

BS EN 16601-40:2014



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Space project management

Part 40: Configuration and information management

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National foreword

This British Standard is the UK implementation of EN 16601-40:2014. It supersedes BS EN 13290-5:2001 and BS EN 13290-6:2001 which are withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ACE/68, Space systems and operations.

A list of organizations represented on this committee can be obtained on request to its secretary.

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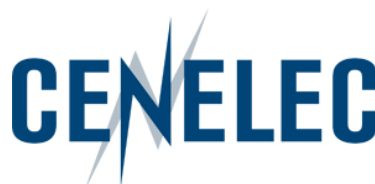
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und Informationsmanagement

This European Standard was approved by CEN on 14 December 2013.

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Foreword

This document (EN 16601-40:2014) has been prepared by Technical Committee CEN/CLC/TC 5 "Space", the secretariat of which is held by DIN.

This standard (EN 16601-40:2014) originates from ECSS-M-ST-40C Rev. 1.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2015, and conflicting national standards shall be withdrawn at the latest by February 2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13290-5:2001 and 13290-6:2001.

This document has been developed to cover specifically space systems and has therefore precedence over any EN covering the same scope but with a wider domain of applicability (e.g. : aerospace).

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This document defines the configuration management and information/documentation requirements for space projects.

The document is structured into two main parts, the first part presenting the processes and the second one providing the detailed requirements.

In addition, the expected configuration and information/documentation management documentation is specified in the annexed document requirements definitions (DRDs).

1

Scope

The scope of this standard is to describe the processes and provide the requirements for managing the information/documentation and configuration of products within a space programme or project.

The requirements specified herein apply to, and affect the supplier and customer at all levels.

This standard may be tailored for the specific characteristics and constraints of a space project in conformance with ECSS-S-ST-00.

2

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.

EN reference	Reference in text	Title
EN 16601-00-01	ECSS-S-ST-00-01	ECSS system – Glossary of terms
EN 16601-10	ECSS-M-ST-10	Space project management – Project planning and implementation
EN 16602-10-09	ECSS-Q-ST-10-09	Space product assurance – Nonconformance control system
EN 16602-20	ECSS-Q-ST-20	Space product assurance – Quality assurance

3

Terms, definitions and abbreviated terms

3.1 Terms from other standards

For the purpose of this Standard, the terms and definitions from ECSS-S-ST-00-01 apply, in particular for the following terms:

configuration
configuration baseline
configuration control
configuration document
configuration identification
configuration item
configuration management

3.2 Terms specific to the present standard

3.2.1 change control

activity for control of changes or departures to the product after formal approval of its configuration baseline

NOTE Adapted from ISO 10007.

3.2.2 class 1 change

change that affects approved technical specifications, including interfaces of the same level, and associated terms of the business agreement between a customer and his supplier

3.2.3 class 2 change

change that does not fulfil class 1 change criteria

3.2.4 configuration control board

person or a group of persons assigned responsibility and authority to make decisions on the configuration

NOTE 1 This configuration control board is called dispositioning authority in ISO 10007.

NOTE 2 Relevant interested parties within and outside the organization are represented on the configuration control board.

NOTE 3 Adapted from ISO 10007.

3.2.5 configuration definition document

document that defines the physical configuration and establishes the item or material identification code (part or identifying number) at any level in the product structure

NOTE Adapted from ASME Y14.100.

3.2.6 configured item

any level of product whose functional or physical characteristics are recorded in a retrievable, consistent manner

3.2.7 departure

inability of a product to meet one of its functional performance or technical requirements

NOTE 1 Two types exist:

- planned departure resulting in request for deviation, and
- unplanned departure resulting in request for waiver.

NOTE 2 Departures do not change the engineering documentation.

3.2.8 information/documentation management

process for ensuring timely and effective creation, collection, review, delivery, storage, and archiving of project information

3.2.9 information system

set of resources, procedures and data required in support of project management processes

3.2.10 metadata

metadata are structured, encoded data that describe characteristics of information-bearing entities to aid in the identification, discovery, assessment, and management of the described entities

NOTE Adapted from Committee on Cataloguing Task Force on metadata Summary Report.

3.2.11 product item

element of the product tree having a unique identifier

3.2.12 self-signed certificate

certificate auto-generated by the signer

3.2.13 technical data package

ZIP file containing structured collection of files with their related metadata, to be exchanged between information systems

NOTE Adapted from ISO10303 AP232 TDP definition.

3.2.14 technical description

technical definition in terms of documentation of a product, e.g. functional or performance, and design requirements, test and verification documentation, analyses, drawings, parts and material lists, processes and tooling.

3.3 Abbreviated terms

For the purpose of this Standard, the abbreviated terms from ECSS-S-ST-00-01 and the following apply:

Abbreviation	Meaning
ABCL	as-built configuration data list
AR	acceptance review
CAD	computer aided design
CAGE	commercial and government entity
CCB	configuration control board
CD	compact disk
CDR	critical design review
CI	configuration item
CIDL	configuration item data list
CM	configuration management
CP	change proposal
CR	change request
CSA	configuration status accounting
DB	design baseline
DCB	development configuration baseline
DRD	document requirements definition
DRL	document requirements list
DUNS	data universal numbering system
DXF	drawing exchange format
EIDP	end item data package
FCB	functional configuration baseline
FCV	functional configuration verification
FTP	file transfer protocol
H/W	hardware
ICD	interface control document
IDM	information documentation management
IEC	International Electrotechnical Commission
IETF	internet engineering task force
IS	information system

ISO	International Organization for Standardization
ITU	International Telecommunication Union
JPEG	joint photographic experts group
LZW	Lempel-Ziv-Welch
MOB	mission objective baseline
MS	Microsoft
NATO	North Atlantic Treaty Organization
NCR	nonconformance report
OTS	off-the-shelf
PA	product assurance
PCB	product configuration baseline
PCV	physical configuration verification
PDF	portable document format
PDR	preliminary design review
PI	product item
PMP	parts, materials and processes
PRR	preliminary requirements review
QR	qualification review
RFD	request for deviation
RFW	request for waiver
RID	review item discrepancy
ROM	read only memory
SCF	software configuration file
SMTP	simple mail transfer protocol
SRR	system requirements review
STEP	standard for the exchange of product
S/W	software
TDP	technical data package
TIFF	tagged image file format
TRR	test readiness review
TS	technical specification
WBS	work breakdown structure
XML	extensible mark-up language

4

Configuration management principles

4.1 Overview

4.1.1 Configuration and information/documentation activities

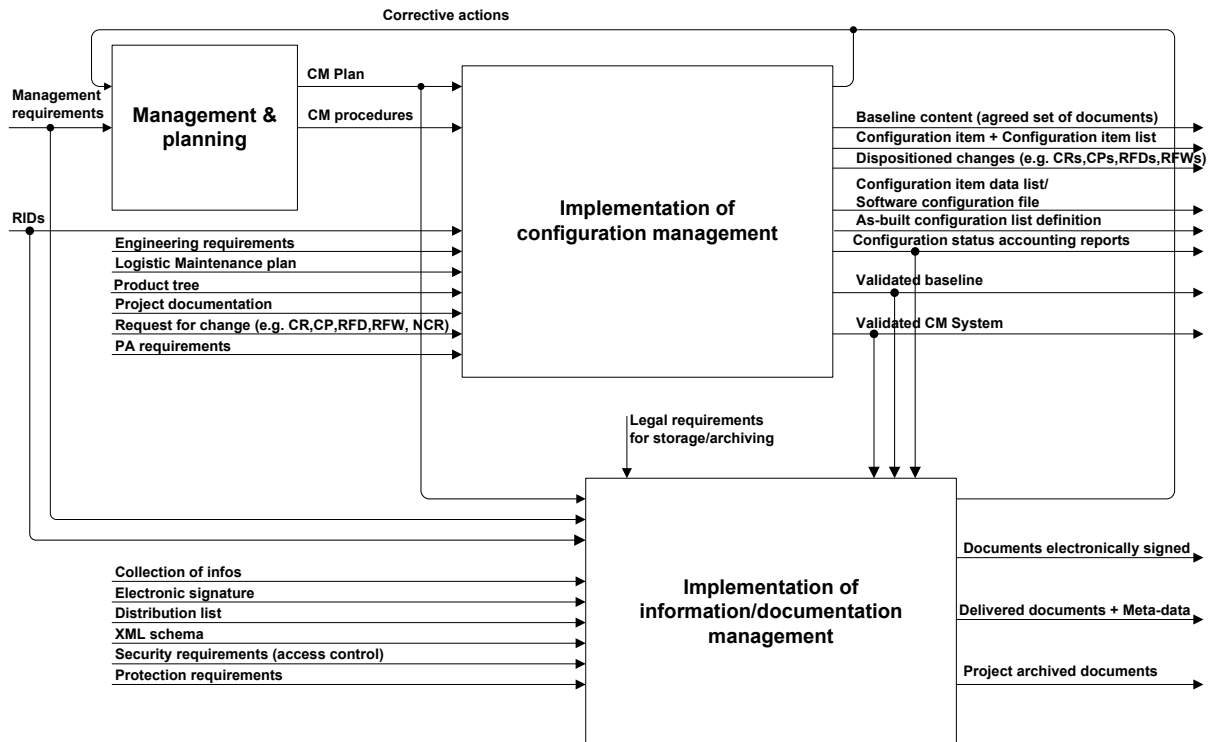
Configuration and information/documentation management are interrelated processes for managing projects. The main activities of these processes, depicted in Figure 4-1, are:

- management and planning;
- implementation of CM activities, i.e. configuration identification, control, status accounting, and verification and audit;
- implementation of IDM activities, i.e. creation, collection, review, delivery, storage and retrieval, and archiving.

4.1.2 Configuration management process and objectives

Configuration management is the process for establishing and maintaining a consistent record of a product's functional and physical characteristics compared to its design and operational requirements. Configuration management is applied throughout the entire life cycle of the product and allows one to:

- know at any time the technical description of a product using approved documentation;
- record and control the evolution in the technical description of a product (e.g. system and its products);
- provide traceability of the evolution of the product's technical description;
- ensure the consistency of the internal interfaces;
- verify and demonstrate to all actors that documentation is and remains the exact image of the products it describes;
- identify the current configuration baseline and the as-built configuration of a product, to record discrepancies detected during production, delivery or operation and dispositioned for further use;
- enable any actor to know the operational possibilities and limitations of each product item and, in case of nonconformance, to know which items are affected.



NOTE: Corrective actions are improvements on the process itself as a consequence of lessons learned and any feedback provided on the project

Figure 4-1 Configuration management

4.1.3 Information/documentation management process and objectives

Information/documentation management is the process for ensuring timely and effective creation, collection, review, delivery, storage, and archiving of project information. To achieve this objective, all recorded project information is managed electronically.

Information/documentation management is applied throughout the entire life cycle of the project and allows someone to

- ensure the correctness, accessibility, rapid availability, reliability and security of information provided to all the actors both internal and external to the project;
- ensure the coherence of the overall project information, thus facilitating effective and efficient use of the information;
- ensure that all the actors who need access to information are aware of its availability, the means of access, and related methods and procedures;
- support the programme / project reporting.

4.2 Management and planning

4.2.1 Configuration management plan

The customer defines the configuration management requirements for a programme or project. These requirements are applicable to all the actors of the programme or project as defined by the customer at each level towards his supplier(s). Each supplier produces a configuration management plan (CM plan) responding to his customer's configuration management requirements. The CM plan is submitted to the customer for approval. Upon customer approval, the supplier executes his own CM plan and ensures that his lower tier suppliers execute their CM plan.

The purpose of the CM plan is to define the process and resources for managing the configuration of the product in a controlled and traceable manner throughout the programme or project life cycle. It also describes the means for an efficient comparison between the predicted ("as-designed") and the actual ("as-built") configuration of the delivered product. It defines the relationship with the project management, system engineering and quality management process.

It either provides all elements necessary to ensure that the implementation of the information/documentation management meets all customer requirements, and that it is in line with the programme or project organization and management structure.

The customer defines the programme or project phase during which the CM plan is prepared and approved.

Each actor assigns a person responsible for implementing configuration management activities and for implementing information/documentation management activities within his programme or project team. His role, responsibilities and authorities are described in the CM plan.

4.2.2 Configuration management interfaces

Configuration management and Information/documentation management are integral parts of project management. Configuration management interfaces with engineering, product assurance, manufacturing and production and contributes to programme or project organization and their schedule for execution by identifying all constraints related to the business agreement provisions. Information/documentation management interfaces with configuration management and it contributes to programme or project activities by provision of all the necessary information through the information system. The information system is a repository of information where the project disciplines implement data and activate processes. These interfaces are used to establish the configuration management process.

Necessary inputs for configuration management are depicted in Figure 4-2.

Figure 4-3 summarizes the outputs provided by configuration management and Information/documentation management to other project activities.

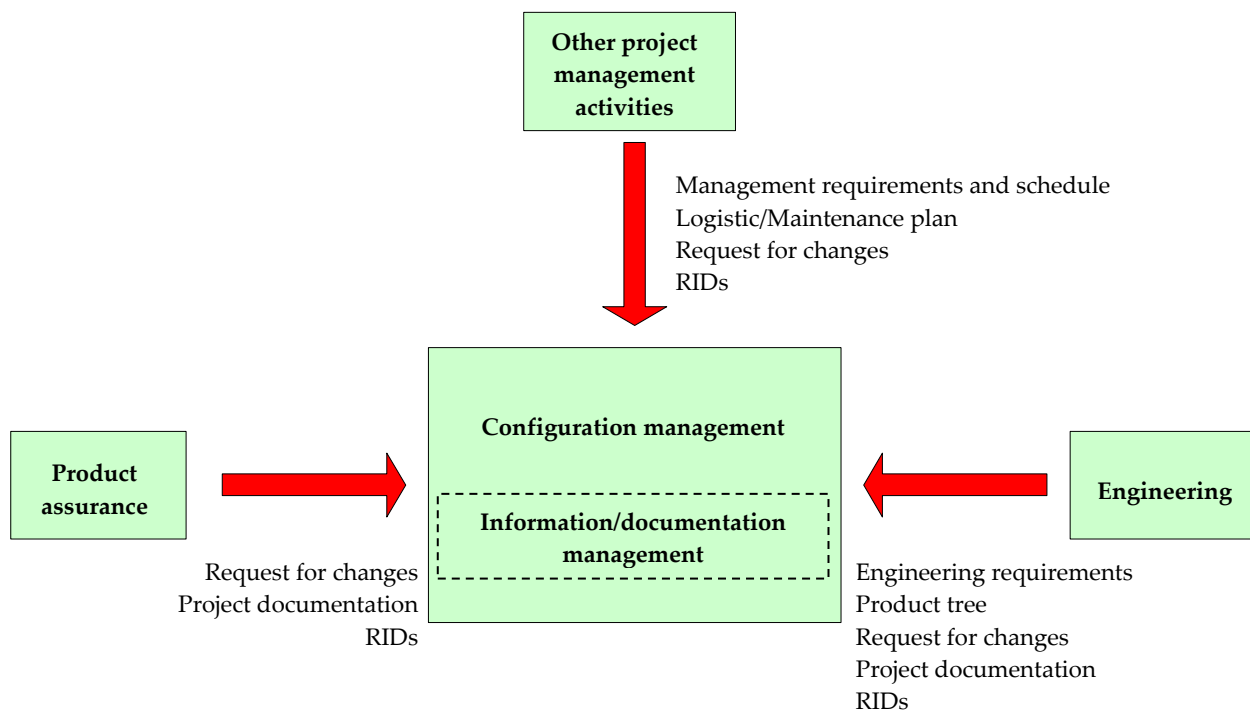


Figure 4-2 Configuration management interface (inputs)

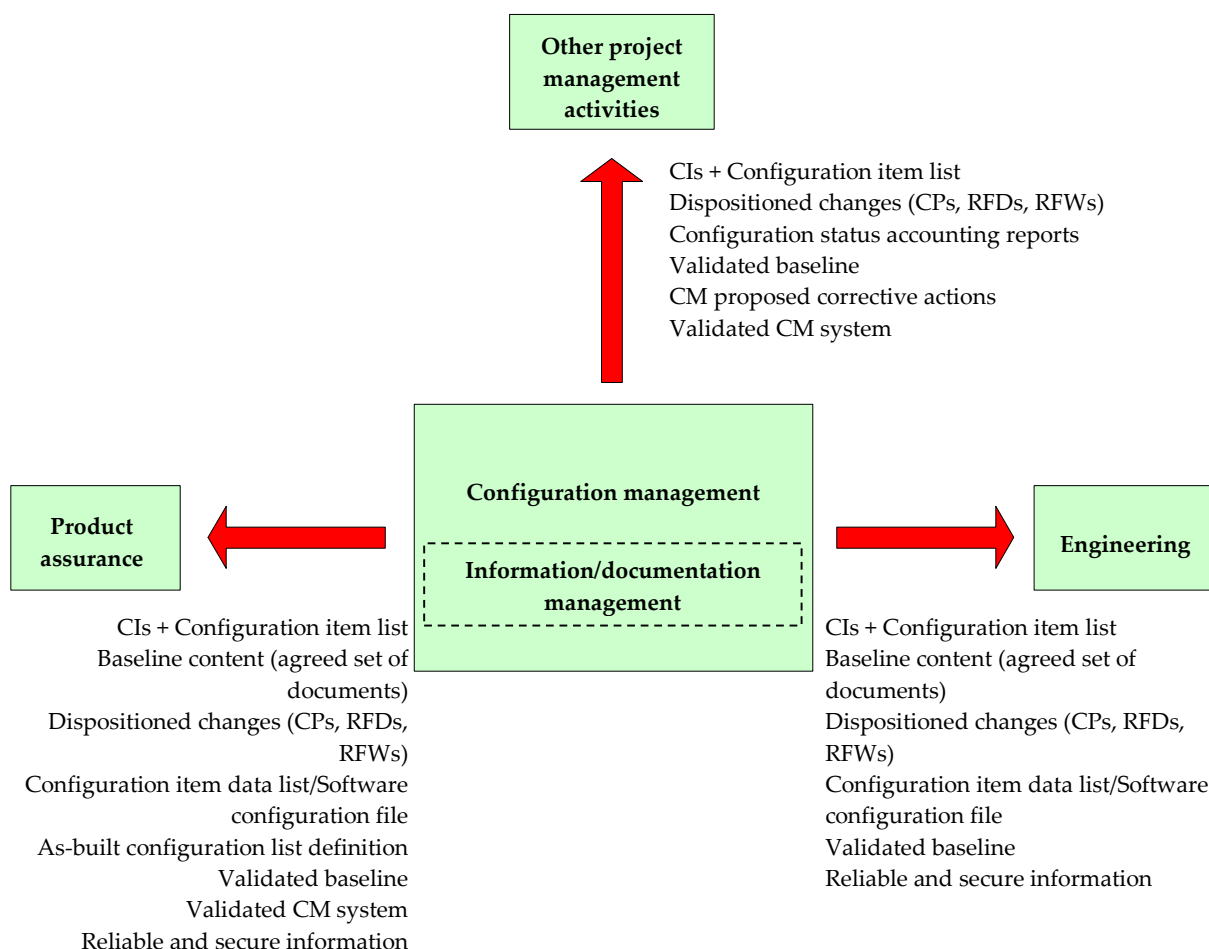


Figure 4-3 Configuration management interface (outputs)

4.3 Implementation of configuration management

4.3.1 Overview

Implementation of configuration management comprises definition, organization, execution and supervision of the following activities, as depicted in Figure 4-4:

- Configuration identification
 - to identify the product architecture;
 - to select configuration items and to define their configuration documents;
 - to establish means for identifying products and documentation;
 - to define identification requirements for software media;
 - to establish configuration baselines for the purpose of requirements- and design-management.

- Configuration control
 - to establish and implement a change control process for individual products and systems, and their internal and external interfaces;
 - to record and control the configuration of a product at any time during its evolution;
 - to record the different configurations of a product;
 - to define and maintain software libraries or repositories where current and historic software baselines are stored in a controlled environment;
 - to store and maintain software products and relevant media including back-up copies in a controlled environment.
- Configuration status accounting
 - to provide a product definition by reference to approved and recorded configuration statuses;
 - to enable access to software libraries according to established privileges.
- Configuration verification and audit
 - to verify and demonstrate that the product meets its documented functional, performance and physical characteristics;
 - to verify that the configuration management system is effective and meets the programme or project configuration management requirements.

Implementation of information/documentation management comprises the activities depicted in Figure 4-8 and described in clause 4.3.8.

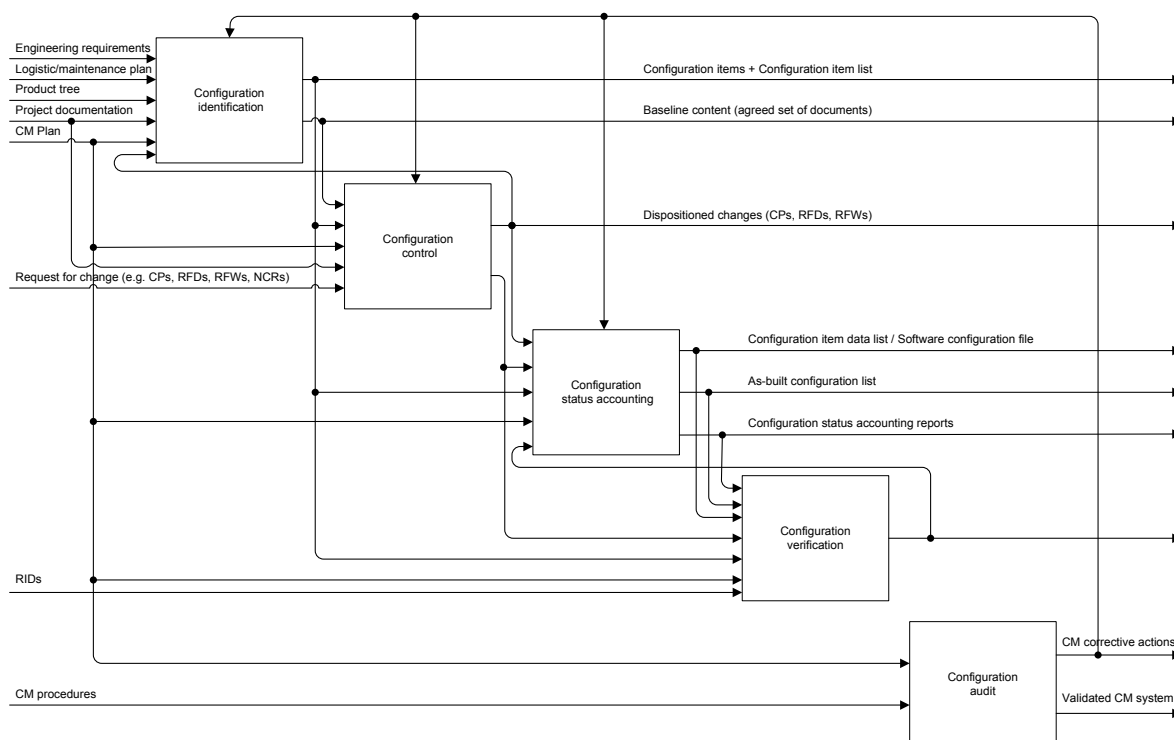


Figure 4-4 Implementation of configuration management

4.3.2 Configuration identification

4.3.2.1 Overview

Configuration identification, as depicted in Figure 4-5, incrementally establishes and releases controlled documentation for the purpose of identifying configuration characteristics of a product until it is fully defined with respect to its intended functional, performance and physical characteristics, thereby ensuring the continuous integrity of the product configuration.

Configuration identification also provides the basis for evolution through controlled changes and status accounting of a product throughout its life cycle. It ensures that all programme or project disciplines are provided with identical documentation for their use.

By applying product item identifiers to the product, configuration identification enables traceability from the product to its defining documentation.

The product item identifier is represented through the item identification code established by the governing configuration definition document. The product item identifier can be

- the same code applied for identifying the configuration definition document,
- a code containing this code, or
- a different code defined within the configuration definition document.

NOTE To avoid the possible existence of the same product item identifier for different product item(s), a common practice is to prefix the product item identifier with an enterprise identifier, such as a DUNS number, or NATO CAGE code.

Individual unit identification of a product can also include an additional identifier, such as a serial (or fabrication) number, or lot (or batch) number.

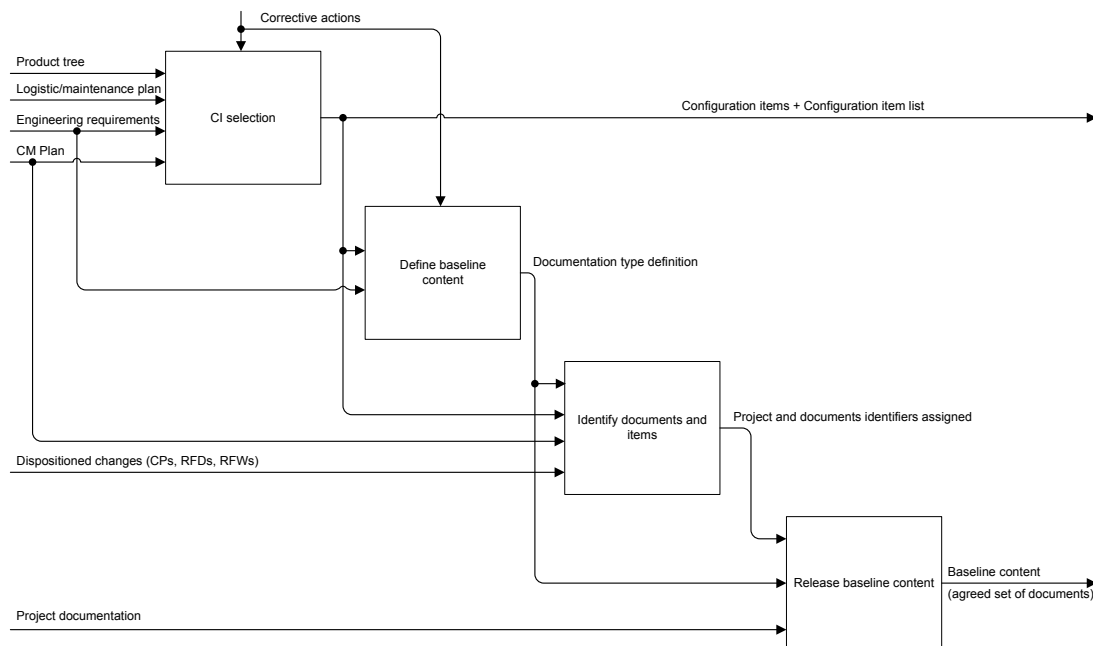


Figure 4-5 Configuration identification

4.3.2.2 Configuration item

Configuration items, as defined in ECSS-S-ST-00-01, fall into two categories, which are:

4.3.2.2.1 Developed configuration item

This is a configuration item subject to development and fully or partially designed for the programme or project. Its configuration management conforms to the programme or project configuration management requirements and is carried out by the supplier responsible for its development.

4.3.2.2.2 Non-developed configuration item

This is a configuration item being a standardized or “off-the-shelf” product that is not developed specifically for the programme or project. It is subject to supplier definition documentation and configuration management. This CI category also includes any product that has been developed and qualified for another programme or project with comparable requirements and which is used without modification.

Configuration management of non-developed CIs conforms to the programme or project configuration management requirements to the extent necessary for its integration into the next higher level configuration item.

4.3.2.3 Selection of configuration items

The product tree, as defined in ECSS-M-ST-10, is used for the selection of configuration items and serves as a basis for the programme or project work breakdown structure.

Configuration items are identified at various levels of the product tree, as depicted in Figure 4-6, and defined at least by a technical specification. Configuration item assignment provides the means for configuration control of the product. Each CI becomes also a configured item during its development.

Selection of configuration items starts at the early definition phase of a programme or project to build a manageable set of hardware or software items. The responsibility for identifying an item as a CI rests with the customer, unless delegated by him to the supplier.

No fixed rules govern the selection of configuration items. The process for selecting configuration items relies on good system engineering judgment, and configuration management experience, supported by cost trade-off considerations.

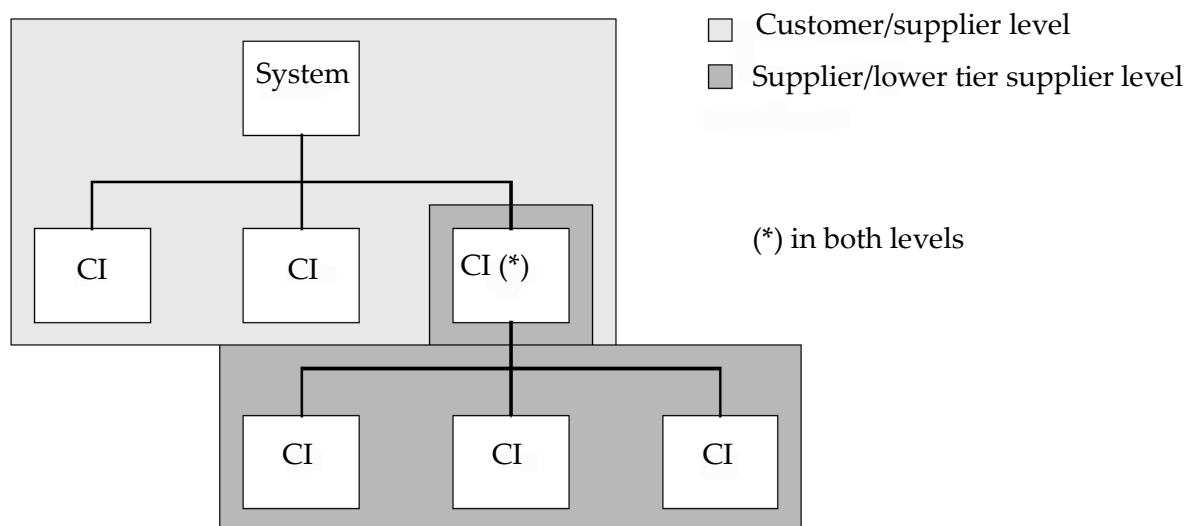


Figure 4-6 CI product tree structure

4.3.2.4 Configuration baseline

Configuration baselines represent the approved status of requirements and design at key milestones of the programme or project and provide the point of departure for further evolution (see Figure 4-11). These configuration baselines are applicable to both hardware and software.

A configuration baseline comprises the documentation that describes the characteristics of a product. This documentation is formally designated as the configuration reference at a key point in the product life cycle corresponding to a major product definition event. Any subsequent change of a product characteristic proposed for this documentation is subject to a formal change

procedure involving all the actors and disciplines concerned before it can be incorporated.

During the life cycle of the product, configuration baselines are elaborated in the following sequence:

- Mission objective baseline (MOB) is established at PRR based on the approved functional specification. This baseline establishes the purpose of the system, its associated constraints and environments, the operational and performances capabilities for each phase of its life cycle, and the permissible flexibility.
- Functional configuration baseline (FCB) is established at SRR based on the approved system technical specification. This baseline establishes the system's characteristics in terms of its technical requirements, as well as the criteria and corresponding levels of qualification and acceptance.
- Development configuration baseline (DCB) is established at PDR based on approved technical specifications (TS). This baseline establishes the product's characteristics in terms of technical requirements and design constraints, as well as their verification conditions.

NOTE FCB and DCB are also named "Requirements baselines" in different standards.

- Design baseline (DB) is established at CDR based on the approved design documentation.
- Product configuration baseline (PCB) is established at FCV/PCV for serial production, or QR/AR for prototypes based on the approved set of documents containing all the functional and physical characteristics required for production, acceptance, operation, support and disposal.

The log book, as in ECSS-Q-ST-20, is established at successful completion of the acceptance review and is maintained during the utilization and disposal phases.

Details relevant to the configuration management approach during these phases are provided in clause 4.3.7.

4.3.2.5 Identification marking

Each item, H/W and S/W is uniquely identified by a specific identification code. The identification code is assigned to a product to distinguish it during its entire life. The rules for the identification coding system are established in the CM plan.

A configured H/W item is identified by a part number and, if necessary, a serial or lot number such that every single item has a unique identifier. In this context, bulk material is treated as a part. A configured S/W item is identified by a unique code and version number. When the configured item is a configuration item, its identification also includes a CI identifier. These different product identification data are applied on the product itself or, when not possible, linked to the product.

4.3.2.6 Digital file and media identification

Configuration identification also provides the means for maintaining traceability from a product to its design definition data resident in an electronic database (digital files).

Such data, represented by digital files, are composed by a variety of subset data, which are merged in a controlled manner in order to represent the product design definition concerned in the intended configuration.

Configuration management for these sets of data and their integration into a complete product design definition is an existing application of software CM processes (e.g. library management).

Digital files defining the configuration characteristics of a product item are therefore subject to the same configuration management principles applicable to configuration documentation.

The application of configuration identification rules to digital data are applicable for

- digital data identification,
- digital data storage,
- maintenance of digital data relating to the product,
- version control of digital data and the related change management process,
- controlled access to digital data, and
- digital data transmittal.

4.3.3 Configuration control

4.3.3.1 Overview

Configuration control, as depicted in Figure 4-7, is the process for controlling the evolution of, or departures from agreed baselines. It includes the preparation, justification, evaluation, disposition and implementation of engineering and contractual changes, deviations and waivers.

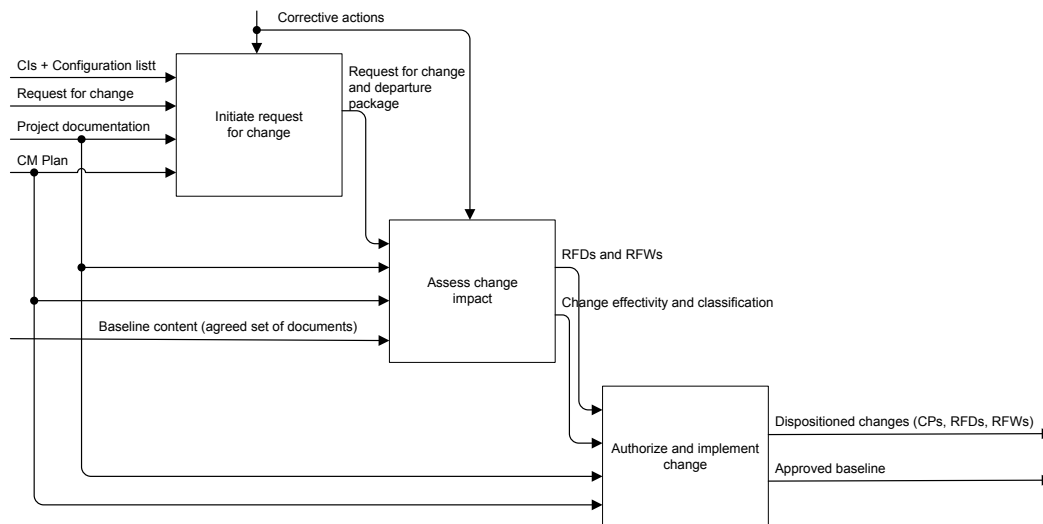


Figure 4-7 Configuration control

4.3.3.2 Change procedure

Configuration control ensures that all changes, deviations and waivers to agreed configuration baselines, including their released and approved documentation are processed and controlled in a traceable manner.

The configuration control process ensures that the following activities are covered:

- prevention of changes affecting degradation of product capability;
- involvement of all actors in the concerned analysis and decision process of changes;
- control that authorized changes or deviation are implemented, verified and recorded;
- prevention of the implementation of unauthorized changes or deviations.

Change control procedures are applied following the establishment of the first baseline.

All released baseline documentation, thereafter, is subject to configuration control, including submission to the customer for higher-level approval or review, as necessary. As such, no formal change can be generated without an approved baseline.

A change can be either

- initiated by the customer (e.g. evolution of requirements) followed by a reply from the supplier within a defined time limit, or
- proposed by the supplier (e.g. self initiated improvement of design) followed by a response from the customer.

4.3.3.3 Configuration control board

Configuration control boards (CCB) are established at each project level as the relevant authority for all changes. The CCB is convened by the configuration manager in agreement with the project manager. The CCB consists of

permanent representatives of all programme or project disciplines necessary for the review and evaluation of changes. The members of the CCB are with decision-making authority.

A change initiated by the customer can only be implemented after examination and approval of the supplier's response, e.g. change proposal.

4.3.3.4 Classification of changes and departures

The classification of a change or departure defines the type of approval and release cycle required according to criteria with regard to impacts on cost, schedule, technical specification and other technical or contractual characteristics.

Every change is classified by the CCB as a class 1 or class 2 change and departure as major or minor. The change or departure can be reclassified by the next higher level CCB.

According to its effects, a change proposal or a departure request is processed through the different levels of the organization. The appropriate level to decide its disposition is the level for which the effects of the change or departure have no repercussions on the commitments made to the customer. The disposition is, however, transmitted to the customer for information.

4.3.3.5 Interface control

Interface control is part of the configuration control activity and defines the process necessary to freeze and implement interface data, and the control of changes affecting the interfaces. The interface control process is under the responsibility of system engineering supported by configuration management. The CM activity provides the means to identify, track and report on the status of approved interfaces.

Control of interfaces is performed through the "interface control document(s) (ICDs)", which is/are prepared to cover all aspects relevant to interfaces (e.g. mechanical, electrical, thermal and software). Configuration management provides the necessary assistance and support in recording the status of the interface data and in verifying their compliance against requirements.

4.3.4 Configuration status accounting

4.3.4.1 Overview

Configuration status accounting comprises the creation and organization of the knowledge base necessary for performing configuration management. It provides the source of configuration information to support all programme or project disciplines and activities through the establishment and maintenance of

- a record of approved configuration documentation (e.g. data sets) and related identification numbers,
- the status of proposed changes to and requested departures from the established configuration,
- the implementation status of approved changes and deviations, and

- the actual configuration of all units of configured items being in the operational inventory.

Together these comprise the configuration status accounting report.

4.3.4.2 As-designed and as-built data list

The CIDL is a document generated for reporting the current design status of each product configuration item. This document is provided at the PDR with the establishment of the development configuration baseline and maintained during the lifecycle of the product CI.

The CIDL itself and the data included serve as a point of departure for the control of subsequent performance, design and build changes.

When software product CIs are involved, a software configuration file is also prepared in order to provide more extensive information relevant to installation and use of the described product.

The CIDL is the source for the preparation of the ABCL, which is the document used to report the as-built and as-tested status for each serial number of product CI.

4.3.5 Configuration verification

Configuration verification is the process to verify the current configuration status of the analyzed product and results in the establishment of configuration baselines as defined in clause 4.3.2.5. This activity is performed during programme or project reviews, which are defined in ECSS-M-ST-10 together with their objectives.

At the end of each review, the documents and data sets that identify the current configuration baseline are updated to be in conformance with the review dispositions and then presented to the customer for approval.

4.3.6 Configuration management process audit

The effectiveness of the configuration management system is measured by audits to verify the proper application of configuration management requirements during the life cycle of the product as specified by the customer.

Audits are conducted in accordance with requirements defined in ECSS-M-ST-10.

4.3.7 Configuration management approach for operational phase

The activities performed by configuration management during the operational phase (phase E and F of a project) are those required by the set of reviews established by ECSS-M-ST-10.

If necessary, a dedicated CM plan can be prepared to describe the process to meet the objectives of the operational phase.

During this phase the functions of CM are continued from previous project phases.

4.3.8 Implementation of information/documentation management

4.3.8.1 Overview

Implementation of information/documentation management comprises the activities as described in the following sub-clauses.

4.3.8.2 Creation and revision

During this phase the content of a document is established and the documentation reference is assigned. This activity is performed under the responsibility of the organization assigned in the DRL. Attributes in addition to the documentation reference can be included as needed (e.g. DRL/DRD reference, CI Identifier, authorities involved in the review process). For configuration controlled documents, the configuration control process defined in this standard is applied.

In this phase the document bears the status “In Preparation”. It is considered preliminary and is therefore not used for binding agreements. The same logic applies for a new version of a document under preparation.

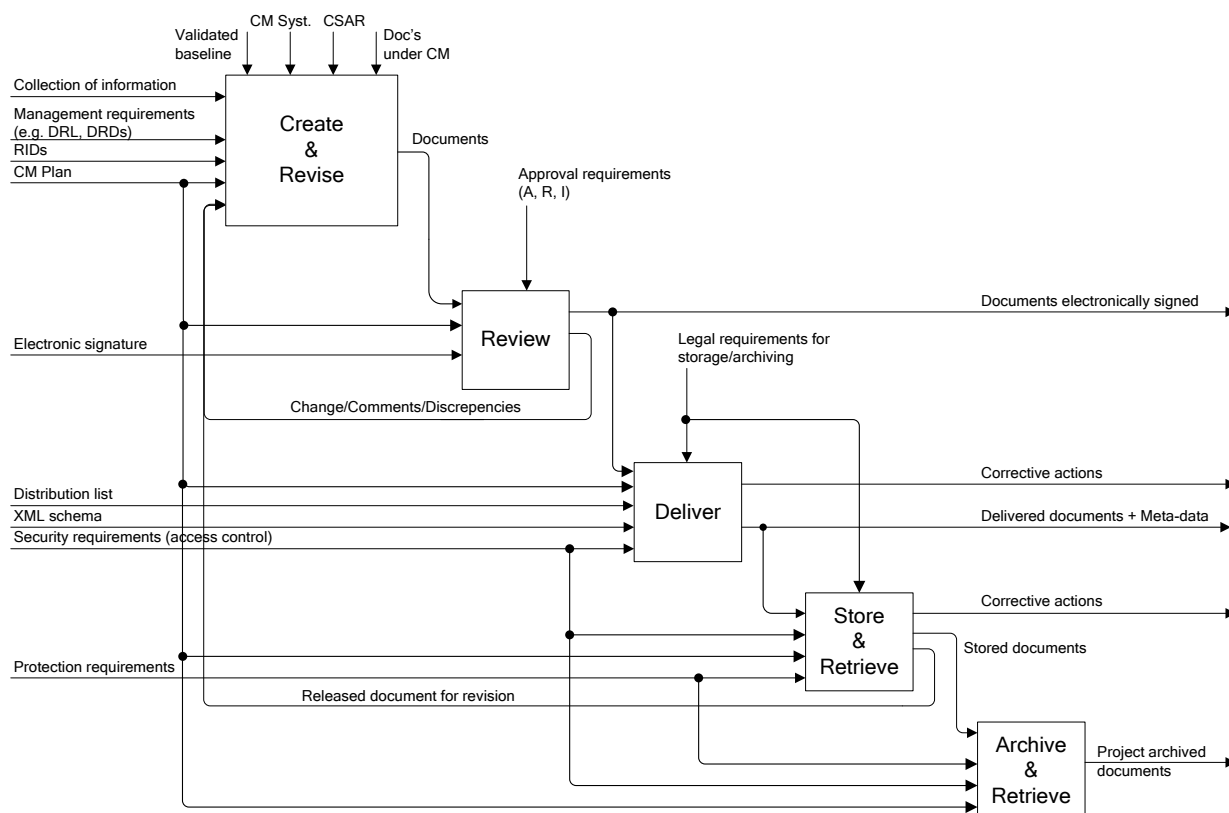


Figure 4-8 Implementation of information/documentation management

4.3.8.3 Review

4.3.8.3.1 Review activity

When the document is complete, it is submitted for review and approval as required. The review process is then initiated as specified within the CM Plan.

In this phase the document bears the status “In Review”.

The same restriction regarding its use applies as for the creation/revision phase, and is therefore not to be used for binding agreements. The review authority either confirms that the content complies with the applicable requirements, or states the identified discrepancies together with the proposed resolution. In the latter case, the document is returned to the creation/revision phase for incorporation of comments and resolution of the identified discrepancies.

During the review process a document can be “withdrawn” (if it did not pass the review cycle and is maintained or traced for historical purposes only) or get the status “obsolete” or “superseded”(when it has been released but superseded by a new document).

4.3.8.3.2 Approval and release

Approval can be given either by electronic signature or by process as defined in the CM Plan.

Electronic signature or approval by process ensures that

- a. the document has not been modified after its approval (i.e. integrity), and
- b. the author cannot deny his responsibility for the content of the document (i.e. non-repudiation).

At the end of the review phase once all required approvals are given, the document reaches the status “Released”.

Once released the document is valid for use and therefore ready for distribution. After the document is released, any modification to the document implies a new version.

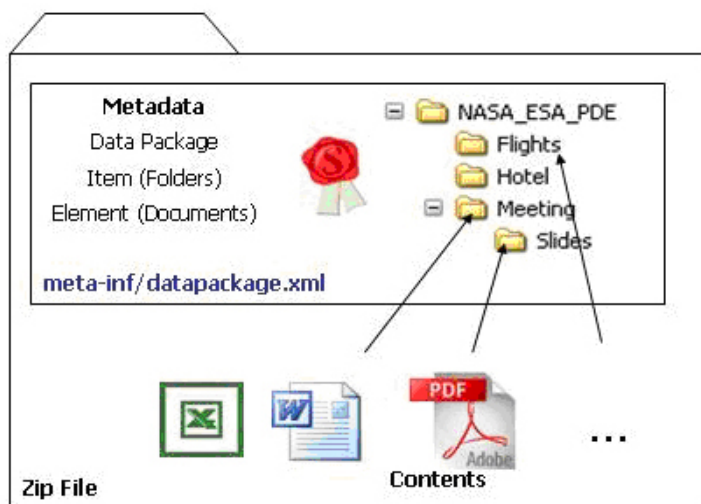
4.3.8.4 Delivery

Documents are delivered in line with the procedures defined by the CM Plan taking into account the level of confidentiality applicable to each document. The status of the document is not changed during delivery.

Documents are delivered using “Technical Data Package (TDP)” format which defines the way to exchange content files and their related metadata and to structure them within folders.

The TDP is a ZIP file containing document file(s) and metadata describing these documents. Metadata used in the TDP are a subset of the ISO 10303 STEP AP232 metadata added by some specific metadata defined in Annex L.

The metadata are stored in the “datapackage.xml” file. See Figure 4-9.



Metadata = Data about data



Figure 4-9 TDP contents

The delivery process is summarized in the following diagram. The main steps are:

- the originating organization "exports" content files and metadata from its Information System (IS) to TDP;
- the originating organization provides TDP to recipient organization via e.g. e-mail, ftp, CD-ROM;
- the recipient organization "opens and controls" the compliance of the TDP;
- the recipient organization "imports" the TDP into its Information System.

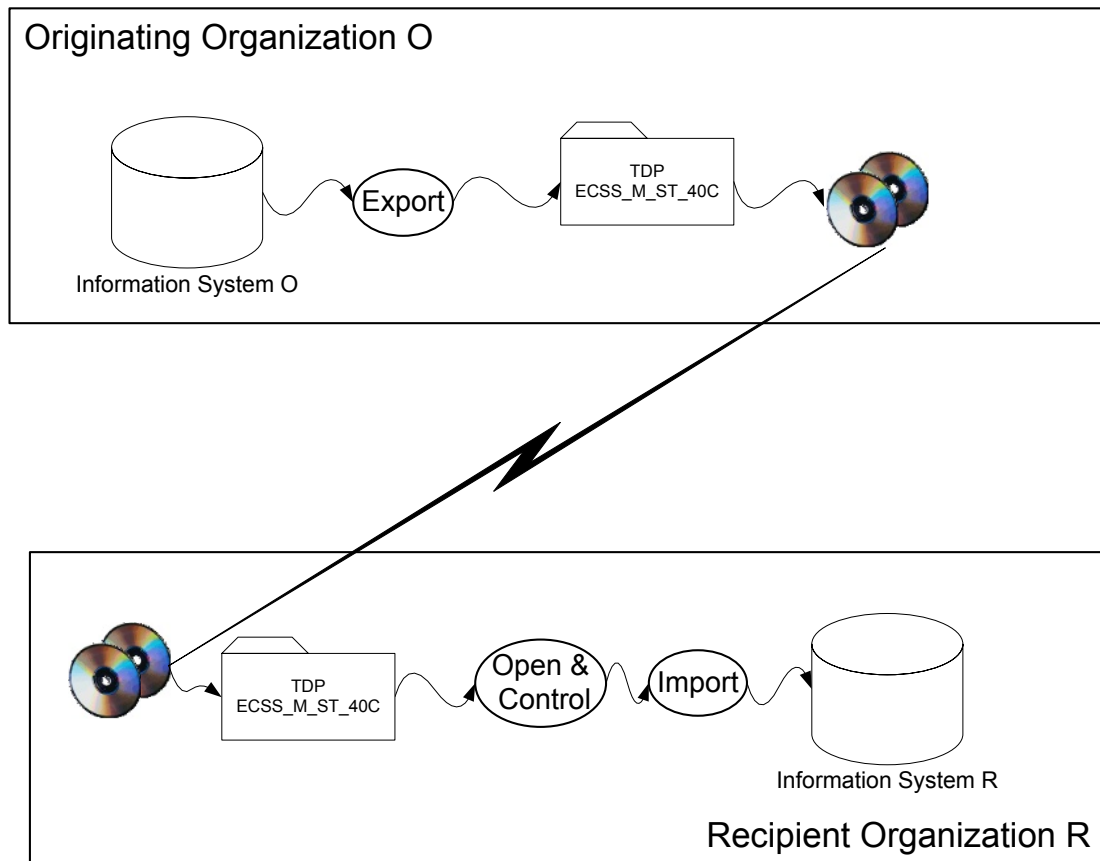


Figure 4-10 Delivery process for TDP

4.3.8.5 Storage and retrieval

Storage and retrieval overlaps with the other phases defined above. The status of the document is not changed during storage and retrieval.

The information system is deployed in order to handle metadata and static and dynamic content. The reproducibility and integrity of the stored information is ensured for the programme/project life cycle.

4.3.8.6 Archiving and retrieval

Archiving is the last phase of the information process. It ensures that project information/documentation is:

- preserved from damage or loss,
- accessible and retrievable for use, and
- access controlled to authorized personnel.