.5) but was not

[EN 13701:2001, 3.71]

1.114
infrastructure
organization **system** (1.221) of facilities, **equipment** (1.86) and services needed for the operation of an **organization** (1.150)

[ISO 9000:2005, 3.3.3]

1.115
inspection
conformity evaluation by observation and judgement accompanied as appropriate by measurement, testing or gauging

[ISO 9000:2005, 3.8.2]

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1.116
integrate logistic support
ILS
coordinated and interactive set of technical and management tasks whose objectives are the following:

— to express the requirement in logistics support and the environmental constraints of use in the expression of operational requirement;

— to contribute to obtaining a system definition including the support elements:

  — allowing the optimization and maintenance of its effectiveness for all its life time, in consistency with the user resources,

  — allowing total optimization of performance/costs/schedules;

— to realize, set up and to renew the support elements, according to the exploitation and the maintenance requirements

1.117
integration
process of physically and functionally combining lower-level products (hardware or software) to obtain a particular functional configuration

1.118
interchangeability
situation when two or more **items** (1.121) possess such functional and physical characteristics as to be equivalent in performance and durability and capable of being exchanged one for another without alteration of the items themselves or adjoining items except for adjustment and without selection for fit or performance

NOTE Functional and physical characteristics that constitute interchangeability are as follows.

— It is necessary that items have the same design envelope and have no use limitations imposed.

— It is necessary that items utilize the same attachments, mountings, or mating surfaces.

— It is necessary that attachments, connectors, wiring, GSE, and tubing be the same to the extent that no rework is required on installation.

— It is necessary that items meet all baseline design requirements for performance. Performance or durability design requirements include the same safety, strength, electrical, mechanical, reliability, maintainability, tolerance, balance and mass requirements.

— It is necessary that items have the same adjustments, testing, operation, and maintenance requirements and the same design to the extent that the same test procedures, specifications, and operating procedures may be utilized.

1.119
interchangeable
any **item** (1.121) that has identical external form, fit, and **function** (1.102) with another item, allowing its use as a replacement

1.120
interface
I/F
mechanical, thermal, electrical, or operational common boundary between two elements of a system

1.121
item
any node of a product breakdown structure

NOTE 1 Any part, **component** (1.43) device, subsystem, functional unit, equipment or system that can be individually considered.

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NOTE 2 An item can be considered either as a “product” or a “component” on a “product breakdown structure” of more than two levels of decomposition. Items are designated “products” when described as being decomposed and designated “components” when described as decompositions.

1.122
launch campaign
launch activities that include launcher preparation and final integration, payload processing and integration on the launcher, and launch operations including flight data gathering

1.123
launch operations
all launching related activities taking place after completion of the activities necessary to deliver a fully integrated launcher up to reception of post-flight data

1.124
launch segment
part of a space system that is used to transport space segment element(s) into space

NOTE 1 A launch segment is composed of one or more launch segment elements.

NOTE 2 A launch segment is composed of the integrated launcher and needed facilities for manufacturing, testing and delivering launcher elements.

1.125
launch vehicle

See **launcher** (1.126)

1.126
launcher
system that ensures the transport of a payload into space orbit

1.127
launcher stage
complete element of a launcher that delivers the defined thrust during dedicated phase of the launcher mission

NOTE 1 A launcher stage typically consists of a main propulsion system, a reaction controlled system (sometimes integrated to some extent with the main propulsion system), supporting structure, forward and aft skirts, aerodynamic control and/or stabilized surfaces, a separation system and a destruction system.

NOTE 2 Some of the upper stages are also equipped with an avionics system.

1.128
life cycle
all the phases of acquisition, operation and logistic support of an **item** (1.121) beginning with requirement identification through disposal of the item

1.129
life cycle cost
total cost estimated and eventually incurred in connection with a system during its acquisition, operation, maintenance, and disposal

NOTE Can also be referred to as the total cost of ownership.

Adapted from EN 13701:2001, 3.78.

1.130
lifetime
period over which any of the **item** (1.121) properties are required to be within defined limits

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1.131
maintainability
⟨of an item⟩ ability to be retained in, or restored to a state in which it can perform as required, under given conditions of use and maintenance

NOTE 1 Given conditions of use may include storage.

NOTE 2 Given conditions of maintenance include the procedures and resources for use.

NOTE 3 Maintainability may be quantified using such measures as mean time to restoration, or the probability of restoration within a specified period of time.

1.132
maintenance
combination of all technical and administrative actions intended to retain an **item** (1.121) in, or restore it to, a state in which it can perform as required

NOTE Maintenance includes management and supervision activities for support.

1.133
management
coordinated activities to direct and control an **organization** (1.150)

NOTE In English, the term “management” sometimes refers to people (i.e. a person or group of people) with authority and responsibility for the conduct and control of an organization. When “management” is used in this sense it should always be used with some form of qualifier to avoid confusion with the concept “management” defined above. For example, “management shall” is deprecated, whereas **“**top management shall” is acceptable.

[ISO 9000:2005, 3.2.6]

1.134
management system
system (1.221) to establish policy and objectives and to achieve those objectives

NOTE A management system of an **organization** (1.150) can include different management systems, such as a quality management system, a financial management system or an environmental management system.

[ISO 9000:2005, 3.2.2]

1.135
material
raw, semi-finished or finished purchased item (gaseous, liquid, solid) of given characteristics from which processing into a functional element of the **product** (1.162) is undertaken

[EN 13701:2001, 3.81]

1.136
mean time between failures
MTBF
expected value of the operating time between **failures** (1.91)

NOTE 1 “Time” is generic, and should be expressed in units appropriate to the **item** (1.121) concerned, e.g. calendar time, operating time, operating cycles, distance run, etc., and the units should always be clearly stated.

NOTE 2 The practice of replacing the “T” with “D” for distance, or “K” for kilometres, etc., is deprecated.

1.137
measurement management system
set of interrelated or interacting elements necessary to achieve metrological confirmation and continual control of measurement processes

[ISO 9000:2005, 3.10.1]

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1.138
measuring equipment
measuring instrument, **software** (1.205), measurement **standard** (1.215), reference **material** (1.135), or auxiliary apparatus or combination thereof necessary to realize a measurement process

[ISO 9000:2005, 3.10.4]

1.139
mechanical part
piece of hardware that is not electrical, electronic or electromechanical, and that performs a simple elementary **function** (1.102) or part of a function in such a way that it can be evaluated as a whole against expected requirements of **performance** (1.155) and cannot be disassembled without destroying this capability

[EN 13701:2001, 3.84]

1.140
mission
specific task, duty or **function** (1.102) defined for accomplishment by a **system** (1.221)

[EN 13701:2001, 3.86]

1.141
model
physical or abstract representation of relevant aspects of an **item** (1.121) or **process** (1.160) that is put forward as a basis for calculations, predictions, or further assessment

[Oxford English Dictionary]

NOTE The term “model” can also be used to identify particular instances of the **product** (1.162), e.g. flight model.

1.142
modification
scheduled replacement of an **item** (1.121) with an item of a different configuration (new or modified)

NOTE This type of maintenance is accomplished during transfer periods for mission and safety items.

1.143
non-conformance

See **nonconformity** (1.144).

1.144
nonconformity
non-fulfilment of a requirement

[ISO 9000:2005, 3.6.2]

1.145
normative document
document (1.81) that provides rules, guidelines or **characteristics** (1.37) for activities or their results

NOTE The term “normative document” is a generic term that covers such documents as **standards** (1.215), technical **specifications** (1.214), codes of practice and regulations.

Adapted from EN 45020:2004, 3.1.

1.146
normative reference
reference which incorporates **provisions** (1.170) from a cited publication into a **normative document** (1.145)

Adapted from EN 13701:2001, 3.92.

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1.147
off-the-shelf
OTS
existing item that has been developed for a specific application and is intended for use in another application

1.148
operating cycles
cumulative number of times an **item** (1.121) completes a sequence of activation and returns to its initial state

1.149
operating life
maximum operating time or cycles that an **item** (1.121) can accrue before replacement or refurbishment without risk of degradation of performance beyond acceptable limits

1.150
organization
group of people and facilities with an arrangement of responsibilities, authorities and relationships

EXAMPLES Company, corporation, firm, enterprise, institution, charity, sole trader, association, **project** (1.167) or **parts** (1.153), or combination thereof.

NOTE 1 The arrangement is generally orderly.

NOTE 2 An organization can be public or private.

NOTE 3 This definition is valid for the purposes of quality management system standards. The term “organization” is defined differently in ISO/IEC Guide 2.

[ISO 9000:2005, 3.3.1]

1.151
organizational structure
arrangement of responsibilities, authorities and relationships between people

Adapted from ISO 9000:2005, 3.3.2.

1.152
original budget
budget established at, or near, the time the **contract** (1.60) was signed, based on the negotiated contract cost

1.153
part

See **component** (1.43).

1.154
payload
P/L
set of space segment elements (parts of a space system, placed in space, to fulfil the space mission objectives)

NOTE 1 A spacecraft payload is a set of instruments or equipment that performs the user mission.

NOTE 2 A launcher payload is a set of space segment elements carried into space in accordance with agreed position, time and environmental conditions.

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1.155
performance
aspects of an **item** (1.121) observed or measured from its operation or **function** (1.102)

NOTE These aspects are generally quantified.

Adapted from EN 13701:2001, 3.95.

1.156
preliminary design review
review performed prior to critical design but after preliminary design

NOTE The review shall confirm that the **products** (1.162), the results of the preliminary design that satisfy the system or development specifications, can be materialized and transferred to the critical design phase.

1.157
preliminary hazard analysis
PHA
analysis technique for performing an initial risk assessment of a concept of a system to identify safety-critical areas, evaluate hazards, and to identify the safety design requirements required in the project

1.158
preventive action
action to eliminate the cause of a potential **nonconformity** (1.144), or other undesirable potential situation

NOTE 1 There can be more than one cause for a potential nonconformity.

NOTE 2 Preventive action is taken to prevent occurrence whereas **corrective action** (1.63) is taken to prevent recurrence.

[ISO 9000:2005, 3.6.4]

1.159
procedure
specified way to carry out an activity or **process** (1.160)

NOTE 1 Procedures can be documented or not.

NOTE 2 When a procedure is documented, the term “written procedure” or “documented procedure” is frequently used. The **document** (1.81) that contains a procedure can be called a “procedure document”.

[ISO 9000:2005, 3.4.5]

1.160
process
set of interrelated or interacting activities that transform inputs into outputs

NOTE 1 Inputs to a process are generally outputs of other processes.

NOTE 2 Processes in an **organization** (1.150) are generally planned and carried out under controlled conditions to add value.

NOTE 3 A process where the **conformity** (1.55) of the resulting **product** (1.162) cannot be readily or economically verified is frequently referred to as a “special process”.

[ISO 9000:2005, 3.4.1]

1.161
procurement document
document such as a purchase order, subcontract, statement of work, technical specifications, and interoperate work order required to define articles, materials and services being procured and the terms and conditions imposed

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1.162
product
result of a **process** (1.160)

NOTE 1 There are four generic product categories, as follows:

— services (e.g. transport);

— software (e.g. computer program, dictionary);

— hardware [e.g. engine **mechanical part** (1.139)];

— processed **materials** (1.135) (e.g. lubricant).

Many products are comprised of elements belonging to different generic product categories. Whether the product is then called service, software, hardware or processed material depends on the dominant element.

EXAMPLE The offered product “automobile” consists of hardware (e.g. tyres), processed materials (e.g. fuel, cooling liquid), software (e.g. engine control software, driver's manual), and service (e.g. operating explanations given by the salesman).

NOTE 2 Service is the result of at least one activity necessarily performed at the interface between the **supplier** (1.219) and **customer** (1.71) and is generally intangible. Provision of a service can involve, for example,

— an activity performed on a customer-supplied tangible product (e.g. automobile to be repaired);

— an activity performed on a customer-supplied intangible product (e.g. the income statement required to prepare a tax return);

— the delivery of an intangible product (e.g. the delivery of information in the context of knowledge transmission);

— the creation of ambience for the customer (e.g. in hotels and restaurants).

Software consists of information, is generally intangible and can be in the form of approaches, transactions or **procedures** (1.159). Hardware is generally tangible and its amount is a countable **characteristic** (1.37). Processed materials are generally tangible and their amount is a continuous characteristic. Hardware and processed materials often are referred to as goods.

NOTE 3 **Quality assurance** (1.177) is mainly focused on intended product.

[ISO 9000:2005, 3.4.2]

1.163
product assurance
discipline devoted to the study, planning and implementation of activities intended to assure that the **design** (1.75), controls, methods, and techniques in a **project** (1.167) result in a satisfactory degree of **quality** (1.176) in a **product** (1.162)

[EN 13701:2001, 3.102]

1.164
product state
particular **configuration** (1.45) of the **product** (1.162) related to the current **configuration baseline** (1.46)

[EN 13701:2001, 3.103]

1.165
product tree
hierarchical structure depicting the **product** (1.162) orientated breakdown of the **project** (1.167) into successive levels of detail down to the configuration items necessary to deliver the required functions

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1.166
programme
group of **projects** (1.167) managed in a coordinated way to obtain benefits not available from managing them individually

[PMI Institute]

1.167
project
set of coordinated and controlled activities with start and finish dates, undertaken to achieve an objective conforming to specific **requirements** (1.190), including constraints of time, cost, and resources

NOTE 1 An individual project can form part of a larger project structure.

NOTE 2 In some projects, the objectives are refined and the product **characteristics** (1.37) defined progressively as the project proceeds.

NOTE 3 The outcome of a project may be one or several units of a **product** (1.162).

[ISO 9000:2005, 3.4.3, as adapted from ISO 10006:2003, 3.5]

1.168
project phase
part of a total **project** (1.167) during which activities are performed to attain a designated objective as one of a series of distinct steps in carrying out a project that together constitute the project **life cycle** (1.128)

1.169
project requirements document
document (1.81), including all **normative references** (1.146), that establishes **requirements** (1.190)

NOTE 1 Examples of a project requirements document include **standards** (1.215), management **specifications** (1.214), technical specifications, statements of work and data requirement lists.

NOTE 2 This does not include the **contract** (1.60) and associated terms and conditions.

Adapted from EN 13701:2001, 3.107.

1.170
provision
expression in the context of a **normative document** (1.145) that takes the form of a statement, an instruction, a recommendation or a **requirement** (1.190)

NOTE These types of provision are distinguished by the form of wording employed (e.g. instructions are expressed in the imperative mood, recommendations by the use of the auxiliary “should” and requirements by the use of the auxiliary “shall”, and a choice or “permission”, by “may”).

[EN 45020:2004, 7.1]

1.171
purchaser
customer (1.71) in a contractual situation

NOTE The purchaser is sometimes referred to as the “business second party”.

[EN 13701:2001, 3.108]

1.172
qualification
act or conduct by the **supplier** (1.219) to provide evidences to prove that design, manufacturing (including manufacturing process) of hardware/software is adequate to fulfil all **requirements** (1.190) under required environment conditions

NOTE This may be implemented by analysis, test, inspection, or demonstration.

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1.173
qualification process
process (1.160) to demonstrate the ability to fulfil specified **requirements** (1.190)

NOTE 1 The term “qualified” is used to designate the corresponding status.

NOTE 2 Qualification can concern persons, **products** (1.162), **processes** (1.160), or **systems** (1.221).

EXAMPLES Auditor qualification process, **material** (1.135) qualification process.

[ISO 9000:2005, 3.8.6]

1.174
qualification review
QR
review that aims to

— achieve qualification of the products as well as associated production means,

— authorise the production of the recurring products

NOTE The achievement of technical qualification of the product elements is on the basis of the following documents:

— complete design justification file for the system including ground element;

— qualification reports;

— finalized user's documentation, including installation, utilisation, operations, and maintenance manuals.

1.175
qualification test
act of qualification which includes a series of environment tests where the **component** (1.43), subsystem or system under test is subject to more strict environment than the flight predicted levels to prove its design

1.176
quality
degree to which a set of inherent **characteristics** (1.37) fulfils **requirements** (1.190)

NOTE 1 The term “quality” can be used with adjectives such as poor, good, or excellent.

NOTE 2 “Inherent”, as opposed to “assigned”, means existing in something, especially as a permanent characteristic.

[ISO 9000:2005, 3.1.1]

1.177
quality assurance
QA
part of quality management focused on providing confidence that quality **requirements** (1.190) are fulfilled

[ISO 9000:2005, 3.2.11]

1.178
quality characteristic
inherent **characteristic** (1.37) of a **product** (1.162), **process** (1.160) or **system** (1.221) related to a **requirement** (1.190)

NOTE 1 “Inherent” means existing in something, especially as a permanent characteristic.

NOTE 2 A characteristic assigned to a **product** (1.162), **process** (1.160), or **system** (1.221) (e.g. the price of a product, the owner of a product) is not a **quality** (1.176) characteristic of that product, process, or system.

[ISO 9000:2005, 3.5.2]

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1.179
quality control
part of quality management focused on fulfilling quality **requirements** (1.190)

[ISO 9000:2005, 3.2.10]

1.180
quality improvement
part of quality management focused on increasing the ability to fulfil quality **requirements** (1.190)

NOTE The **requirements** (1.190) can be related to any aspect, such as effectiveness, efficiency or **traceability** (1.225).

[ISO 9000:2005, 3.2.12]

1.181
quality manual
document (1.81) specifying the quality management system of an **organization** (1.150)

NOTE Quality manuals can vary in detail and format to suit the size and complexity of an individual organization.

[ISO 9000:2005, 3.7.4]

1.182
quality plan
document (1.81) specifying which **procedures** (1.159) and associated resources shall be applied by whom and when to a specific **project** (1.167), **product** (1.162), **process** (1.160) or **contract** (1.60)

NOTE 1 These procedures generally include those referring to quality management processes and to product realization processes.

NOTE 2 A quality plan often makes reference to parts of the **quality manual** (1.181) or to procedure documents.

NOTE 3 A quality plan is generally one of the results of **quality planning** (1.183).

[ISO 9000:2005, 3.7.5]

1.183
quality planning
part of quality management focused on setting quality objectives and specifying necessary operational **processes** (1.160) and related resources to fulfil the quality objectives

NOTE Establishing **quality plans** (1.182) can be part of quality planning.

[ISO 9000:2005, 3.2.9]

1.184
record
document (1.81) stating results achieved or providing evidence of activities performed

NOTE 1 Records can be used, for example, to document **traceability** (1.225) and to provide evidence of **verification** (1.229), **preventive action** (1.158), and **corrective action** (1.63).

NOTE 2 It is generally not necessary that records be under revision control.

[ISO 9000:2005, 3.7.6]

1.185
recurrent cost
costs incurred for each additional, identical **item** (1.121) produced

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1.186
redundancy
⟨design property of a system⟩ existence of more than one means for performing a **function** (1.102)

NOTE The additional means of performing the **function** (1.102) may be intentionally different (diverse) to reduce the potential for common mode **failures** (1.91).

1.187
reliability
⟨of an item⟩ ability to perform as required under given conditions for a given time interval

NOTE 1 The "given conditions" include the provision of necessary external resources.

NOTE 2 It is usually assumed that the **item** (1.121) is in a state to perform as required at the beginning of the time interval.

NOTE 3 Reliability may be quantified using appropriate measures. Probability is one such measure.

1.188
repair
action on a nonconforming **product** (1.162) to make it acceptable for the intended use

NOTE 1 Repair includes remedial action taken on a previously conforming product to restore it for use, for example as part of **maintenance** (1.132).

NOTE 2 Unlike **rework** (1.193), repair can affect or change **parts** (1.153) of the nonconforming product.

[ISO 9000:2005, definition 3.6.9]

1.189
request for waiver
RFW
vehicle for requiring and agreeing to the use or the delivery of a product that does not conform to its approved product configuration baseline

1.190
requirement
requirement or expectation that is stated, generally implied or obligatory

NOTE 1 "Generally implied" means that it is customary or common practice for the **organization** (1.150), its **customers** (1.71) and other interested parties, that the requirement or expectation under consideration is implied.

NOTE 2 A qualifier can be used to denote a specific type of requirement [e.g. **product** (1.162) requirement, quality management requirement, **customer** (1.71) requirement].

NOTE 3 A specified requirement is one that is stated, for example, in a **document** (1.81).

NOTE 4 Requirements can be generated by different interested parties.

[ISO 9000:2005, 3.1.2]

1.191
residual risk
risk (1.194) remaining after implementation of risk reduction measures

[ISO 17666:2003, 2.1.10]

1.192
review
activity undertaken to determine the suitability, adequacy and effectiveness of the subject matter to achieve established objectives

NOTE Review can also include the determination of efficiency.

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EXAMPLES Management review, **design** (1.75) and **development** (1.78) review, review of **customer** (1.71) requirements, and **non-conformity** (1.144) review.

[ISO 9000:2005, 3.8.7]

1.193
rework
action on a nonconforming **product** (1.162) to make it conform to the **requirements** (1.190)

NOTE Unlike rework, **repair** (1.188) can affect or change **parts** (1.153) of the nonconforming product.

[ISO 9000:2005, 3.6.7]

1.194
risk
undesirable situation or circumstance that has both a likelihood of occurring and a potential negative consequence on a project

NOTE 1 Risks may be quantified by estimation of probabilities.

NOTE 2 Risks arise from uncertainty due to lack of predictability or control of events, and are inherent to any **project** (1.167), and can arise at any time during the project **life cycle** (1.128); reducing these uncertainties reduces the risk.

[ISO 17666:2003, 2.1.12]

1.195
risk assessment
process (1.160) of qualitative risk categorization and/or quantitative risk evaluation

1.196
risk management
organized, systematic decision-making process that efficiently identifies, analyses, plans, tracks, controls, communicates and documents risk and establishes mitigation approaches and plans to increase the likelihood of achieving program/project goals

[ISO 17666:2003, 2.1.5]

1.197
risk management policy
describes the organization's attitude towards risks, how it conducts risk management, the risks it is prepared to accept and defines the main **requirements** (1.190) for the risk management plan

[ISO 17666:2003, 2.1.6]

1.198
safety
system state with acceptable levels of risk for conditions that can cause death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment

NOTE The term “safety” is defined differently in ISO/IEC Guide 2 as “freedom from unacceptable risk of harm”.

1.199
safety analysis
technique used to systematically evaluate and resolve hazards

1.200
safety-critical function
function (1.102) that, if lost or degraded as a result of incorrect or inadvertent operation, can result in catastrophic or critical consequences

[EN 13701:2001, 3.127]

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1.201
scrap
action on a nonconforming **product** (1.162) to preclude its originally intended use

EXAMPLES Recycling, destruction.

NOTE In a nonconforming service situation, use is precluded by discontinuing the service.

[ISO 9000:2005, 3.6.10]

1.202
security
protection from unauthorized access or uncontrolled losses or effect

1.203
severity
classification of a **failure** (1.91) or undesired event according to the magnitude of its possible consequences

[EN 13701:2001, 3.133]

1.204
single-point failure
failure (1.91) of an **item** (1.121) that results in the unrecoverable **failure** (1.91) of the product

1.205
software
S/W
programs, procedures, rules and any associated documentation pertaining to the operations of a computer system

[ISO/IEC 9126-1:2001, B.28]

1.206
software module
smallest program unit that is discrete and identifiable with respect to compiling, combining with other units and loading

[EN 13701:2001, 3.135]

1.207
space element
product (1.162) or a set of products intended for operation in space

Adapted from EN 13701:2001, 3.137.

1.208
space debris
any man-made space object, including fragments and elements thereof, in Earth orbit or re-entering the Earth's atmosphere that is non-functional

NOTE Potassium-sodium alloy (NaK) and other such constituents are included in “elements”.

1.209
space mission
defined end user's requirements to be achieved by a **space system** (1.210)

1.210
space system
system (1.221) that contains at least one **space element** (1.207)

[EN 13701:2001, 3.139]

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1.211
spacecraft
S/C
any space vehicle, excluding launchers

EXAMPLES Satellites, automatic or man-related vehicles or probes.

1.212
space vehicle
any launcher or spacecraft

1.213
spare parts
components (1.43), assemblies, and equipment that are completely interchangeable with like items installed or in use, that are, or can be used, to replace like items removed during maintenance and overhaul

NOTE Spare part types are identified as development spares, initial spares and replenishment spares.

1.214
specification
document (1.81) stating **requirements** (1.190)

NOTE A specification can be related to activities [e.g. **procedure** (1.159), **document** (1.81), **process** (1.160) specification and **test** (1.224) specification], or **products** (1.162) [e.g. product specification, **performance** (1.155) specification and drawing].

[ISO 9000:2005, 3.7.3]

1.215
standard
document (1.81), established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or **characteristics** (1.37) for activities or their results, aimed at the achievement of the optimum degree of order in a given context

NOTE Standards should be based on the consolidated results of science, technology and experience, and aimed at the promotion of optimum community benefits.

[EN 45020:2004, 3.2]

1.216
statement of work
contractual **document** (1.81) prepared during **project** (1.167) initiation and planning that describes what the project shall deliver and outlines all work required to complete the project

1.217
subcontract
contract (1.60) between a **contractor** (1.61) and their subordinate contractor in the customer-supplier chain to obtain **materials** (1.135) or other inputs to a **product** (1.162)

1.218
subsystem
set of interdependent elements constituted to achieve a given objective by performing a specified **function** (1.102), but that does not, on its own, satisfy the customer's requirement

[EN 13701:2001, 3.142]

1.219
supplier
organization (1.150) or person that provides a **product** (1.162)

EXAMPLES Producer, distributor, retailer, or vendor of a **product** (1.162), or provider of a service or information.

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NOTE 1 A supplier can be internal or external to the organization.

NOTE 2 In a contractual situation, a supplier is sometimes called "**contractor**" (1.61).

[ISO 9000:2005, 3.3.6]

1.220
support system
generic infrastructure and services used to support the development and operation of space system elements

EXAMPLES Ground stations and associated networks, orbit computing facilities, test centres, astronaut centre, launch facilities.

NOTE **Items** (1.121) can be part of other segments during their development and later become part of the support segment when used (e.g. tracking network).

1.221
system
set of interrelated or interacting elements

[ISO 9000:2005, 3.2.1]

NOTE The system is considered as separated from the environment and other external systems by an imaginary surface that cuts the links between them and the considered system. Through these links, the system is affected by the environment, is acted upon by external systems or acts itself on the environment or the external systems.

1.222
tailoring
process (1.160) by which individual **requirements** (1.190) of **specifications** (1.214), **standards** (1.215), and related **documents** (1.81) are evaluated and made applicable to a specific **project** (1.167) by selection and, in some exceptional cases, modification of existing or addition of new **requirements** (1.190)

NOTE The evaluation determines the extent to which the **requirements** (1.190) are most suitable for the acquisition or **development** (1.78) of constituents of a space project.

[EN 13701:2001, 3.147]

1.223
technical specification
TS
specification expressing technical requirements for designing and developing the solution to be implemented

NOTE The technical specification evolves from the functional specification and defines the technical requirements for the selected solution as part of a business agreement.

1.224
test
formal process of exercising or putting to trial a **system** (1.221) or **item** (1.121) by manual or automatic means to identify differences among specified, expected, and actual results

1.225
traceability
ability to trace the history, application or location of that which is under consideration

NOTE 1 When considering **product** (1.162), traceability can relate to

— the origin of **materials** (1.135) and **parts** (1.153),

— the processing history,

— the distribution and location of the **product** (1.162) after delivery.

NOTE 2 In a calibration sense, traceability relates measuring equipment to national or international standards, primary standards, basic physical constants or properties, or reference materials.

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NOTE 3 When considering an information system (IS), it is the ability to trace the history, application or location of an entity by means of recorded identifications.

1.226
uncertainty
lack of certitude resulting from inaccuracies of input parameters, analysis process, or both

1.227
undesirable event
event whose consequences are detrimental to the success of the mission

1.228
validation
confirmation, through objective evidence, that the **requirements** (1.190) for a specific intended use or application have been fulfilled

NOTE 1 The term “validated” is used to designate the corresponding status.

NOTE 2 The use conditions for validation can be real or simulated.

NOTE 3 Validation may be determined by a combination of test, analysis, demonstration, and inspection.

[ISO 9000:2005, 3.8.5]

1.229
verification
confirmation through the provision of objective evidence that specified **requirements** (1.190) have been fulfilled

NOTE 1 The term “verified” is used to designate the corresponding status.

NOTE 2 Confirmation can be comprised of activities such as

— performing alternative calculations,

— comparing a new design **specification** (1.214) with a similar proven design specification,

— undertaking **tests** (1.224) and demonstrations,

— reviewing **documents** (1.81) prior to issue.

NOTE 3 Verification may be determined by a combination of test, analysis, demonstration, and inspection.

[ISO 9000:2005, 3.8.4]

1.230
waiver
formal authorization to accept **products** (1.162) that, during production or after having been submitted to inspection or tests, are found to depart from specified **requirements** (1.190)

NOTE 1 The “deviation” is an anterior decision whereas the “waiver” is a posterior decision with respect to production phase.

NOTE 2 The term **concession** (1.44) is synonymous and may be used for material.

NOTE 3 For aeronautics: written authorization to accept, use or release a **product** (1.162) already produced but that does not conform to the specified **requirements** (1.190).

1.231
work breakdown structure
WBS
hierarchical representation of the activities necessary to complete a **project** (1.167)

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NOTE 1 The work breakdown structure is the principal structure used in managing a **project** (1.167) and provides a framework for managing cost, schedule and technical content. It divides the project into manageable work packages, organized according to the nature of the work by breaking down the total work to be performed into increasing levels of detail.

NOTE 2 The work breakdown structure is derived from the product tree, selected elements of which are extended to include support functions (e.g. management, engineering, product assurance) and associated services (e.g. test facilities).

1.232
work package
WP
group of related tasks that are defined at the lowest level within a **work breakdown structure** (1.231)

NOTE Grouping of tasks related to a same **product** (1.162) and a same supplier.

[EN 13701:2001, 3.157]

2 Abbreviated terms

ABM	apogee boost motor
AC	alternating current
ACS	attitude control system
AIT	assembly, integration, and test
AIV	assembly, integration, and verification
AOCS	attitude and orbit control system
AR	acceptance review
AWG	American wire gauge
BOL	beginning-of-life
CAD	computer aided design
CAM	computer aided manufacturing
CCB	configuration control board
CCSDS	Consultative Committee for Space Data Systems
CFRP	carbon fibre reinforced plastic
COG	centre of gravity
COM	centre of mass
COTS	commercial off-the-shelf
CPU	central processing unit
CVCM	collected volatile condensable material
DC	direct current
DDF	design definition file
DJF	design justification file
DM	development model

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DML	declared material list
DMPL	declared mechanical part list
DPA	destructive physical analysis
DPL	declared process list
DRB	delivery review board
DRD	document requirements definition
DRL	document requirements list
ECLS	environmental control and life support
ECSS	European Cooperation for Space Standardization
EED	electro-explosive device
EEE	electronic, electrical, electromechanical
EGSE	electrical ground support equipment
EIDP	end item data package
EM	engineering model
EMC	electromagnetic compatibility
EMI	electromagnetic interference
EOL	end-of-life
EPP	European preferred parts list
EQM	engineering qualification model
ESC	electrostatic compatibility
ESD	electrostatic discharge
EVA	extra vehicular activities
FCI	fracture-critical item
FEM	finite element methods
FM	flight model
FMECA	failure modes, effects and criticality analysis
FOP	flight operations plan
FOS	factor of safety
FOV	field of view
FQR	flight qualification review
FRR	flight readiness review
FS	functional specification
GEO	geostationary orbit
GPS	global positioning system

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GSO	geosynchronous orbit
G/S	ground segment
HCI	human-computer interaction
HEO	high eccentric orbit
HFE	human factors engineering
ICD	interface control document
ILS	integrated logistic support
IRD	interface requirement document
IVA	intra vehicular activities
LEO	low Earth orbit
LEOP	launch and early orbit phase
LRR	launch readiness review
LSA	logistic support analysis
MCC	mission control centre
MDP	maximum design pressure
MEO	medium (altitude) Earth orbit
MEO	maximum expected operating pressure
MGSE	mechanical ground support equipment
MIP	mandatory inspection point
MLI	multi-layer insulation
MLT	magnetic local time
MPP	milestone payment plan
MRB	material review board
NOTE	MRB is an obsolete term; see NRB.
MRD	mission requirements document
NDI	non-destructive inspection
NCR	non-conformance report
NRB	non-conformance review board
n.a.	not applicable
N/A	not applicable
OBDH	on-board data handling
ORR	operational readiness review
PA	product assurance
PCB	printed circuit board

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PDR	preliminary design review
PFCI	potential fracture critical item
PFM	protoflight model
PPL	preferred parts list
PRR	preliminary requirements review
QM	qualification model
R&D	research and development
RAMS	reliability, availability, maintainability, and safety
RF	radio frequency
RFA	request for approval
RFC	request for concession
RH	relative humidity
RID	review item discrepancy
r.m.s.	root-mean-square
SCOE	special check-out equipment
SE	system engineering
SEE	single-event effect
SOW	statement of work
SRD	system requirements document
SRR	system requirements review
STM	structural thermal model
TBD	to be defined
TBS	to be specified
TCS	thermal control (sub)system
TM	thermal model
TM/TC	telemetry/telecommand
TML	total mass loss
TPS	thermal protection system
TRB	test review board
TRR	test readiness review
TT&C	telemetry, tracking, and command
VCD	verification control document

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