



ECSS

Glossary of terms

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Foreword

This Standard is one of the series of ECSS Standards intended to be applied together for the management, engineering and product assurance in space projects and applications. ECSS is a cooperative effort of the European Space Agency, National Space Agencies and European industry associations for the purpose of developing and maintaining common standards.

Requirements in this Standard are defined in terms of what shall be accomplished, rather than in terms of how to organize and perform the necessary work. This allows existing organizational structures and methods to be applied where they are effective, and for the structures and methods to evolve as necessary without rewriting the standards.

The formulation of this Standard takes into account the existing ISO 9000 family of documents.

This Standard has been prepared by the ECSS Vocabulary Working Group, reviewed by the ECSS Technical Panel and approved by the ECSS Steering Board.

Where a definition in this Standard includes word(s) that are defined independently elsewhere in the Standard, then these words are highlighted in bold, the first time they are used, within that definition for consistency and clarity of meaning.

The differences between this version and ECSS P-001A rev. 1 (June 1997) are shown at Annex A.

This version B cancels and replaces ECSS-P-001A rev. 1.

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Scope

This document controls the definition of all common terms used in the European Cooperation for Space Standardization (ECSS) Standards System. Terms specific to a particular ECSS Standard are defined in that standard.

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Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this ECSS Standard. For dated references, subsequent amendments to, or revisions of any of these publications do not apply. However, parties to agreements based on this ECSS Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references the latest edition of the publication referred to applies.

ISO 9000:2000	Quality management systems – Fundamentals and vocabulary
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Terms and definitions

The order of precedence for the elaboration of terms and definitions used in the ECSS Standards is:

1. this document
2. ISO Standards
3. IEC Multilingual Dictionary
4. EN 45020
5. Oxford English Dictionary

A term in a definition, which is defined elsewhere in this document is indicated by boldface. Such a boldface term may be replaced in the definition by its complete definition.

A concept limited to a special meaning in a particular context is indicated by designing the subject field in angle brackets, < >, before the definition.

3.1

acceptance

act of an authorized representative of the **customer** by which the customer assumes for itself, or as an agent of another party, ownership of existing and specified **products** tendered, or confirms satisfactory **performance** of specific services, as partial or complete performance of the **contract** on the part of the **supplier**

3.2

acceptance stage

verification stage with the objective of demonstrating that the product is free of workmanship defects and integration errors and ready for its intended use

3.3

acceptance test

test to determine that a system, subsystem, component, or functional part is capable of meeting performance requirements prescribed in purchase specifications or other documents specifying what constitutes the adequate performance capability for the item and to demonstrate the item is free from manufacturing defects

3.4

accident

undesired event arising from operation of any **project-specific item** that results in

- a. human death or injury,
- b. loss of, or damage to, project hardware, **software** or facilities that can then affect the accomplishment of the **mission**,
- c. loss of, or damage to, public or private property, or
- d. detrimental effects on the **environment**

NOTE Accident and mishap are synonymous.

[EN 13701:2001]

3.5

alert

formal notification to users, informing them of **failures** or **nonconformity** of **items**, already released for use or not, which could also be present on other items already delivered [e.g. items with identical **design** concept, **materials**, components or **processes**]

NOTE An alert can also be raised when a deficiency in the specified **requirements**, which can affect the fitness for purpose in the defined application, has been identified.

[EN 13701:2001]

3.6

allowable load

maximum load that can be permitted in a structural part for a given operating environment to prevent rupture, collapse, detrimental deformation or unacceptable crack growth

NOTE Adapted from ISO 14623:2003.

3.7

allowable stress

maximum stress that can be permitted in a structural part for a given operating environment to prevent rupture, collapse, detrimental deformation or unacceptable crack growth

NOTE Adapted from ISO 14623:2003.

3.8

anomaly

any deviation from the expected situation

[EN 13701:2001]

3.9

applicable document

document that contains **provisions** 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.

3.10

approval

formal agreement to use or apply an **item**

NOTE 1 Approval implies that the approving authority has verified that the item conforms to its **requirements**.

NOTE 2 Adapted from EN 13701:2001.

3.11

assembly

combination of parts, components and units which forms a functional entity

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

3.12

assurance

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

[EN 13701:2001]

3.13

audit

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

NOTE Internal audits, sometimes called first-party audits, are conducted by, or on behalf of, the **organization** itself for internal purposes and can form the basis for the organization's self-declaration of **conformity**. 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**, or by other persons on their behalf. Third-party audits are conducted by external independent organizations. Such organizations provide **certification** or registration of **conformity** with **requirements** such as those of ISO 1400:1996. When **quality** and environmental **management systems** 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".

[ISO 9000:2000]

3.14

audit client

organization or person requesting an **audit**

[ISO 9000:2000]

3.15

audit conclusion

outcome of an **audit** provided by the **audit team** after consideration of the audit objectives and all **audit findings**

[ISO 9000:2000]

3.16

audit criteria

set of policies, **procedures** or **requirements** used as a reference

[ISO 9000:2000]

3.17

audit evidence

records, statements of fact or other **information** which are relevant to the **audit criteria** and verifiable

NOTE Audit evidence can be qualitative or quantitative.

[ISO 9000:2000]

3.18

audit findings

results of the evaluation of the collected **audit evidence** against **audit criteria**

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

[ISO 9000:2000]

3.19

audit programme

set of one or more **audits** planned for a specific time frame and directed towards a specific purpose

[ISO 9000:2000]

3.20

audit team

one or more **auditors** conducting an **audit**

NOTE 1 One auditor in the audit team is generally appointed as audit team leader.

NOTE 2 The audit team can include auditors-in-training and, where required, **technical experts**.

NOTE 3 Observers can accompany the audit team but not act as part of it.

[ISO 9000:2000]

3.21

auditee

organization being audited

[ISO 9000:2000]

3.22

auditor

person with the **competence** to conduct an **audit**

[ISO 9000:2000]

3.23

availability

ability of an **item** to be in a state to perform a **required function** 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 This ability depends on the combined aspects of the **reliability** performance, the **maintainability** performance and the **maintenance support performance**.

NOTE 2 Required external resources, other than maintenance resources do not affect the availability performance of the item.

NOTE 3 When referring to the measure for availability, the preferred term is "**instantaneous availability**".

NOTE 4 Adapted from IEC Multilingual Dictionary:2001 edition.
[EN 13701:2001]

3.24

bakeout

activity of increasing the temperature of hardware to accelerate its outgassing rates with the intent of reducing the content of molecular contaminants within the hardware

NOTE Bakeout is usually performed in a vacuum environment, but may be done in a controlled atmosphere.

3.25

baseline

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

[EN 13701:2001]

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

3.26

black box

representation of an item whereby its internal composition is not essential to understand its **function**, and only its interface characteristics are considered

3.27

business agreement

any agreement between two or more parties for the supply of goods or services

[EN 13701:2001]

3.28

calibration

all the operations for the purpose of determining the values of the **errors** 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]

3.29

capability

ability of an **organization, system** or **process** to realize a **product** that will fulfil the **requirements** for that product

NOTE Process capability terms in the field of statistics are defined in ISO 3534-2.

[ISO 9000:2000]

3.30

caution condition

condition which has the potential to degrade into a **warning condition**, and which can call for specific action, including the implementation of special **procedures** or restrictions on the operation of the system

[EN 13701:2001]

3.31

certification

procedure by which a **third party** gives written assurance that a **product**, **process** or service conforms to specified **requirements**

[EN 45020:1998]

3.32

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);
- behavioral (e.g. courtesy, honesty, veracity);
- temporal (e.g. punctuality, **reliability**, **availability**);
- ergonomic (e.g. physiological characteristic, or related to human **safety**);
- functional (e.g. maximum speed of an aircraft).

[ISO 9000:2000]

3.33

clean area

area that have contamination control by physical design and specified operating **procedures**

NOTE Examples of such areas are cleanrooms, controlled areas and good housekeeping.

3.34

common cause failure

failure of multiple items occurring from a single cause that is common to all of them

[EN 13701:2001]

3.35

common mode failure

failure of multiple identical items that fail in the same mode

NOTE Common mode failures are a particular case of **common cause failures**.

[EN 13701:2001]

3.36

common mode fault

fault of multiple **items** that exhibit the same fault mode

[EN 13701:2001]

3.37

competence

demonstrated ability to apply knowledge and skills

[ISO 9000:2000]

3.38

concession

permission to use or release a **product** that does not conform to specified **requirements**

NOTE 1 A concession is generally limited to the delivery of a product that has nonconforming **characteristics** within specified limits for an agreed period of time or quantity of that product.

[ISO 9000:2000]

NOTE 2 The term “**waiver**” is synonymous with the word “concession”.

3.39

configuration

functional or physical **characteristics** of a **product** defined in configuration definition documents subject to **configuration baseline**

NOTE Adapted from ISO 10007:2003.

3.40

configuration baseline

approved status of requirements and design of a product at project key milestone that serves as reference for activities throughout the **life cycle** of the **product**

NOTE Adapted from ISO 10007:2003.

3.41

configuration control

coordinated activities for controlling modifications to a **configuration baseline**

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

3.42

configuration document

document that defines the **requirements** for **function**, **design**, build, production, and **verification** for a **configuration item**

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

3.43

configuration identification

coordinated activities to establish rules for **configuration item** selection, **configuration baseline** content definition, and **product** and **document** identifiers definition

3.44

configuration item

aggregation of hardware, **software**, processed **materials**, services or any of its discrete portions, that is designated for **configuration management** and treated as a single entity in the configuration management **process**

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

3.45

configuration management

activity for establishing and maintaining consistent records of the performance parameters of a **product** and its functional and physical attributes compared to product design and operational requirements

NOTE 1 Configuration management is applied throughout the entire **life cycle** of the product (i.e. development, production, deployment, operation and disposal).

NOTE 2 Adapted from ISO 10007:2003.

3.46
configuration status accounting

formalized recording and reporting of **product** characteristics and configuration information, the status of applicable changes and the status of their implementation

NOTE Adapted from ISO 10007:2003.

3.47
configuration verification

coordinated activities to determine the conformity of the **configuration item** to its **configuration document(s)**

3.48
conformity
fulfilment of a **requirement**

NOTE 1 This definition is consistent with ISO/IEC Guide 2 but differs from it in phrasing to fit into the ISO 9000 concepts.

NOTE 2 The term “conformance” is synonymous but deprecated.

[ISO 9000:2000]

3.49
constraint

characteristic, result or design feature which is made compulsory or has been prohibited for any reason.

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

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

NOTE 3 For example constraints can come from environmental and operational conditions, law, **standards**, market demand, investments and means availability, or the **organization's** policy.

NOTE 4 Adapted from EN 1325-1:1997.

3.50
contamination

introduction of any undesirable molecular or particulate matter (including microbiological matter) to an item or to the environment of interest

3.51
contingency procedure

pre-planned **procedure** to be executed in response to a departure from specified behaviour

[EN 13701:2001]

3.52
continual improvement

recurring activity to increase the ability to fulfil **requirements**

NOTE The **process** of establishing objectives and finding opportunities for improvement is a continual process through the

use of **audit findings** and **audit conclusions**, analysis of data, **management reviews** or other means and generally leads to **corrective action** or **preventive action**.

[ISO 9000:2000]

3.53

contract

any 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.

3.54

contractor

supplier in a contractual situation

3.55

correction

action to eliminate a detected **nonconformity**

NOTE 1 A correction can be made in conjunction with a **corrective action**.

NOTE 2 A corrective action can be, for example, **rework** or **regrade**.

[ISO 9000:2000]

3.56

corrective action

action to eliminate the cause of a detected **nonconformity** 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** is taken to prevent occurrence.

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

[ISO 9000:2000]

3.57

corrosion

deterioration of a material by chemical or electrochemical reaction with its environment

3.58

cost breakdown structure

hierarchical structure which depicts elements of cost

3.59

critical item

component, material, software, sub-assembly, **function**, process or technology, which requires special project attention

EXAMPLE 1 An item is critical, if it is not qualified or validated for the application in question (or has raised problems previously which remained unresolved).

EXAMPLE 2 An item is critical, if it is difficult to demonstrate design performance.

EXAMPLE 3 An item is critical, if it is highly sensitive to the conditions under which it is produced or used (e.g. contamination, radiation).

EXAMPLE 4 An item is critical, if it is out of tolerance, because it has the potential to degrade the quality of the product significantly, and so the ability of the end-product to accomplish defined mission objectives.

EXAMPLE 5 An item is critical, if major difficulties or uncertainties are expected in the procurement, manufacturing, assembly, inspection, test, handling, storage and transportation, which have the potential to lead to major degradation in the quality of the product.

3.60 critical path

series of activities that determines the earliest completion of the **project**

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

3.61 customer organization or person that receives a **product**

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

NOTE A customer can be internal or external to the organization.

[ISO 9000:2000]

3.62 customer satisfaction

customer's perception of the degree to which the customer's **requirements** have been fulfilled

NOTE 1 Customer complaints are a common indicator of low customer satisfaction but their absence does not necessarily imply high customer satisfaction.

NOTE 2 Even when customer requirements have been agreed with the customer and fulfilled, this does not necessarily ensure high customer satisfaction.

[ISO 9000:2000]

3.63 defect

non-fulfilment of a **requirement** related to an intended or specified use

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

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

[ISO 9000:2000]

3.64 dependability

collective term used to describe the **availability** performance and its influencing factors: **reliability** performance, **maintainability** performance and **maintenance** support **performance**

NOTE Dependability is used only for general descriptions in non-quantitative terms.

[ISO 9000:2000]

3.65

derating

process of designing a product such that its components operate at a significantly reduced level of stress to increase reliability

[EN 13701:2001]

3.66

design, noun

<result> set of **information** that defines the **characteristics** of a **product**

NOTE Adapted from EN 13701:2001.

3.67

design, noun

<activity>**process** used to generate the set of **information** defining the **characteristics** of a **product**

NOTE Adapted from EN 13701:2001.

3.68

design and development

set of processes that transforms **requirements** into specified **characteristics** or into the **specification** of a **product**, **process** or **system**

NOTE 1 The terms “**design**” and “**development**” are sometimes used synonymously and sometimes used to define different stages of the overall design and development process.

NOTE 2 A qualifier can be applied to indicate the nature of what is being designed and developed (e.g. product design and development).

[ISO 9000:2000]

3.69

design to minimum risk

design of a **product** to an acceptable **residual risk** solely by conformance to specific requirements for **safety**, other than **failure** tolerance

[EN 13701:2001]

3.70

development

process by which the **capability** to adequately implement a technology or **design** is established before manufacture

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

[EN 13701:2001]

3.71

deviation permit

permission to depart from the originally specified **requirements** for a **product** prior to realization

NOTE A deviation permit is generally given for a limited quantity of product or period of time, and for a specific use.

[ISO 9000:2000]

3.72

document

information and its supporting medium

EXAMPLE **Record, specification, procedure document**, drawing, report, **standard**.

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”.

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

[ISO 9000:2000]

3.73

EEE component

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

NOTE The term EEE component can be used interchangeably with the term EEE part.

[EN 13701:2001]

3.74

effectiveness

extent to which planned activities are realized and planned results achieved

[ISO 9000:2000]

3.75

efficiency

relationship between the result achieved and the resources used

[ISO 9000:2000]

3.76

emergency

condition when potentially catastrophic or critical **hazardous events** have occurred, and immediate and preplanned **safing** action is possible and is mandatory in order to protect personnel

[EN 13701:2001]

3.77

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.

3.78

equipment

associated assemblies intended to achieve a defined final objective

[IEC Multilingual Dictionary:2001 edition]

3.79

error

a 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**, e.g. a computing error made by faulty computer **equipment**.

[IEC Multilingual Dictionary:2001 edition]

3.80

estimate at completion

sum of costs incurred up to the cut-off date and the respective **estimate to completion**

NOTE Adapted from EN 13701:2001.

3.81

estimate to completion

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

NOTE Adapted from EN 13701:2001.

3.82

fail-safe

design property of an item which prevents its failures from resulting in critical faults

[IEC Multilingual Dictionary:2001 edition]

3.83

failure

the termination of the ability of an **item** to perform a **required function**

NOTE 1 After failure, the item has a **fault**.

NOTE 2 This concept as defined does not apply to items consisting of **software** only.

[IEC Multilingual Dictionary:2001 edition]

3.84

failure mode

observable effect of the mechanism through which the **failure** occurs e.g. short-circuit, open-circuit, fracture, excessive wear

NOTE This term is equivalent to the term “fault mode” in IEC Multilingual Dictionary:2001 edition.

3.85

failure tolerance

the attribute of an **item** that makes it able to perform a **required function** in the presence of certain given sub-item **failures**

3.86

fault, noun

<state> state of an **item** 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 1 A fault is often the result of a **failure** of the item itself, but can exist without prior failure.

NOTE 2 Adapted from IEC Multilingual Dictionary:2001 edition.

3.87

fault, noun

<event> unplanned occurrence or **defect** in an **item** which can result in one or more **failures** of the item itself or of other associated **equipment**

[IEC Multilingual Dictionary:2001 edition]

NOTE An item 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 will cause the item to fail, resulting in an **error**. This error can propagate to other items causing them, in turn, to fail. After the failure occurs, the item as a whole is said to have a fault or to be in a faulty state.

3.88

fault tolerance

the attribute of an **item** that makes it able to perform a **required function** in the presence of certain given sub-item **faults**

[IEC Multilingual Dictionary:2001 edition]

3.89

firmware

hardware that contains a computer program or data that cannot be changed in its user **environment**

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

[ISO/IEC 9126-1:2001]

3.90

flammability

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

3.91

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

3.92

flight operations

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

3.93

function

intended effect of a **system, subsystem, product** or **part**

NOTE Adapted from EN 1325-1:1997.

3.94

function tree

hierarchical decomposition of the system performances into **functions** and sub-functions that when all are fulfilled completes the overall system mission

3.95

functional analysis

technique of identifying and describing all **functions** of a **system**

NOTE Adapted from EN 1325-1:1997.

3.96

grade

category or rank given to different **quality** requirements for **products**, **processes** or **systems** having the same functional use

EXAMPLE Class of airline ticket or category of hotel in hotel guide.

NOTE When establishing a quality **requirement**, the grade is generally specified.

[ISO 9000:2000]

3.97

ground operations

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

3.98

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

3.99

hazard

existing or potential condition of an item that can result in an **accident**

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.

NOTE 3 Adapted from ISO 14620-2:2000.

3.100

hazardous event

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

3.101

human error

inappropriate or undesirable human decision or behavior that reduces, or has the potential for reducing effectiveness, safety, or system performance

3.102

implementation documents

formal response from a **supplier** to the **customer** describing how all **requirements** will be met

NOTE Adapted from EN 13701:2001.

3.103

incident

unplanned event that could have been an **accident** but was not

[EN 13701:2001]

3.104

information

meaningful data

[ISO 9000:2000]

3.105

infrastructure

<organization> **system** of facilities, **equipment** and services needed for the operation of an **organization**

[ISO 9000:2000]

3.106

inhibit

design feature that provides a physical interruption between an energy source and a **function** actuator

[EN 13701:2001]

EXAMPLE A relay or transistor between a pyrotechnic initiator, a latch valve between a propellant tank and a thrusters.

NOTE Two inhibits are independent if no single failure can eliminate more than one inhibit.

3.107

inspection

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

[ISO 9000:2000]

3.108

instantaneous availability

the probability that an **item** is in a state to perform a **required function** under given conditions at a given instant of time, assuming that the required external resources are provided

[IEC Multilingual Dictionary:2001 edition]

3.109

integration

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

3.110

integrity

characteristics of an item, which remains unaltered after a process had been applied to it

3.111

interface

mechanical, thermal, electrical, or operational common boundary between two elements of a system

3.112

item

any part, component device, subsystem, functional unit, equipment or system that can be individually considered

[IEC Multilingual Dictionary:2001 edition]

3.113

launcher

vehicle design to carry **payloads** into space

NOTE The term "launch vehicle" is synonymous.

3.114

life cycle

all the phases of acquisition, operation and logistic support of an **item** beginning with needs identification through disposal of the item

3.115

life cycle cost

total cost of an **item** during acquisition, operation, maintenance, and the disposal

NOTE Adapted from EN 13701:2001.

3.116

life profile

chronological description of the situations to which a **product** is submitted from its manufacturing to its disposal

3.117

lifetime

period over which any of the **item** properties are required to be within defined limits

3.118

maintainability

ability of an **item** under given conditions of use, to be retained in, or restored to, a state in which it can perform a **required function**, when **maintenance** is performed under given conditions and using stated **procedures** and resources

NOTE 1 The term “maintainability” is also used as a measure of maintainability performance (i.e. the probability that a given active maintenance action, for an item under given conditions of use can be carried out within a stated time interval, when maintenance is performed under stated conditions and using stated procedures and resources).

NOTE 2 Adapted from IEC Multilingual Dictionary:2001 edition.

3.119

maintenance

the combination of all technical and administrative actions, including supervision actions, intended to retain an **item** in, or restore it to, a state in which it can perform a **required function**

[IEC Multilingual Dictionary:2001 edition]

3.120

management

coordinated activities to direct and control an **organization**

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 9000:2000]

3.121

management system

system to establish policy and objectives and to achieve those objectives

NOTE A management system of an **organization** can include different management systems, such as a quality manage-

ment system, a financial management system or an environmental management system.

[ISO 9000:2000]

3.122

material

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

[EN 13701:2001]

3.123

matériel

collective term for **items**, such as articles, supplies, machinery used in an **organization**, as distinguished from the personnel or body of persons employed

[EN 13701:2001]

3.124

mean time between failures

the expectation of the time between **failures**

NOTE In English, the use of the abbreviation MTBF in this sense is now deprecated.

[IEC Multilingual Dictionary:2001 edition]

3.125

measurement control system

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

[ISO 9000:2000]

3.126

measurement process

set of operations to determine the value of a quantity

[ISO 9000:2000]

3.127

measuring equipment

measuring instrument, **software**, measurement **standard**, reference **material** or auxiliary apparatus or combination thereof necessary to realize a **measurement process**

[ISO 9000:2000]

3.128

mechanical part

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

[EN 13701:2001]

3.129

metrological characteristic

distinguishing feature which can influence the results of measurement

NOTE 1 **Measuring equipment** usually has several metrological characteristics.

NOTE 2 Metrological characteristics can be the subject of **calibration**.

[ISO 9000:2000]

3.130

metrological confirmation

set of operations required to ensure that **measuring equipment** conforms to the **requirements** for its intended use

NOTE 1 Metrological confirmation generally includes **calibration** or **verification**, any necessary adjustment or **repair** and subsequent recalibration, comparison with the metrological requirements for the intended use of the **equipment**, as well as any required sealing and labelling.

NOTE 2 Metrological confirmation is not achieved until and unless the fitness of the measuring equipment for the intended use has been demonstrated and documented.

NOTE 3 The requirements for the intended use include such considerations as range, resolution, maximum permissible **errors**, etc.

NOTE 4 Metrological confirmation requirements are usually distinct from and are not specified in **product** requirements.

[ISO 9000:2000]

3.131

metrological function

function with organizational responsibility for defining and implementing the **measurement control system**

[ISO 9000:2000]

3.132

mission

specific task, duty or **function** defined to be accomplished by a **system**

[EN 13701:2001]

3.133

model

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

[Oxford English Dictionary]

NOTE Model can also be used to identify particular instances of the **product** e.g. flight model.

3.134

need

what is necessary for, or desired by, the user

NOTE 1 A need can be declared or undeclared; it can be an existing or a potential one.

[EN 1325-1:1997]

NOTE 2 The user is a person or an organization for which the product is designed and which exploits at least one of its **functions** at any time during its **life cycle**.

NOTE 3 For the space community, the needs are often called mission statement.

3.135
nonconformance
see “**nonconformity**”

3.136
nonconformity
non-fulfilment of a **requirement**
[ISO 9000:2000]

NOTE The term “**nonconformance**” is synonymous.

3.137
normative document
document that provides rules, guidelines or **characteristics** for activities or their results

NOTE 1 The term “normative document” is a generic term that covers such documents as **standards**, technical **specifications**, codes of practice and regulations.

NOTE 2 Adapted from EN 45020:1998.

3.138
normative reference
reference which incorporates **provisions** from a cited publication into a **normative document**

NOTE Adapted from EN 13701:2001.

3.139
objective evidence
data supporting the existence or verity of something

NOTE Objective evidence may be obtained through observation, measurement, test, or other means.

[ISO 9000:2000]

3.140
organization
group of people and facilities with an arrangement of responsibilities, authorities and relationships

EXAMPLE Company, corporation, firm, enterprise, institution, charity, sole trader, association, **project** or parts 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 9000:2000]

3.141
organizational structure
arrangement of responsibilities, authorities and relationships between people

NOTE Adapted from ISO 9000:2000.

3.142
outage
the state of an **item** of being unable to perform its **required function**

[IEC Multilingual Dictionary:2001 edition]

3.143**part**

hardware **item** that cannot be disassembled without destroying the **capability** to perform its **required function**

[EN 13701:2001]

3.144**payload**

total complement of specific instruments, space equipment, support hardware, and consumables carried in the **spacecraft** to accomplish a discrete activity in space

3.145**performance**

aspects of an **item** observed or measured from its operation or **function**

NOTE 1 These aspects are generally quantified.

NOTE 2 Adapted from EN 13701:2001.

3.146**preventive action**

action to eliminate the cause of a potential **nonconformity**, 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** is taken to prevent recurrence.

[ISO 9000:2000]

3.147**procedure**

specified way to carry out an activity or **process**

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** that contains a procedure can be called a “procedure document”.

[ISO 9000:2000]

3.148**process**

set of interrelated or interacting activities which transform inputs into outputs

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

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

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

[ISO 9000:2000]

3.149**product**

result of a **process**

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**);
- processed **materials** (e.g. lubricant).

Many products comprise elements belonging to different generic product categories. Whether the product is then called service, software, hardware or processed material depends on the dominant element. For 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** and **customer** and is generally intangible. Provision of a service can involve, for example, the following:

- 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 needed 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 and is generally intangible and can be in the form of approaches, transactions or **procedures**.

Hardware is generally tangible and its amount is a countable **characteristic**. 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** is mainly focused on intended product.

[ISO 9000:2000]

3.150 **product assurance**

discipline devoted to the study, planning and implementation of activities intended to assure that the **design**, controls, methods and techniques in a **project** result in a satisfactory degree of **quality** in a **product**

[EN 13701:2001]

3.151 **product state**

particular **configuration** of the **product** related to the current **configuration baseline**

[EN 13701:2001]

3.152 **product tree**

hierarchical structure depicting the product orientated breakdown of the project into successive levels of detail down to the configuration items necessary to deliver the **required functions**

3.153

programme

group of **projects** managed in a coordinated way to obtain benefits not available from managing them individually

[PMI Institute]

3.154

project

unique **process** consisting of a set of coordinated and controlled activities with start and finish dates, undertaken to achieve an objective conforming to specific **requirements**, 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** defined progressively as the project proceeds.

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

NOTE 4 Adapted from ISO 10006:1997.

[ISO 9000:2000]

3.155

project phase

part of a total **project** 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**

NOTE Adapted from BS 6079:1996

3.156

project requirements documents

documents, including all **normative references**, which establish **requirements**

NOTE 1 Examples of project requirements documents include, **standards**, management **specifications**, technical specifications, statements of work and data requirement lists.

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

NOTE 3 Adapted from EN 13701:2001.

3.157

provision

expression in the context of a **normative document**, that takes the form of a statement, an instruction, a recommendation or a **requirement**

NOTE These types of provision are distinguished by the form of wording they employ, 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”.

[EN 45020:1998]

3.158

purchaser

customer in a contractual situation

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

[EN 13701:2001]

3.159

qualification process

process to demonstrate the ability to fulfil specified **requirements**

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

NOTE 2 Qualification can concern persons, **products**, processes or **systems**.

EXAMPLE Auditor qualification process, **material** qualification process.

[ISO 9000:2000]

3.160

quality

degree to which a set of inherent **characteristics** fulfils **requirements**

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 9000:2000]

3.161

quality assurance

part of quality management focused on providing confidence that quality **requirements** will be fulfilled

[ISO 9000:2000]

3.162

quality characteristic

inherent **characteristic** of a **product**, **process** or **system** related to a **requirement**

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

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

[ISO 9000:2000]

3.163

quality control

part of quality management focused on fulfilling quality **requirements**

[ISO 9000:2000]

3.164

quality improvement

part of quality management focused on increasing the ability to fulfil quality **requirements**

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

[ISO 9000:2000]

3.165**quality manual**

document specifying the quality management system of an **organization**

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

[ISO 9000:2000]

3.166**quality plan**

document specifying which **procedures** and associated resources shall be applied by whom and when to a specific project, product, process or contract

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** or to procedure documents.

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

[ISO 9000:2000]

3.167**quality planning**

part of quality management focused on setting quality objectives and specifying necessary operational **processes** and related resources to fulfil the quality objectives

NOTE Establishing **quality plans** can be part of **quality planning**.

[ISO 9000:2000]

3.168**record**

document stating results achieved or providing evidence of activities performed

NOTE 1 Records can be used, for example, to document **traceability** and to provide evidence of **verification**, **preventive action** and **corrective action**.

NOTE 2 Generally records need not be under revision control.

[ISO 9000:2000]

3.169**recurrent cost**

costs incurred for each additional, identical **item** produced

3.170**redundancy**

existence of more than one means for performing a given **function**

NOTE Adapted from IEC Multilingual Dictionary:2001 edition.

3.171**regrade**

alteration of the **grade** of a nonconforming **product** in order to make it conform to **requirements** differing from the initial ones

[ISO 9000:2000]

3.172

reliability

the ability of an **item** to perform a **required function** under given conditions for a given time interval

NOTE 1 It is generally assumed that the item is in a state to perform this required function at the beginning of the time interval.

NOTE 2 Generally, reliability performance is quantified using appropriate measures. In some applications these measures include an expression of reliability performance as a probability, which is also called reliability.

[IEC Multilingual Dictionary:2001 edition]

3.173

repair

action on a nonconforming **product** 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**.

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

[ISO 9000:2000]

3.174

required function

a **function** or a combination of functions of an **item** which is considered necessary to provide a given service

[IEC Multilingual Dictionary:2001 edition]

3.175

requirement

need or expectation that is stated, generally implied or obligatory

NOTE 1 “Generally implied” means that it is custom or common practice for the **organization**, its **customers** and other **interested parties**, that the need or expectation under consideration is implied.

NOTE 2 A qualifier can be used to denote a specific type of requirement, e.g. **product** requirement, quality management requirement, **customer** requirement.

NOTE 3 A specified requirement is one which is stated, for example, in a **document**.

NOTE 4 Requirements can be generated by different interested parties.

[ISO 9000:2000]

3.176

residual risk

risk remaining after implementation of risk reduction measures

[ISO 17666:2003]

3.177

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**.

EXAMPLE Management review, **design** and **development** review, review of **customer** requirements and **nonconformity** review.

[ISO 9000:2000]

3.178

rework

action on a nonconforming **product** to make it conform to the **requirements**

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

[ISO 9000:2000]

3.179

risk

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

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

[ISO 17666:2003]

3.180

risk management

systematic and iterative optimization of the project resources, performed according to the established project risk management policy

[ISO 17666:2003]

3.181

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 for the risk management plan

[ISO 17666:2003]

3.182

safety

system state where an acceptable level of risk with respect to

- fatality,
- injury or occupational illness,
- damage to **launcher** hardware or launch site facilities,
- damage to an element of an interfacing manned flight system,
- the main **functions** of a flight system itself,
- pollution of the environment, atmosphere or outer space, and
- damage to public or private property

is not exceeded

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

3.183

safety critical function

function that, if lost or degraded, or as a result of incorrect or inadvertent operation, can result in catastrophic or critical consequences

[EN 13701:2001]

3.184

safing

action of containment or control of emergency and warning situations, or placing a **system** (or part thereof), in a predetermined safe condition

NOTE Adapted from EN 13701:2001.

3.185

scrap

action on a nonconforming **product** to preclude its originally intended use

EXAMPLE Recycling, destruction.

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

[ISO 9000:2000]

3.186

security

protection from unauthorized access or uncontrolled losses or effect

3.187

series production

production of recurring **products**

[EN 13701:2001]

3.188

severity

classification of a **failure** or undesired event according to the magnitude of its possible consequences

[EN 13701:2001]

3.189

single point failure

failure of an item which results in the unrecoverable failure of the product

3.190

software module

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

[EN 13701:2001]

3.191

software product

set of computer programs, **procedures**, documentation and their associated data

3.192

software product assurance

totality of activities, **standards**, controls and **procedures** in the lifetime of a software product which establishes confidence that the delivered software product, or software affecting the **quality** of the delivered product conforms to the **customer** requirements

3.193

space element

product or a set of products intended to be operated in space

NOTE Adapted from EN 13701:2001.

3.194**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 in "elements" potassium-sodium alloy (NaK) and other such constituents are included.

3.195**space project**

project that produces a **space system**

[EN 13701:2001]

3.196**space system**

system that contains at least one **space element**

[EN 13701:2001]

3.197**spacecraft**

any self-contained vehicle designed for space flight

NOTE The term "space vehicle" is synonymous.

3.198**specification**

document stating **requirements**

NOTE A specification can be related to activities (e.g. **procedure** document, **process** specification and **test** specification), or **products** (e.g. product specification, **performance** specification and drawing)

[ISO 9000:2000]

3.199**standard**

document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or **characteristics** 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 45020:1998]

3.200**statement of work**

contractual **document** prepared during **project** initiation and planning that describes what the project shall deliver and outlines all work required to complete the project

3.201**stress-corrosion**

combined action of sustained tensile stress and corrosion that can lead to premature failure of materials

3.202**subcontract**

contract between a **contractor** and their subordinate contractor in the **customer-supplier** chain to obtain **materials** or other inputs to a **product**

3.203

subsystem

set of interdependent elements constituted to achieve a given objective by performing a specified **function**, but which does not, on its own, satisfy the **customer's** need

[EN 13701:2001]

3.204

supplier

organization or person that provides a **product**

EXAMPLE Producer, distributor, retailer or vendor of a product, or provider of a service or **information**.

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

NOTE 2 In a contractual situation a supplier is sometimes called "**contractor**".

[ISO 9000:2000]

3.205

support system

All resources and **organization** needed to maintain the **performance** capabilities of the **supported system** from **acceptance** to the end of disposal

NOTE Some **items** can start as part of the **system** and later, modified as necessary, becomes part of the support system, (e.g. electrical ground support **equipment**).

[EN 13701:2001]

3.206

supported system

product which performs the **functions** required by the **customer**

[EN 13701:2001]

3.207

system

set of interrelated or interacting elements

[ISO 9000:2000]

NOTE The system is considered to be separated from the environment and other external systems by an imaginary surface which 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.

3.208

tailoring

process by which individual **requirements** of **specifications, standards** and related **documents** are evaluated, and made applicable to a specific **project** by selection, and in some exceptional cases, modification of existing or addition of new requirements

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

[EN 13701:2001]

3.209**technical expert**

<audit> person who provides specific knowledge of or expertise on the subject to be audited

NOTE 1 Specific knowledge or expertise includes knowledge of or expertise on the **organization, process** or activity to be audited, as well as language or cultural guidance.

NOTE 2 A technical expert does not act as an **auditor** in the **audit team**.

[ISO 9000:2000]

3.210**technical specification**

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.

3.211**test**

formal process of exercising or putting to trial a system or item by manual or automatic means to identify differences between specified, expected and actual results

3.212**third party**

person or body that is recognized as being independent of the parties involved, as concerns the issue in question

NOTE Parties involved are usually **supplier** (“first party”) and **purchaser** (“second party”) interests.

[EN 45020:1998]

3.213**top management**

person or group of people who directs and controls an **organization** at the highest level

[ISO 9000:2000]

3.214**toxic**

characteristic of a substance causing serious, acute or chronic effects, even death, when inhaled, swallowed or absorbed through the skin

3.215**traceability**

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

NOTE 1 When considering **product**, traceability can relate to

- the origin of **materials** and **parts**,
- the processing history, and
- the distribution and location of the product after delivery.

NOTE 2 In the field of metrology the definition in VIM:1993, 6.10, is the accepted definition.

[ISO 9000:2000]

3.216

uncertainty

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

3.217

undesirable event

event whose consequences are detrimental for the success of the mission

NOTE Adapted from ISO/IEC 12207:1995.

3.218

validation

confirmation, through the provision of **objective evidence** that the **requirements** 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.

[ISO 9000:2000]

3.219

verification

confirmation through the provision of **objective evidence** that specified **requirements** have been fulfilled

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

NOTE 2 Confirmation can comprise activities such as

- performing alternative calculations
- comparing a new design **specification** with a similar proven design specification
- undertaking **tests** and demonstrations, and
- reviewing **documents** prior to issue.

[ISO 9000:2000]

3.220

waiver

see “**concession**”

3.221

warning condition

condition where potentially catastrophic or critical **hazardous events** are imminent and preplanned **safing** action is required within a limited time

[EN 13701:2001]

3.222

work breakdown structure

hierarchical representation of the activities necessary to complete a **project**

NOTE Adapted from EN 13701:2001.

3.223

work environment

set of conditions under which work is performed

NOTE Conditions include physical, social, psychological and environmental factors (such as temperature, recognition schemes, ergonomics and atmospheric composition).

[ISO 9000:2000]

3.224**work package**

group of related tasks that are defined at the lowest level within a **work breakdown structure**

[EN 13701:2001]

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Abbreviated terms

The following abbreviations are used in the space standards:

Abbreviation	Meaning
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
CDR	critical design review
CFRP	carbon fibre reinforced plastic
CIDL	configuration item data list
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
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
EPPL	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
FTA	fault tree analysis
GEO	geostationary orbit
GPS	global positioning system
GSE	ground support equipment
GSO	geosynchronous orbit
G/S	ground segment
HCI	human-computer interaction
HEO	high eccentric orbit
HFE	human factors engineering
H/W	hardware
ICD	interface control document
ILS	integrated logistic support
IRD	interface requirement document

IVA	intra vehicular activities
I/F	interface
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
MEOP	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
MTBF	mean time between failures
NDI	non-destructive inspection
NCR	nonconformance report
NRB	nonconformance review board
n.a.	not applicable
N/A	not applicable
OBDH	on-board data handling
ORR	operational readiness review
OTS	off-the-shelf
PA	product assurance
PCB	printed circuit board
PDR	preliminary design review
PFCI	potential fracture critical item
PFM	protoflight model
PPL	preferred parts list
PRR	preliminary requirements review
P/L	payload
QA	quality assurance
QM	qualification model
QR	qualification review
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
S/C	spacecraft
S/W	software
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
TS	technical specification
TT&C	telemetry, tracking, and command
VCD	verification control document
WBS	work breakdown structure
WP	work package

Annex A (informative)

Explanatory notes of differences between Standard ECSS-P-001A, Rev.1 and ECSS-P-001B

1. Version B is an update of version A, incorporating the following changes
 - a. Addition of new terms and definitions from ISO 9000:2000
 - b. Revision of existing terms and definitions where ISO 9000:2000 is different
 - c. Revision of existing terms and definitions to incorporate the latest authoritative version from other ECSS standards
 - d. Addition of new terms and definitions extracted from existing ECSS standards where they are of likely application to more than one ECSS standard (for clarity and consistency)
 - e. Update of references; deleting references to cancelled or untraceable standards
 - f. Deletion of words whose meaning is not appropriately defined or the definition is no longer valid.
2. The Foreword explains that terms which contain words that are also defined in the standard are highlighted in bold as an aid to clarity and consistency of meaning.

Term	Ref.	Changes
acceptance	3.1	deleted "The" at start of definition
acceptance stage	3.2	new definition taken from ECSS-E-10-02A
acceptance test	3.3	new definition taken from ECSS-E-30 Part 3A
accident	3.4	deleted "An" at start of definition, substituted word "item" for "items", substituted word "that" for "which" throughout, and substituted words "that can" for "which could" in 3.2 b
alert	3.5	deleted "The" at start of definition, substituted word "may" for "can" in the note
allowable load	3.6	new definition modified from ISO 14623:2003
allowable stress	3.7	new definition modified from ISO 14623:2003
anomaly	3.8	no change
applicable document	3.9	new definition
approval	3.10	in the Note 1, substituted words "complies with" for "conforms to", and deletion of the end of the sentence

Term	Ref.	Changes
assembly	3.11	new definition
assurance	3.12	substituted word “fulfils” for words “will fulfil”, deleted “All the” at start of definition
audit	3.13	replaced with ISO 9000:2000 definition
audit client	3.14	new definition taken from ISO 9000:2000
audit conclusion	3.15	new definition taken from ISO 9000:2000
audit criteria	3.16	new definition taken from ISO 9000:2000
audit evidence	3.17	new definition taken from ISO 9000:2000
audit findings	3.18	new definition taken from ISO 9000:2000
audit programme	3.19	new definition taken from ISO 9000:2000
audit team	3.20	new definition taken from ISO 9000:2000
auditee	3.21	new definition taken from ISO 9000:2000
auditor	3.22	new definition taken from ISO 9000:2000
availability	3.23	Note 5 is added
bakeout	3.24	new definition taken from ECSS-Q-70-02A
baseline	3.25	Note added
black box	3.26	new definition taken from ECSS-Q-30-02A
business agreement	3.27	no change
calibration	3.28	deleted reference to “IEC 50:1992”; and replaced with “IEC Multilingual Dictionary:2001 edition”
capability	3.29	new definition taken from ISO 9000:2000
caution condition	3.30	deleted “A” at start of definition, deleted “might require” and replaced with “can call for”
certification	3.31	no change
characteristic	3.32	new definition taken from ISO 9000:2000
clean area	3.33	new definition modified from ECSS-Q-70-01A
common cause failure	3.34	deleted word “which”, replaced with word “that”, and deleted reference to “NUREG/CR – 2300 PRA 1982” (it cannot be traced)
common mode failure	3.35	new definition taken from EN 13701:2001, but replaced word “similar” with “identical”
common mode fault	3.36	deleted word “which”, replaced with word “that”
competence	3.37	new definition taken from ISO 9000:2000
concession	3.38	new definition taken from ISO 9000:2000 (see also comment at “waiver”)
configuration	3.39	no change
configuration baseline	3.40	no change
configuration control	3.41	Note 3 added
configuration documents	3.42	Note 3 added
configuration identification	3.43	no change
configuration item	3.44	no change
configuration management	3.45	no change
configuration status accounting	3.46	no change
configuration verification	3.47	Note added
conformity	3.48	new definition taken from ISO 9000:2000
constraint	3.49	new definition taken from ECSS-E-10 Part 6A
contamination	3.50	new definition modified from ECSS-Q-70-08A
contingency procedure	3.51	no change
continual improvement	3.52	new definition taken from ISO 9000:2000
contract	3.53	no change
contractor	3.54	replaced with EN 13701:2001 definition
correction	3.55	new definition taken from ISO 9000:2000
corrective action	3.56	replaced with ISO 9000:2000 definition

Term	Ref.	Changes
corrosion	3.57	new definition
cost breakdown structure	3.58	new definition
critical item	3.59	replaced with ECSS-Q-20-04A definition
critical path	3.60	new definition
customer	3.61	replaced with ISO 9000:2000 definition
customer satisfaction	3.62	new definition taken from ISO 9000:2000
defect	3.63	new definition taken from ISO 9000:2000
dependability	3.64	replaced with ISO 9000:2000 definition
derating	3.65	no change
design <result>	3.66	replaced with EN 13701:2001 definition
design <activity>	3.67	replaced with EN 13701:2001 definition
design and development	3.68	new definition taken from ISO 9000:2000
design to minimum risk	3.69	replaced with EN 13701:2001 definition
development	3.70	deleted "The" at start of definition, and substituted "can" for "may" in note
deviation permit	3.71	replaced with ISO 9000:2000 definition
document	3.72	replaced with ISO 9000:2000 definition
EEE component	3.73	deleted "A" at start of definition, put second sentence as a note and substituted word "may" for "can" in the note
effectiveness	3.74	new definition taken from ISO 9000:2000
efficiency	3.75	new definition taken from ISO 9000:2000
emergency	3.76	wording amended to that in ECSS-Q-40B
environment	3.77	new definition
equipment	3.78	new definition taken from IEC Multilingual Dictionary:2001 edition
error	3.79	deleted reference to "IEC 50 :1999", replaced with "IEC Multilingual Dictionary:2001 edition" and relocated at end of definition
estimate at completion	3.80	definition adapted from EN 13701:2001
estimate to completion	3.81	definition adapted from EN 13701:2001
fail-safe	3.82	new definition taken from IEC Multilingual Dictionary:2001 edition
failure	3.83	replaced with EN 13701:2001 definition, but amended reference to read "IEC Multilingual Dictionary:2001 edition"
failure mode	3.84	deleted note, definition no longer same as "fault mode" in IEC 50:1992 (nor is it in IEC Multilingual Dictionary:2001 edition)
failure tolerance	3.85	new definition based on "fault tolerance" definition
fault <state>	3.86	replaced with EN 13701:2001 definition, but amended reference to read "IEC Multilingual Dictionary:2001 edition"
fault <event>	3.87	replaced with EN 13701:2001 definition, but amended reference to read "IEC Multilingual Dictionary:2001 edition"
fault tolerance	3.88	same wording, but added reference "IEC Multilingual Dictionary:2001 edition" at end of definition
firmware	3.89	second sentence now shown as a note, but amended reference to read "ISO/IEC 9126-1:2001"
flammability	3.90	new definition taken from ECSS-Q-70-21A
flashpoint	3.91	new definition
flight operations	3.92	new definition taken from ECSS-E-70 Part 1A
function	3.93	new definition adapted from EN 1325-1:1997
function tree	3.94	new definition

Term	Ref.	Changes
functional analysis	3.95	new definition adapted from EN 1325-1:1997
grade	3.96	new definition taken from ISO 9000:2000
ground operations	3.97	new definition taken from ECSS-E-70 Part 1A
ground systems	3.98	new definition taken from ECSS-E-70 Part 1A
hazard	3.99	similar to ECSS-Q-40B but word "mishap" to read "accident", and amended reference to read "ISO 14620-2:2000"
hazardous event	3.100	new definition
human error	3.101	new definition
implementation documents	3.102	no change
incident	3.103	wording amended to that in ECSS-Q-40B
information	3.104	replaced with ISO 9000:2000 definition
infrastructure	3.105	new definition taken from ISO 9000:2000
inhibit	3.106	wording amended to that in ECSS-Q-40B
inspection	3.107	replaced with ISO 9000:2000 definition
instantaneous availability	3.108	amended reference to read, "IEC Multilingual Dictionary:2001 edition"
integration	3.109	new definition
integrity	3.110	new definition
interface	3.111	new definition
item	3.112	new definition taken from IEC Multilingual Dictionary:2001 edition
launcher	3.113	new definition
life cycle	3.114	new definition
life cycle cost	3.115	replaced with definition adapted from EN 13701:2001
life profile	3.116	new definition
lifetime	3.117	new definition adapted from ECSS-E-30 Part 6A
maintainability	3.118	amended reference to read "IEC Multilingual Dictionary:2001 edition"
maintenance	3.119	amended reference to read "IEC Multilingual Dictionary:2001 edition"
management	3.120	new definition taken from ISO 9000:2000
management system	3.121	new definition taken from ISO 9000:2000
material	3.122	similar to ECSS-Q-70A, but with "A" deleted at start of definition
matériel	3.123	wording amended to that in EN 13701:2001
mean time between failures	3.124	amended reference to read "IEC Multilingual Dictionary:2001 edition" and relocated at end of definition
measurement control system	3.125	new definition taken from ISO 9000:2000
measurement process	3.126	new definition taken from ISO 9000:2000
measuring equipment	3.127	new definition taken from ISO 9000:2000
mechanical part	3.128	deleted "A" at start of definition
metrological characteristic	3.129	new definition taken from ISO 9000:2000
metrological confirmation	3.130	new definition taken from ISO 9000:2000
metrological function	3.131	new definition taken from ISO 9000:2000
mission	3.132	deleted "The" at start of definition
model	3.133	deleted "A" at start of definition, and deleted "; to create or use such a model" at end of definition
need	3.134	new definition adapted from EN 1325-1:1997
nonconformance	3.135	reference to "nonconformity"
nonconformity	3.136	Was "nonconformance", replaced with ISO 9000:2000 definition, with added note of acknowledgement
normative document	3.137	deleted "A" at start of definition
normative reference	3.138	deleted "A" at start of definition

Term	Ref.	Changes
objective evidence	3.139	new definition taken from ISO 9000:2000
organization	3.140	new definition taken from ISO 9000:2000
organizational structure	3.141	new definition adapted from ISO 9000:2000
outage	3.142	amended reference to read "IEC Multilingual Dictionary:2001 edition"
part	3.143	deleted "Any" at start of definition
payload	3.144	new definition taken from ECSS-E-30 Part 3A
performance	3.145	deleted "Those generally quantified" at start of definition, and added NOTE
preventive action	3.146	replaced with ISO 9000:2000 definition
procedure	3.147	replaced with ISO 9000:2000 definition
process	3.148	replaced with ISO 9000:2000 definition
product	3.149	replaced with ISO 9000:2000 definition
product assurance	3.150	deleted "A" at start of definition and substituted "level" for "degree"
product state	3.151	deleted "A" at start of definition
product tree	3.152	new definition
programme	3.153	new definition taken from PMI Institute
project	3.154	replaced with ISO 9000:2000 definition
project phase	3.155	amended (two sentences combined into one)
project requirements documents	3.156	deleted "Those" at start of definition, and ", but are not limited to," in NOTE 1
provision	3.157	new definition taken from EN 45020:1998
purchaser	3.158	same text, but omitted reference to ISO 8402:1994
qualification process	3.159	replaced with ISO 9000:2000 definition
quality	3.160	replaced with ISO 9000:2000 definition
quality assurance	3.161	replaced with ISO 9000:2000 definition
quality characteristic	3.162	new definition taken from ISO 9000:2000
quality control	3.163	replaced with ISO 9000:2000 definition
quality improvement	3.164	new definition taken from ISO 9000:2000
quality manual	3.165	new definition taken from ISO 9000:2000
quality plan	3.166	new definition taken from ISO 9000:2000
quality planning	3.167	new definition taken from ISO 9000:2000
record	3.168	replaced with ISO 9000:2000 definition
recurrent cost	3.169	no change
redundancy	3.170	new definition
regrade	3.171	new definition taken from ISO 9000:2000
reliability	3.172	wording amended to that in IEC Multilingual Dictionary:2001 edition, and with correct reference
repair	3.173	replaced with ISO 9000:2000 definition
required function	3.174	amended reference to read "IEC Multilingual Dictionary:2001 edition"
requirement	3.175	replaced with ISO 9000:2000 definition
residual risk	3.176	wording amended to that in ECSS-M-00-03A
review	3.177	replaced with ISO 9000:2000 definition
rework	3.178	replaced with ISO 9000:2000 definition
risk	3.179	wording amended to that in ECSS-M-00-03A, but omitted word "an" at start of definition
risk management	3.180	new definition taken from ISO 17666:2003
risk management policy	3.181	new definition taken from ISO 17666:2003
safety	3.182	wording amended to that in ECSS-Q-40B, but omitted word "a" at start of definition
safety critical function	3.183	wording amended to that in ECSS-Q-40B
safing	3.184	wording amended to that in ECSS-Q-40B

Term	Ref.	Changes
scrap	3.185	new definition taken from ISO 9000:2000
security	3.186	new definition
series production	3.187	no change
severity	3.188	deleted "A" at start of definition
single point failure	3.189	new definition taken from ECSS-Q-30-02A
software module	3.190	deleted "The" at start of definition
software product	3.191	title is software product; wording amended to that in ECSS-Q-80B
software product assurance	3.192	wording amended to that in ECSS-Q-80B
space element	3.193	deleted "A" at start of definition, and deleted word "outer" from "outer space"
space debris	3.194	new definition
space project	3.195	deleted "A" at start of definition, and replaced word "which" with word "that"
space system	3.196	deleted "A" at start of definition, and replaced word "which" with "that"
spacecraft	3.197	new definition
specification	3.198	replaced with ISO 9000:2000 definition
standard	3.199	new definition taken from EN 45020:1998
statement of work	3.200	new definition
stress-corrosion	3.201	new definition adapted from ECSS-Q-70-36A
subcontract	3.202	reorganized definition
subsystem	3.203	no change
supplier	3.204	replaced with ISO 9000:2000 definition
support system	3.205	no change
supported system	3.206	no change
system	3.207	replaced with ISO 9000:2000 definition
tailoring	3.208	wording amended to that in ECSS-M-00-02A
technical expert	3.209	new definition taken from ISO 9000:2000
technical specification	3.210	new definition taken from ECSS-E-10 Part 6A
test	3.211	new definition
third party	3.212	no change
top management	3.213	new definition taken from ISO 9000:2000
toxic	3.214	new definition adapted from ECSS-Q-70-25A
traceability	3.215	replaced with ISO 9000:2000 definition
uncertainty	3.216	new definition
undesirable event	3.217	new definition adapted from ISO/IEC 12207:1995
validation	3.218	replaced with ISO 9000:2000 definition
verification	3.219	replaced with ISO 9000:2000 definition
waiver	3.220	reference to "concession"
warning condition	3.221	no change
work breakdown structure	3.222	deleted "and resources"
work environment	3.223	new definition taken from ISO 9000:2000
work package	3.224	deleted "A" at start of definition

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<h2 style="text-align: center;">ECSS Document Improvement Proposal</h2>		
1. Document I.D. ECSS P-001B	2. Document date 14 July 2004	3. Document title Glossary of terms
4. Recommended improvement (identify clauses, subclauses and include modified text or graphic, attach pages as necessary)		
(Empty space for recommended improvement)		
5. Reason for recommendation		
(Empty space for reason for recommendation)		
6. Originator of recommendation		
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