




ERJU SYSTEM PILLAR

Configuration Management Plan



Configuration Management Plan

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Abstract	The configuration management plan ensures the identification and traceability of project deliverables. It defines project-specific responsibilities and includes rules for the identification and structure of configuration items, as well as the definition of outputs.
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1 Preamble

1.1 Purpose


The purpose of the *SPPROCESS/10 SEMP V 01_01/Configuration Management Plan : 720152* is to give instructions on how the configuration and change management activities has to be performed by the System Pillar team.

The **output of configuration management planning process** is the configuration management plan (ISO 10007).

This plan covers:

1.  SPPR-7581 - Configuration Planning & Management:
Establishes the CM function and manages it through the project lifecycle.
2.  SPPR-7311 - Configuration Identification:
Defines the work products hierarchy and defines the identification rules to select configuration items.
3.  SPPR-7583 - Change Control :
Controls, submits, reviews and validates changes throughout the entire project lifecycle.
4.  SPPR-7584 - Configuration Status Accounting:
Reports on configuration item readiness.
5.  SPPR-7585 - Configuration Verification & Audits:
Ensures conformity to processes and standards.
6.  SPPR-7323 - Configuration Management Tools and Environment

The main deliverables for System Pillar scope are:

- the Configuration management plan (this document and its *SPPROCESS/10 SEMP V 01_01/CMP Annex A - System Pillar Baseline Creation Process : 720152*)
-  SPPR-7894 - Configuration Item List
- the "System Pillar Release" Release Note
- the configuration management report (CMR).

See *SPPROCESS/Configuration items/Configuration Items : 720152* for more information on each of these documents (except the configuration management report which is not part of this list).

The configuration management plan for a specific work product or service should:

- be documented and approved;
- be controlled;

- identify the configuration management documented information to be used;
- make reference to relevant documented information of the organisation wherever possible;
- describe the required resources and any responsibilities and authorities (including accountability), for carrying out configuration management throughout the life cycle of the work product or service.

[SPPR-9589]

1.2 Intended audience

This **Configuration Management Plan** (CMP) concerns the control of the configuration and change of the documents and other kind of related work products of the System Pillar during their complete life cycle. It defines the **Configuration Management** (CM) process to be implemented in System Pillar, including the scope, organisation and procedures to be used to carry out the CM activities, as follows:


This plan applies only to the items listed in the  SPPR-7894 - Configuration Item List (typically all System Pillar deliverables).

[SPPR-9678]

1.3 Document context

This plan is part of *SPPROCESS/10 SEMP V 01_01/SEMP Systems Engineering Management Plan : 720152* deliverables.


This plan has been set up according to  SPPR-2169 - P1.6 Define/update project plan.




This process is based on the rail specific CM requirements and guidelines. (see  SPPR-9501 - Standards and references) [SPPR-11703]


1.4 Glossary

1.4.1 Terms and definitions

Global definitions are defined here : Definitions < Glossary < Documents & Pages < SPLI (europa.eu)

Term	Status	Definition
SPPR-10585 - External SP Release	Open	External SP Releases are delivered outside of the EU-RAIL program. These releases are delivered publicly to the sector for feedback on CR's (see EU Rail and Harmonisation Document), to ERA for TSI updates, to the Standardisation  bodies and to RU's and IM's to perform call of tender. It is expected that these releases are mature releases with the maturity demonstrated, for instance thanks to demonstrators in Innovation Pillar. Referenced by: SPPR-9689
SPLI-772 - BASELINE	Done / To be decided	A baseline is defined by a stable kernel in terms of system functionality, performance and other non-functional characteristics. Referenced by: SPPR-9338
SPPR-10584 - Internal SP Release	Open	Internal SP Releases are internal to EU-RAIL program. These releases are delivered to the Innovation Pillar for the sake of

Term	Status	Definition
		setting up maturity demonstrators inline with the tentative future CCS architectures. Referenced by: SPPR-10586, SPPR-9689
SPPR-9932 - System Pillar Release	Open	A "System Pillar Release" is a baseline covering whole or part of the deliverables identified for the System Pillar project. See the  SPPR-9687 - Definition of System Pillar Releases  for more information. Referenced by: SPPR-9687
SPLI-789 - CONFIGURATION MANAGEMENT	Done / To be decided	A discipline applying technical and administrative direction and surveillance to identify and document the functional and physical characteristics of a configuration item, control change to those characteristics, record and report change processing and implementation status and verify compliance with specified requirements. (3) Referenced by: SPPR-9589
SPPR-9675 - Document Author	Open	Document Author is the document generator and belongs to a specific task/domain. See role  SPPR-5408 - Document Author Referenced by: SPPR-9193
SPT2TS-127456 - Configuration item	Open	A configuration item refers to any resource within a system that needs to be managed and controlled in order to support the delivery of products or services. It can be an unchangeable item such as a software (provided by the originator it remains unchanged until installation), or it can be a changeable item such as a parametrisation file (provided by the originator it may be changed by a third party before installation). Configuration items are typically identified, documented, and tracked throughout their lifecycle to ensure proper control, maintenance, and change management. They are often part of a configuration management system or database, which helps in organizing and managing the configuration items and their relationships. The purpose of managing configuration items is to have a clear understanding of the resources that make up a system, their interdependencies, and their characteristics. This enables effective control, planning, and decision-making, particularly in areas such as asset management, change management, and problem resolution. Referenced by: SPPR-9590
SPPR-9338 - Baseline	Open	Sets of specifications or work products at specific points in time that have been formally reviewed and agreed on. Notes: - Pay attention that, in the context of System Pillar (and use of Polarion), several kinds of baselines exist: Polarion Document Baseline , Polarion Project Baseline , Polarion Collection Baseline and System Pillar Release (treated in the <i>SPPROCESS/10 SEMP V 01_01/Configuration Management Plan</i>)  - This definition is a general definition. Another definition exists in glossary imported from the Subset-23. :  SPLI-772 -





Term	Status	Definition
		BASELINE  Referenced by: SPPR-9499

1.4.2 Abbreviations

Acronym (abbreviation)	Full text (title)
CI	Configuration item
ISPR	Internal SP Release
ESPR	External SP Release
SEMP	System Engineering Management Plan


2 Configuration Planning & Management

The roles involved in the System Pillar configuration management are explained in this chapter:

-  SPPR-5408 - Document Author
-  SPPR-10396 - Lead Configuration Manager
-  SPPR-10397 - Configuration Manager (in tasks/domains)
-  SPPR-10515 - Release Manager
- Quality Manager

Except for document author, the **roles** shall be assignment among the System Pillar organisation.

This is performed using SEMP Role Allocation Work Items to assign a role to an actual person.


The results can be seen in report page:  All SEMP Allocation Roles.

[SPPR-9679]

2.1.1 Document Author responsibilities

Document Author


Document Author is the document generator and belongs to a specific task/domain.

See role  SPPR-5408 - Document Author [SPPR-9675]

Document Author

The **Document Author** role represents a user who is the author (Lead Author or a contributor) of a SP document.






He/She can:

- Create, edit, manage review, ... of a document, as foreseen by *SPPROCESS/SEMP Annexes/SEMP Process 0945-Review and Approval Process : 720152*)
- Create a document baseline to be exported (see  SPPR-9712 - Rules for documents baselines for more information)
- Keep track of the exported document baseline;
- Export the baseline in an exchangeable format (pdf, doc);
- Export the comparison view with the most recent major baseline as an annex. (pdf, doc);
- Share the exported document with System Pillar Core Group;
- Analyse and accept/refuse, in conjunction with Core Group, comments coming back from Reviewers (internal or external).

Note: The export location will be determined once the publication platform has been established.

In addition to these tasks, the **Lead Document Author** is responsible for the "Review and Approval process" as described in *SPPROCESS/SEMP Annexes/SEMP Process 0945-Review and Approval Process : 720152*

In term of glossary, his/her main tasks are:


- making use of existing definitions of terms in existing glossaries (namespaces):  SPPR-5314 - Refer glossary item in a System Pillar document
- submitting a new glossary to the glossary consolidator for its evaluation. This is the scenario where a document author needs to reference a term of an external glossary that has not been imported yet: the consolidator may evaluate whether it can be imported or not. See  SPPR-5421 - Process request for new glossary
- generating local definition request in case terms are not included in any of available glossaries:  SPPR-5307 - Request a new glossary item
- proposing corrections/modifications to existing terminology to the Glossary Author:  SPPR-5418 - Request a glossary item modification
- upgrading definition and abbreviation tables while publishing his/her document -  SPPR-5314 - Refer glossary item in a System Pillar document

[SPPR-5408]

2.1.2 Lead Configuration Manager Responsibilities

Lead Configuration Manager

This role is attached to System Pillar Engineering Environment Team (EET):

- *as identified in System Pillar SPPROCESS/10 SEMP V 01_01/Configuration Management Plan : 720152*
- *as allocated to people in  All SEMP Allocation Roles*

*The **Lead Configuration Manager** is the process owner of the Configuration Management Process under the System Pillar project.*

*The **Lead Configuration Manager** has overall responsibility for the Configuration process and its implementation throughout their task/SP Domains. Configuration Manager is responsible for overseeing the establishment, documentation, and control of releases. Also, ensures that the baseline process aligns with the overall project schedule and objectives.*

*In addition to the EET Configuration Manager of EET, there will be **one Configuration Manager per task/SP Domain**.*

CM Manager of EET will coordinate the CM activities taken in charge by each CM Manager of SP Tasks/ Domains for the scope of their task/domain.

He/She has the responsibility for:


- *Elaborating and maintaining the Configuration Management Plan (CMP)*
- *Managing and executing all the CM activities related to the configuration management process.*
- *Ensure Configuration Items and releases are identified in accordance with the Configuration Management requirements set out in this Configuration Management Plan.*
- *Coordinate with stakeholders to identify and define configuration items to be included in each release*
- *Ensure that formal reviews and approvals are conducted for all baselines*
- *Contribute with ARC domain to the Release Note for System Pillar releases*
- *Maintain records of all baseline changes*
- *Maintain Configuration Item List*
- *Configuration audits*

[SPPR-10396]

2.1.3 Task/Domain Configuration Manager Responsibilities

Configuration Manager

This role is attached to a System Pillar Task/Domain:

- *as identified in System Pillar SPPROCESS/10 SEMP V 01_01/Configuration Management Plan : 720152*
- *as allocated in  All SEMP Allocation Roles*

Configuration Manager, at the perimeter of his/her Task/Domain, will:

- *Ensure Configuration Items, Polarion document baselines and Polarion collections are identified in accordance with the Configuration Management requirements set out in this Configuration Management Plan (see SPPROCESS/SEMP Annexes/CMP Annex A - System Pillar Baseline Creation Process : 720152)*
- *Organisation of the Change Control Board (CCB) and change process execution according to the responsibilities of the task/domain (see SPPROCESS/SEMP Annexes/Change Control Management : 720152)*
- *Implementation and operation of all Configuration Management process*
- *Configuration status accounting (see Configuration Status Accounting)*

- Manage the release documentation process, ensuring that all relevant information is accurately recorded and stored in the controlled repository.

The **Configuration Manager** is also responsible to support the Release Manager in the scope of the task/domain (✎ SPPR-10515 - Release Manager)
[SPPR-10397]

2.1.4 Quality Management Team Responsibilities

The **Quality Management Team** ensures that baselines meet quality standards and requirements based on the *SPPROCESS/10 SEMP V 01_01/Quality Management Plan : 720152*

- Conduct independent reviews and audits of baselines to verify
 - their integrity and compliance with requirements.
 - naming conventions
 - correct change management have been applied
- Provide feedback and recommendations for baseline improvements.

see ✎ SPPR-10390 - Lead Quality Manager (in EET) and ✎ SPPR-10391 - Quality Manager
[SPPR-9684]

2.1.5 Release Manager Responsibilities

Release Manager

This role belongs to Architecture and release coordination Team and is identified in SPPROCESS/SEMP Annexes/SEMP Annex A - Roles and Teams : 720152

The **Release Manager** is responsible for overseeing the process of releases, ensuring that new versions are delivered smoothly and efficiently. Their duties include:

- **Planning and Scheduling:** Coordinating the release schedule, including timelines and deadlines.
- **Coordination:** Working with the domains to ensure all parts of the release process are aligned.
- **Risk Management:** Identifying and mitigating potential risks that could impact the release.

In essence, a release manager ensures that updates and new features are delivered to users in a reliable and timely manner.

The **Configuration Managers** support the Release Manager in the scope of the task/domain
[SPPR-10515]

3 Configuration Identification

Configuration identification is the definition and management of **Configuration Items (CI) and their interrelationships** to describe the product structure and the related work products. This process consists of the following main activities:


- Selecting and describing Configuration Items (CIs), including the Configuration Items structure (for example, the CI tree)
- Identifying CIs
- Creating and describing configuration

[SPPR-9685]

Baseline


Sets of specifications or work products at specific points in time that have been formally reviewed and agreed on.

Notes:

- Pay attention that, in the context of System Pillar (and use of Polarion), several kinds of baselines exist: [Polarion Document Baseline](#), [Polarion Project Baseline](#), Polarion Collection Baseline and System Pillar Release (treated in the *SPPROCESS/10 SEMP V 01_01/Configuration Management Plan : 720152*)
- This definition is a general definition. Another definition exists in glossary imported from the Subset-23. :  SPLI-772 - BASELINE [SPPR-9338]

3.1 Selection and description of the Configuration Items

Configuration items are all items (documents or parts) describing the product and any other item that the project decides to put under configuration management control. The items handled under Configuration are:

- The **documents authored by the System Pillar programs**, see  SPPR-9341 - Configuration Items List.
These documents must be of one type identified in the *SPPROCESS/Configuration items/Configuration Items : 720152*
- The **Capella model**
- The **documents, not authored by the System Pillar programs** but needed for referencing, starting points, ... (e.g. ERA documentation, documents from other European programs, ...)

[SPPR-9590]





3.2 Configuration Items List



The Configuration Item List (CIL) is the repository of the configuration items selected. In this list you can get information about e.g. safety relevance, milestone relevance (review information), life cycle models of documents, deliverable owner, etc... The storage data and their revisions serving as reference for the development. The configuration item list contains all deliverables under configuration management of the project. It is used for monitoring and control the deliverables of the project.

In Polarion, "configuration item list" is realised by a set of collections built for SP Delivery. [SPPR-9686]

3.3 Naming conventions of Configuration Items

In this chapter are described the naming conventions for System Pillar documents

-  SPPR-9688 - Naming conventions of Polarion documents
-  SPPR-10679 - Naming convention for a document version
-  SPPR-10692 - Naming convention for the published document
-  SPPR-10683 - Naming convention for documents not authored by System Pillar

-  SPPR-10681 - Naming convention for Capella model
-  SPPR-10736 - Naming convention for Release Polarion Collections

[SPPR-10684]

A naming convention serves as the backbone for ensuring coherence and ease of navigation when many components and subsystems involved. By establishing a standardised approach to naming configuration items (CI), this convention streamlines communication, enhances understanding, and facilitates efficient management of the project's infrastructure. With clear prefixes, systematic identification of subsystems, and specific identifiers, the naming convention provides a structured framework that not only categorizes components but also enables quick recognition of their purpose and function.

The general structure (explained here for possible future extensions) is:


1. **Prefixes:** Begin each Configuration Item name with a prefix to denote its category or type. This makes it easier to immediately identify the purpose or nature of the item.
2. **Subsystem Identification:** Use a consistent naming convention to identify subsystems or modules within the overall system. This helps in organising Configuration Items based on their functional domains.
3. **Specific Identification:** Include specific identifiers or names relevant to the individual Configuration Item. This could be a numerical code, a unique identifier, or a descriptive name.
4. **Versioning:** Include version numbers or revision identifiers to track changes and updates to Configuration Items over the period of time. This ensures proper version control and management.

[SPPR-10677]

3.3.1 Naming convention for a Polarion document name

The **naming convention in Polarion for documents authored by the System Pillar** is to be used in the "Document Title" properties of the Polarion Document. The naming convention template is:

TEMPLATE: <DocType ID>_<Subsystem ID> - <Suffix for split>

1. **Document Type Identification:** Name of the document type plain text or acronym or both is possible).
The name shall mention explicitly a type of System Pillar deliverable as listed in  SPPR-9200 - System Pillar documentation principle.
2. **Subsystem Identification:** Name of the subsystem as defined in architecture documents (example C2P-xx-Component imported from Capella).
If a document is common to several subsystems, the name of the enclosing system (the above layer) can be used.
3. **Suffix for split documents:** In case a document is split in several Polarion documents (e.g. appendix, split of long document, ..), a suffix shall be added.
The suffix to use is
 - a. *for main document, when the document is split, suffix is <-Main>*
 - b. *for part of documents <Part n> where n starts at A, is unique for the part of the document and is increased for every part of the document.*
 - c. *for annexes of documents <Annex n> where n starts at A, is unique for the annex of the document and is increased for every annex of the document.*

If the document is not split, no suffix is required.

Examples:

- System Requirements Specification_Point
- Interface Description_SCI-P
- Interface Description_Electronic Interlocking-Point
- Systems Engineering Management Plan - Main
- Systems Engineering Management Plan - Annex A Roles and Teams
- Systems Engineering Management Plan - Part A Process Team Management

[SPPR-9688]

3.3.2 Naming convention for a document version

The **version** property of documents authored by the System Pillar will follow the schema : **<x.y>** where



- x is the major version number. Its value is incremented for every major change or when a version is produced in the context of a new System Pillar contract.
- y is the minor version number. Its value is incremented when change is considered as not major. y is reset to 0 every time x is incremented.
- *Setting the status to "Open" will trigger a change in minor version. That can be updated by user to increment major (and reset minor) if foreseen impact is high.*
- *Recommended first version - if version field is not pre-filled - is "0.1"*

[SPPR-10679]

3.3.3 Naming convention for the published document


The name of the exported document shall use this template:

TEMPLATE: <Prefix>_<Polarion Name>_<Version><Status>

1. <Prefix> is the abbreviation of the name of the Task/Domain
2. <Polarion Name> is defined here:  SPPR-9688 - Naming conventions of Polarion documents
3. <Version> is defined here:  SPPR-10679 - Naming convention for a document version
4. <Status> is set automatically during the review process, see SPPROCESS/SEMP Annexes/SEMP Process 0945-Review and Approval Process : 720152

<Version><Status> is also the name of the Polarion baseline of the document.

The properties **name, status and version of the Polarion Document** will identify the documents authored by the System Pillar programs.


Note: It has been agreed that the documents not authored in Polarion (ex. EULYNX documents) will not be renamed and will be referenced in the  SPPR-9209 - Release Note with the original names and versions.

Examples:

- TACS_Requirement Specification Subsystem Point_V1.0 In Progress
- TACS_Interface Description SCI-P_V1.0 In Review by System Pillar
- TACS_Interface Description Electronic Interlocking-Point_V1.0 Released

[SPPR-10692]

3.3.4 Naming convention for documents not authored by System Pillar

The **naming convention for documents not authored by the System Pillar** will be the same as the one of the original documents. Properties of documents (pdf, Word files, ...) will be set according to their original values. In particular for name and version. The imported work products shall be referenced in the  SPPR-9209 - Release Note identifying the source and release information in its description. [SPPR-10683]

3.3.5 Naming convention for Capella model baseline

The **naming convention for Capella model baseline** will be the same as the System Pillar Release where it is included.

Note: This name should follow the Git specific rules: <https://practicalseries.com/1002-vcs/02-06-concept.html#:~:text=Tag%20naming%20restrictions,-Tags%20can%20be&text=Tags%20cannot%20begin%20or%20end,.%20or%20have%20two%20consecutive%20..>

See next sections [SPPR-10681]

3.3.6 Naming convention for Polarion collections

The **naming convention for System Pillar Release Polarion Collection** will be the same as the System Pillar Release where it is included which is defined in  Document and Release Plan - Main

The **naming convention for Task/Domain Release Polarion Collection** will follow the template
<Task/Domain Name>_<System Pillar Release Name>

Note: If a collection of a task/domain is re-used as it is in several 'SP Releases', the rule still applies: a collection (with same content with new name) should be created. Rationale: it is a way for task/domain to confirm that content is indeed the same as in previous release. [SPPR-10736]

3.4 System Pillar Releases

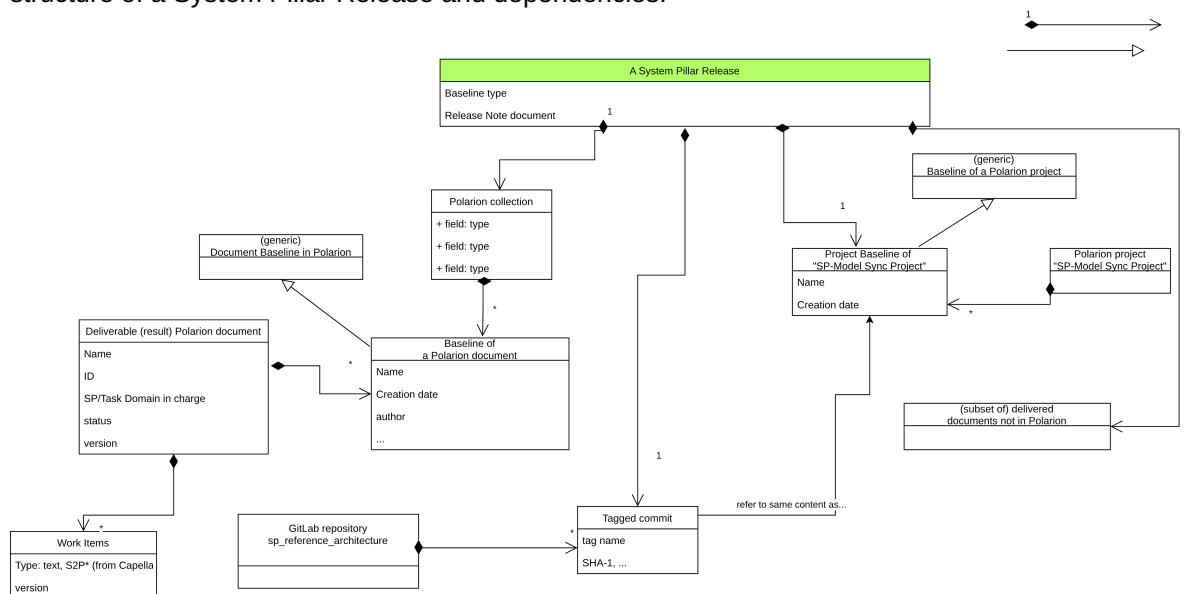
3.4.1 Definition of System Pillar Releases

Definition of System Pillar Releases

As illustrated in the class diagram below, a **System Pillar Release** is made of

- Baselines of **Polarion documents** (all or subset of the documents), Polarion documents being sets of Work Items
- GIT baseline of **Capella model** (model elements and diagrams)
- Polarion baseline of SP-Model Sync Project, whose **work items** are synchronised with the **Capella model** and used in **Polarion documents**
- Documents from delivered documents outside of Polarion (example EULYNX delivery)

Note: This [class diagram](#) is a simplified view of Polarion data model. The only purpose is to explain the structure of a System Pillar Release and dependencies.



For more information on use of GITLab and use of other tools, see *SPPROCESS/10 SEMP V 01_01/ SEMP main document : 720152*

A **System Pillar Release** is delivered through a **Release Note** [SPPR-9687]

3.4.2 Classification of System Pillar Releases

This configuration management plan for the System Pillar recommends the classification of all baselines based on the purpose they serve. [SPPR-9694]

System Pillar Release

A "System Pillar Release" is a baseline covering whole or part of the deliverables identified for the System Pillar project.

See the  SPPR-9687 - Definition of System Pillar Releases for more information. [SPPR-9932]

The following **types of System Pillar Releases** are : [SPPR-10588]

Internal SP Release

Internal SP Releases are internal to EU-RAIL program. These releases are delivered to the Innovation Pillar for the sake of setting up maturity demonstrators inline with the tentative future CCS architectures. [SPPR-10584]

Milestone SP Release

Milestone releases are local to the domain or working group responsible for creating the document and does not need the approval of the configuration manager.



The Lead Configuration manager should be informed.

These can be interpreted as incremental changes to major releases. Each incremental baseline could be the introduction, update or removal of a feature or section of a document or model. Baselines are “minor” baselines (ex 2.1, 2.2...) .

Milestone SP Releases are often created specifically for review and auditing purposes. They serve as evidence of adherence to System Pillar practices and are created according to local and global task and project milestones. [SPPR-10586]

External SP Release



External SP Releases are delivered outside of the EU-RAIL program. These releases are delivered publicly to the sector for feedback on CR's (see EU Rail and Harmonisation Document), to ERA for TSI updates, to the Standardisation bodies and to RU's and IM's to perform call of tender. It is expected that these releases are mature releases with the maturity demonstrated, for instance thanks to demonstrators in Innovation Pillar. [SPPR-10585]

It is important to note that final reviewed and approved baselines must be moved to  SPPR-10584 - Internal SP Release and  SPPR-10585 - External SP Release. Further, intermediate baselines must be favoured or preferred only in select situations. Intermediate baselines usually have a local scope.

Note: Documents shared with external partners must always be baselines.

Note: Documents published on the ERJU website must always be Approved.


The readiness and creation of milestone baselines or intermediate baselines are left to the domains. The configuration and quality management reviews are not mandatory before creating a baseline. Intermediate and milestone baselines are internal to System Pillar and can be created as required by the project.

Baselines contained in  SPPR-10584 - Internal SP Release and  SPPR-10585 - External SP Release always require the approval of the configuration management team before creation.

Note: A milestone or internal baseline may become an external baseline after approval. [SPPR-10587]

3.4.3 Planning and phasing of System Pillar Releases


Configuration management planning aligns all Configuration Management activities throughout the System Pillar development life cycle. Configuration management planning is done according to:

- Releases as documented in the System Pillar planning, see  Document and Release Plan - Main
- Phases of the EN 50126-1:2017 as illustrated in *SPPROCESS/Configuration items/Configuration Items : 720152*
Configuration Management baseline is built, per system level and System under consideration, at the end of each phase.
- Synchronisation needs between process tasks.

A new version of the System Pillar Release is created. The content refers to a consistent set of baselines of all documents planned and realised for each milestone.








Configuration audits are scheduled for deliveries associated with System Pillar, which are provided externally to the System Pillar organisation.




Notes:

- This is done with the purpose to properly drive and achieve the correct product configuration throughout the different phases of the project.
- The System Pillar phases are aligned to the CELENEC phases as detailed in  SPPR-2681 - [EN 50126-1:2017]

If the activities are split into "stations", at each station or sub-phase, intermediate "milestone" baselines must be created. This means that at each stage where a document undergoes a safety or security analysis, a reference version of the document is established. This allows for tracking changes and ensuring that safety criteria are met throughout the process.

Here after the list of baselines, the intended need and content:

Classification  SPPR-8933 - Classification of System Pillar Releases	Reviewers	Content of the baseline? (What) and link with CENELEC phase	Trigger for delivery? (When)
Milestone SP release	EET PRAMSS Lead and Task/ Domains PRAMSS Task/Domains	Baseline name: Phase 2 - System Definition To freeze outputs of the design part of phase 2 of EN50126-2017: -  SPPR-7906 - System Definition - Capella model (GIT tag and Polarion project baseline of the project containing the Capella Work Items)	When task/domains PRAMS need to start new analysis Precondition: document in the baselines have been reviewed (but not necessarily approved)
Milestone SP release	EET PRAMSS Lead and Task/ Domains PRAMSS	Baseline name: Phase 3 - Risk analysis and evaluation To freeze outputs of the design part of phase 3 of EN50126-2017: - Hazard List and hazard allocation to functional model	When task/domains needs to start system requirements specification Precondition: document in the baselines have been reviewed (but not necessarily approved)
Milestone SP release	EET PRAMSS Lead and Task/ Domains PRAMSS Task/Domains	Baseline name: Phase 4 - System requirements To freeze outputs of the design part of phase 4 of EN50126-2017: -  SPPR-7923 - System Requirements Specification - <i>System Requirements test Specification (see  SPPRAMSS-9693 - Connection between PRAMS and IP FP2 R2DATO WP34/35 Testing)</i> - Capella model	When task/domains need to start system architecture. Precondition: document in the baselines have been reviewed (but not necessarily approved)
Milestone SP release	EET PRAMSS Lead and Task/ Domains PRAMSS	Baseline name: Phase 5 - System architecture To freeze outputs of the design part of phase 5 of EN50126-2017: -  SPPR-7924 - System Architecture Description -  SPPR-7925 - System Interface Description of internal interfaces (as defined for the considered system level, for the System under Consideration) - <i>System Integration Test Specification (see  SPPRAMSS-9693 - Connection between PRAMS and IP FP2 R2DATO WP34/35 Testing)</i> - Capella model	When task/domains PRAMS need to start new analysis Precondition: document in the baselines have been reviewed (but not necessarily approved)


Classification  SPPR-8933 - Classification of System Pillar Releases	Reviewers	Content of the baseline? (What) and link with CENELEC phase	Trigger for delivery? (When)
Internal SP Release	Deliveries inside ERJU	Complete baseline of SP deliverables	As planned in  Document and Release Plan - Main
External SP Release	Deliveries outside ERJU	Complete baseline of SP deliverables	As planned in  Document and Release Plan - Main

[SPPR-9689]

3.4.4 Process of creation of a System Pillar Release

See *SPPROCESS/10 SEMP V 01_01/CMP Annex A - System Pillar Baseline Creation Process : 720152*

3.5 Branching and Merging

For documents, see  SPPR-10629 - Notes on document branching (advanced)


Except in the context of review process, usage of Branching (with or without Merging) is not defined yet as not needed for the moment in System Pillar. If needed in the future, name of branch, trigger for branching and merging, ... will need to be defined.

4 Change Control

4.1 Change management process

Refer to *SPPROCESS/SEMP Annexes/Configuration Management Plan - Annex B Change Control Management Process : 720152 [SPPR-9591]*

Note: To identify changes, Polarion tool provides a **comparison functionality** that allows to see all the changes between two revisions of a document, of a work item, ... in a graphical way.

1.  Select this symbol on the right ,
- 2.

Current revision		Select 2 revisions and press Compare	Compare	SI
<input type="checkbox"/> Revision				Update
<input checked="" type="checkbox"/> 349817				Renard
<input type="checkbox"/> 349816				Renard
<input type="checkbox"/> 349814				EDDOL
<input type="checkbox"/> 349812				EDDOL
<input checked="" type="checkbox"/> 349811				EDDOL

then the revisions you want to compare :

The changes are identified, pink for the oldest version, green for the newest version.

The general structure (explained here for possible future extensions) is:

1. **Prefixed:** Begin each **Configuration Item** name with a prefix to denote its category or identify the purpose or nature of the item at a glance.
2. **Subsystem Identification:** Use a consistent naming convention to identify subsystems system. This helps in organizing **Configuration Items** based on their functional domain.
3. **Specific Identification:** Include specific identifiers or names relevant to the individual item, be a numerical code, a unique identifier, or a descriptive name.
4. **Versioning:** Include version numbers or revision identifiers to track changes and updates over the period of time. This ensures proper version control and management.

TEMPLATE: <Prefix>_<Subsystem ID>_<Specific ID> - <Suffix for split>

The resulted comparison document since the last major baseline shall be exported besides the document itself. [SPPR-9704]

5 Configuration Status Accounting

Configuration Status Accounting (CSA) is the activity to record and report the information needed to manage the configuration effectively. This includes the list of the approved configuration documentation, the status of proposed changes and the implementation status of approved changes of CIs during the product lifecycle.

In Polarion, each project will contain a standardised Dashboard topic presenting Configuration Items Status. [SPPR-9692]

5.1 Configuration Status Accounting Reports

The following reports are established for reporting the Configuration Management data:
The **Configuration Status Accounting (CSA)** will be implemented and as a minimum, it shall:

- Contribute to the Configuration Item List
- Provide product structures and associated baseline documentation of each capability
- Record and report the status of proposed engineering changes from initiation to final approval/contractual implementation and closure
- Record and report the results of configuration audits to include the status and final disposition of identified discrepancies
- Provide the traceability of all changes from the original baseline configuration documentation of each Configuration Item
- Report the installation status of configuration changes to all Configuration Items at all sites
- Maintain the traceability links between all related data to enable the retrieval and integration of various data items, the navigation through the (implicit/explicit) links established between the items and the creation of the traceability matrix between all related data items
- Provide full traceability between the different configuration items (Change Requests, Defects, Baselines...)
- Provide metrics to measure product quality and/or maturity

This information is continuously updated (see tasks of the task/domain Configuration Manager) to allow its reporting at any time.

The Configuration Status Accounting reports are produced as part of the project management information delivered for each Core Group Review Meeting. They reflect the current CM data at the time of publishing. They also can be produced on request as standalone documents.

[SPPR-9693]

5.2 Configuration Management Metrics


The CM metrics will be developed during the project.

Here are a few proposal

Metric name	Metric definition	Person in Charge of the elaboration	Time of elaboration	Goal of the metric	Target audience
Conf KPI 1 Progress status of Configuration Items per Task/ Domain regarding the planned number of baselines (primary / secondary)	Counts per domain/per month the number of In review/Approved Documents referred as one instance of documents identified in <i>SPPROCESS/ Configuration items/ Configuration Items : 720152</i>	Task/Domain Configuration Manager	Updated each month	Measure the progress of the documentation approvals.	Core group

[SPPR-9690]

6 Configuration Verification & Audits

Product performance and functional requirements defined in configuration documentation and compliance through management plans are ensured through product review and auditing. The list of configuration audits shall be consolidated and scheduled by the  **SPPR-10391 - Quality Manager** team and integrated into the respective project audit plan. The System Pillar audit plan (derived from REMIT) shall be initially set up as early as possible. The results should be stored in the documentation management system as defined in the *SPPROCESS/10 SEMP V 01_01/Quality Management Plan : 720152*.

The **configuration audit** has the following purposes:

- To identify major non-conforming activities violating the valid Configuration Management Process requirements and resulting in serious potential risks.
- To define actions for issue resolution and risk mitigation.
- To propose measures for continual process improvements, based on Lessons-Learned and Best Practices.

The configuration audit focuses on the Configuration Management process and its related documents to check if the CM process is executed in the project as planned in the CMP, as requested by CM standards and external requirements, and if CM parameters and their essential factors are understood, managed and controlled. [SPPR-9691]

6.1 Quality Management Artefacts

The configuration (record-keeping) of quality management reviews warrants a separate section as quality management is an independent entity within the System Pillar, as it should be. It must therefore have a global location within Polarion where the Quality Manager uploads all review results.

This is defined in *SPPROCESS/10 SEMP V 01_01/Quality Management Plan : 720152* [SPPR-9696]

6.2 Review Artefacts

The main quality management folder must have a sub-folder named "Review Artefacts" (for example all review proofs).

The location of the folder, the naming conventions to follow, the archiving of artefacts are described in chapter related to Quality artefacts of the *SPPROCESS/10 SEMP V 01_01/Quality Management Plan : 720152*.

The management of this folder is left to the  SPPR-10390 - Lead Quality Manager. [SPPR-9702]

7 Configuration Management Tools and Environment

7.1 Configuration Management Tools

The System Pillar program will use industry-recognised tools for all their activities (see SEMP Systems Engineering Management Plan). The chosen tools have configuration management capabilities:

- Capella is used with the [Capella Collab Manager](#) and GIT.
- Polarion has built-in configuration management capabilities

[SPPR-9703]

7.2 Data Management

Storage and archiving of data are supported and maintained in the Engineering Environment Team coordinating the people in charge of hosting the tools.

Preliminary documents that needs to be exchanged for review purpose can be stored in the [SP OpenShare](#) platform.

Nothing has been defined yet for archiving data at end of System Pillar programs. Defining such strategy now (2024) is far too early considering the foreseen lifetime of these programs. Traced through action

☒ SPPR-9931 - [Long term] Define strategy for archiving data at end of System Pillar programs




[SPPR-9700]

8 Appendix

8.1 Standards and references

SPPROCESS/10 SEMP V 01_01/SEMP Annex Related Standards and Norms : 720152




CMPlan standards and references

Short Name	Body	Description and Reference
 SPPR-2681 - [EN 50126-1:2017]	2017-10	Railway Applications - The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS) - Part 1: Generic RAMS Process
 SPPR-10717 - ISO 10007	ISO 10007:2017	Guidelines for Configuration Management (Contractual Requirements)
 SPPR-10718 - STANAG 4427	NATO	Configuration Management in System Life Cycle Management Edition 3, 18 December 2014, NATO non-classified

[SPPR-9701]

8.2 Additional Appendix

Additional information is available in

-  Configuration Management Plan - Annex A System Pillar Release Creation Process
-  Configuration Management Plan - Annex B Change Control Management Process
-  Configuration Management Plan - Annex C Document Management Plan, Review and Approval Process [SPPR-11227]



9 Open points and tasks for this document

9.1 General tasks

Automatic history in the document to be defined based on Change Requests links



Automatic history in the document to be defined based on Change Requests links

Then it may be generated automatically

ID	SPPR-9460
Status	 Open
Owning Group	 SPPR-7134 - Engineering support

[Long term] Define strategy for archiving data at end of System Pillar programs

Note: Defining such strategy now (2024) is far too early considering the foreseen lifetime of these programs

ID	SPPR-9931
Status	 Open
Owning Group	 SPPR-7134 - Engineering support



Define a process for documents external to Polarion

Need to define a process for documents external to Polarion (external to SP, external to Polarion management)

Proposal = Creation of collection, empty documents or imported word, ... + decide which status to give known use cases; trackside assets if they continue to work in DOORS (to be confirmed see task above) + IP docs

Purpose: have a controlled set of inputs for Polarion (e.g. well defined trackside asset baseline, ...)

Note: This task is closed in CMPlan for SC2.4, for SC2.y(y>4) this has to be confirmed.

ID	SPPR-9125
Status	 Waiting
Assignee(s)	Renard, Marie Pierre (SMO RI MT FR ADC TGMTR3), ANTOONS Gilles
Owning Group	 SPPR-7134 - Engineering support

Define the export folder for output files (to be defined within System Pillar context)

Define the export folder for output files (to be defined within System Pillar context)

ID	SPPR-9572
Status	 Open

Connection between PRAMS and IP FP2 R2DATO WP34/35 Testing


Until SC2.5, no team dealing with testing activities was built within SP.

The activity of testing shall be started as soon as the first system requirements are defined to initiate the discussion on modular and automatic testing activities.

An official connection has been done between the PRAMS teams and the IP teams dealing with testing activities (i.e. WP33 and WP34). A roadmap shall be defined for remit SC2.6 to see how the two teams can collaborate on the technical topic of testing activities in the context of evolution management.

ID	SPPRAMSS-9693
Status	 Open



SEMP V5 Update Configuration Status Accounting Reports section in CMPlan

Update  SPPR-9693 - The following reports are established for reporting the Configuration Management...

according to comments from Steffen Schmidt related to this section

- CSA overlaps with PMO remit status management, to be organised efficiently.-



- The status of all artefacts and the planned timing of work is of interest for very much people (stakeholder, CG, STG, ...). We should show (coordinated with PMO and ARC release management) where and how we make it transparent (e.g. Polarion reports etc.).

ID	SPPR-11229
Status	 Open
Assignee(s)	Renard, Marie Pierre (SMO RI MT FR ADC TGMTR3)
Owning Group	 SPPR-7134 - Engineering support

9.2 Closed points

Add information in CMPlan about platform for temporary document exchange and giv...

Add information in CMPlan about platform for temporary document exchange and give the link [SP OpenShare](#)

ID	SPPR-10666
Status	 Done
Assignee(s)	Renard, Marie Pierre (SMO RI MT FR ADC TGMTR3)
Owning Group	 SPPR-7134 - Engineering support

Review list of WIs of type roles in EET project

1. Review list of WI roles in EET project
2. Check consistency, add from plans
3. Replace new WI in plans where mentioned
4. Update list of SEMP roles document

ID	SPPR-9822
Status	✓ Done
Assignee(s)	ANTOONS Gilles
Owning Group	🧑 SPPR-7134 - Engineering support

Add a link to Core Group planning of baselines (link to PMO schedule ?) + PRAMSS needs

Notes:

- This comes from comment raised during review of CMP v1.0 in Sept 2024
- question raised to EET Leads and PRAMSS on 23rd Sept 2024

2024-09-25 Elements of answers provided by Core Group (see attached mail)

ID	SPPR-9930
Status	✓ Done
Assignee(s)	Renard, Marie Pierre (SMO RI MT FR ADC TGMTR3)
Owning Group	🧑 SPPR-7134 - Engineering support

Merge SEMP Annex Z with CMPlan

First check if some workitems are defined in SEMP Annex Z - Documents Publication and Exchange Process < 10 WP1 SEMP < Documents & Pages < SPPROCESS (europa.eu)

Move the used definitions in another document (CMPLan for example)

Then ask to move move appendix Z to recycle bin : done

ID	SPPR-9346
Status	✓ Done
Assignee(s)	Renard, Marie Pierre (SMO RI MT FR ADC TGMTR3)
Owning Group	🧑 SPPR-7134 - Engineering support

[CMP] Make a proposal on Release Note

Make a proposal on Release Note

Note: part of it will be automatically generated from Polarion

ID	SPPR-8940
Status	✓ Done
Assignee(s)	ANTOONS Gilles
Owning Group	🧑 SPPR-7134 - Engineering support

PC1 - To be updated and rationale to be added to meet git tag constraints

PC1 - To be updated and rationale to be added to meet git tag constraints

See [Tagging Commit Points with Git | PracticalSeries: Brackets-Git and GitHub](#)

ID	SPPR-9232
Status	✓ Done
Assignee(s)	Renard, Marie Pierre (SMO RI MT FR ADC TGMTR3)
Owning Group	🧑 SPPR-7134 - Engineering support

