




ERJU SYSTEM PILLAR

# **Configuration Management Plan - Annex B Change Control Management Process**



# Configuration Management Plan - Annex B

## Change Control Management Process

|                  |                                                                                                                                                                                                                                                                            |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Author(s)        | Jorge Block , SCHWAN Nico , Domínguez Fernández, Silvia , Renard, Marie Pierre (SMO RI MT FR ADC TGMTR3)                                                                                                                                                                   |
| Abstract         | This document describes the change control management process used in the System Pillar.                                                                                                                                                                                   |
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## Document History

|                |                                                |                                           |
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| 1.1 23.07.2025 | Jorge Block                                    | Reviewed version including Change Request |
| 2.0 24.07.2025 | Renard, Marie Pierre (SMO RI MT FR ADC TGMTR3) | Approved version based on Review 1.1      |

## Approval by reviewers (captured at end of 'In Review by System Pillar')

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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| Attachments      | <a href="#">Configuration_Management_Plan_-_Annex_B_Change_Control_Management_Process.xls.xlsx</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## Approval by approvers (captured at end of 'In Approval by System Pillar')

|                  |                                                                                                                                                                                                                                                                                                    |
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| Type of Approval |  Document Approval                                                                                                                                                                                                |
| Approvals        | Simone Brezzi : Approved , SCHWAN Nico : Approved , Schmidt Steffen (I-NAT-GST-ERTM) : Approved , KEFALAS, Georgios : Approved , SANGO Marc (SNCF / DIR TECHNOLOGIES INNOVATION ET PROJETS GROUPE / IR DIR RECHERCHE - PSF) : Approved , Renard, Marie Pierre (SMO RI MT FR ADC TGMTR3) : Approved |

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## 1 Preamble

### 1.1 Purpose

This annex provides the overview and explanation about controlled changes in the System Pillar.

### 1.2 Intended Audience

The content of this annex is valid for all the System Pillar tasks and domains.

### 1.3 Document Context


This document is an annex of the  Configuration Management Plan.

### 1.4 Glossary

No references

## 2 Change control management process description

### P9.1 Change control management process









The purpose of the change control management process is to ensure proper change management of documents that is subject to change control, such as published System Pillar documents. The process ensures effective planning, implementing, and controlling changes within System Pillar to minimise disruption, manage risks, and ensure desirable outcomes while considering the impact and full traceability of changes. This is needed especially for safety-related functionality to express what has been changed by whom and to understand the impact on the whole system. To carry out this process, a  SPPR-5697 - Change Control Board (CCB) handles pending change requests by analysing and deciding on implementation proposals. The change control board members are representatives for different disciplines to handle requested changes from different aspects.













#### Note:

- For changes that target TSIs or European Standards, the change control management process of the respective organisation is applicable.
- The change control management process, as the Review and Approval process, prepares the input to the sector decision process in line with the SP Governance.

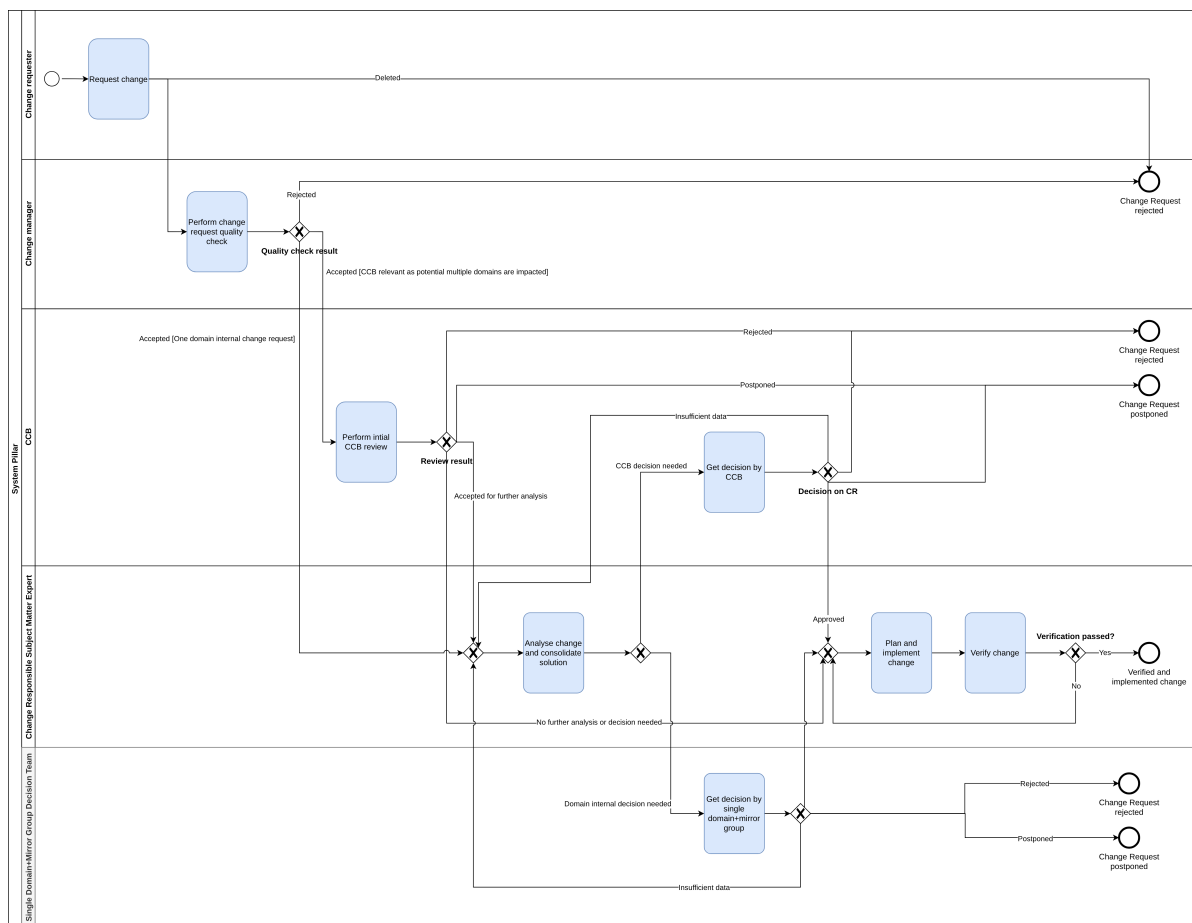
Furthermore, this change control management process can also be applied to changes involving internal, unpublished documents or work items that populate the master database from which outputs are generated. To accommodate this, smaller Change Control Boards may be established within individual domains, but only for content that does not involve or impact multiple domains.

The process tasks of this process are:

-  SPPR-4617 - Request change
-  SPPR-5569 - Perform change request quality check
-  SPPR-4618 - Perform initial CCB review
-  SPPR-4619 - Analyse change and consolidate solution
-  SPPR-4620 - Get decision by CCB OR  SPPR-10488 - Get decision by single domain+mirror group
-  SPPR-4621 - Plan and implement change
-  SPPR-4622 - Verify change implementation

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inputs                | Change need                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Supplier              | Change Requester                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Outputs               | - Implemented and verified change<br>OR<br>- rejected change<br>OR<br>- postponed change                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Customer/<br>Receiver | Change Requester                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Linked Work<br>Items  | has parent :  SPPR-5823 - Change control management process description<br>_ is parent of :  SPPR-4603 - Change Management Process Flow<br>_ is parent of :  SPPR-4617 - Request change<br>_ is parent of :  SPPR-4618 - Perform initial CCB review<br>_ is parent of :  SPPR-4619 - Analyse change and consolidate solution<br>_ is parent of :  SPPR-4620 - Get decision by CCB<br>_ is parent of :  SPPR-4621 - Plan and implement change<br>_ is parent of :  SPPR-4622 - Verify change implementation<br>_ is parent of :  SPPR-5569 - Perform change request quality check<br>_ is parent of :  SPPR-5733 - Change request has a correct change type<br>_ is parent of :  SPPR-6082 - Change request relationships<br>_ is parent of :  SPPR-10488 - Get decision by single domain+mirror group |
| ID                    | SPPR-5822                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

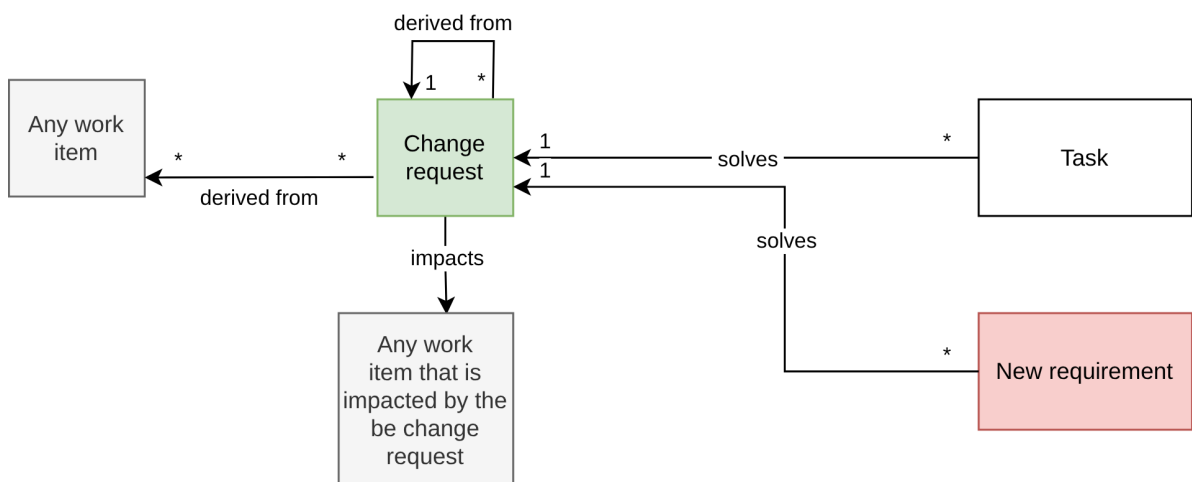
### Change Management Process Flow



[SPPR-4603]

### Change request relationships























The relationships of the Work Item Change Request:






[SPPR-6082]

**Change request impacts each work item that shall be changed based in the change request**

|                 |                |
|-----------------|----------------|
| Source Workitem | Change Request |
| Link Role       | impacts        |





|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Target Workitem |  Accident,  Application Condition,  Common Business Objective,  Definition,  Diagram,  Hazard,  Operational Activity,  Operational Requirement,  Operational Process,  Risk,  Stakeholder Requirement,  System Requirement,  Test Case,  Constraint,  C2P-Actor,  C2P-Function,  C2P-Functional Exchange,  C2P-Interface,  C2P-Exchange Item,  C2P-System,  C2P-Scenario,  Railway Requirement |
| Mandatory type  | mandatory link for source                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

### Task or new requirement solves change request or issue

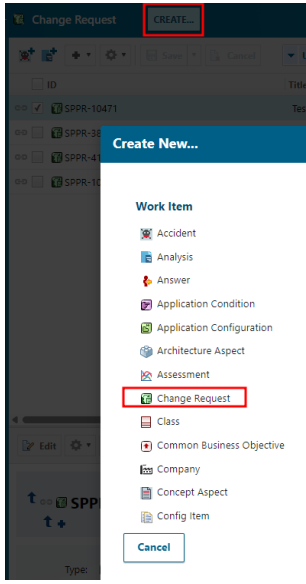

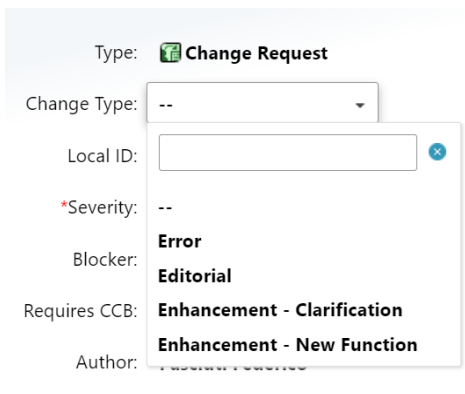
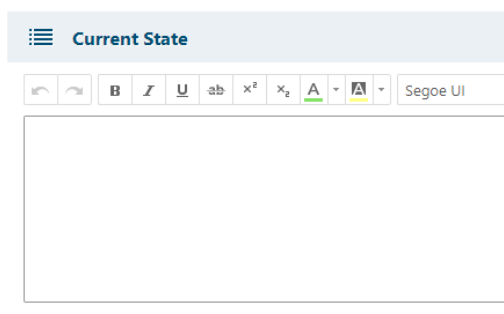
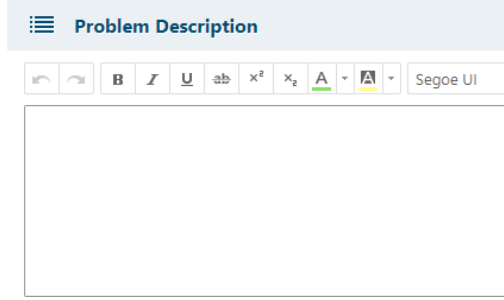
|                 |                                                                                                                                                                                              |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Source Workitem |  Task,  System Requirement |
| Link Role       | solves                                                                                                                                                                                       |
| Target Workitem |  Change Request                                                                                             |
| Mandatory type  | mandatory link for target                                                                                                                                                                    |

### Change request is derived from other any work item that is the origin of the change request

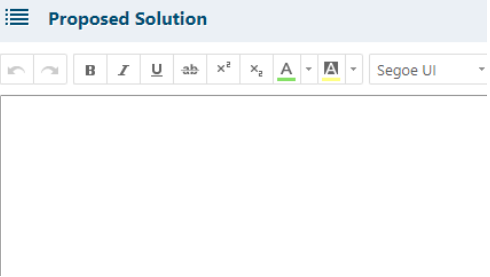

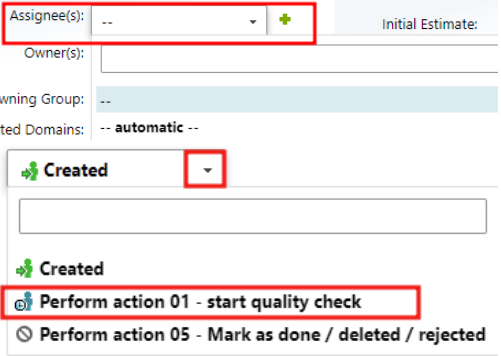
Target work items could be e.g. other change request or issue

|                 |                                                                                                                                                                                                                                                                                                       |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Source Workitem |  Change Request                                                                                                                                                                                                    |
| Link Role       | is derived from                                                                                                                                                                                                                                                                                       |
| Target Workitem |  Change Request,  Issue,  System Requirement |
| Mandatory type  | optional link                                                                                                                                                                                                                                                                                         |

## Request change

| Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Illustration                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <p>Create a change request and start the change control management process. Eligible stakeholders with an interest on the work product can request a change. Trigger for a change could be, but not limited to:</p> <ul style="list-style-type: none"> <li>• Improvements</li> <li>• Issues in the review process addressed to future versions</li> <li>• Issues in the approval process addressed to future versions</li> <li>• Lessons learned</li> <li>• Scope changes</li> <li>• Testing activities</li> <li>• Validation activities</li> <li>• Change of relevant regulations or standards</li> </ul> <p>A change is documented in Polarion with the Work Item change request.</p> |    |
| <p>Select the change type  <u>SPPR-5733 - Change request has a correct change type</u></p> <ul style="list-style-type: none"> <li>• Error</li> <li>• Editorial</li> <li>• Enhancement - clarification</li> <li>• Enhancement - new functionality</li> </ul>                                                                                                                                                                                                                                                                                                                                           |   |
| <p>Provide a description of the <b>current content</b> that may be changed with the change request with reference to the to be changed version.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| <p>Provide <b>problem statement</b></p> <ul style="list-style-type: none"> <li>• The reason for the change request should be clearly indicated. In any case, any mixing of the problem with the solution description should be avoided. The aim is to clearly identify what problem will be solved by the change.</li> </ul>                                                                                                                                                                                                                                                                                                                                                            |  |



| Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Illustration                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <p>Provide a <b>solution proposal</b> or different solution options in the field "Proposed Solution". For larger solution proposals, attachments or links to other sources, e.g. separated live document. The aim is to provide as much information as possible for the later analysis and decision part.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |
| <p>The following fields are optional in the creation phase and only needs to be put in if already available. Otherwise they will be provided during the analysis phase of the change request.</p> <p>Optional:</p> <ul style="list-style-type: none"> <li>• provide a list of affected specification documents</li> <li>• provide preliminary assessment of the benefits <ul style="list-style-type: none"> <li>◦ In case of an enhancement, the order of magnitude of the benefits resulting from the expected improvement of performances, safety, reliability and maintainability.</li> </ul> </li> <li>• consequences of the addressed problem <ul style="list-style-type: none"> <li>◦ Description of the consequences of the addressed problem. There can be different aspects such as: <ul style="list-style-type: none"> <li>▪ Unavailability of equipment or components;</li> <li>▪ Operational aspects (impact on normal or fallback operation; specific operational procedures not possible; delay in operation causing delay minutes);</li> <li>▪ Economic aspects (loss of revenue, impact on maintenance or operating costs)</li> </ul> </li> </ul> </li> </ul> | <p>-</p>                                                                             |
| <p>If the mandatory fields are filled in, the change requester include the  SPPR-5818 - Change Manager as assignee and moves the change request into quality check.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |


|          |                        |
|----------|------------------------|
| Inputs   | Issue, Change need     |
| Supplier | Change Requester       |
| Outputs  | Created change request |

|                       |                                                                                                                                             |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Customer/<br>Receiver | Change Manager                                                                                                                              |
| Linked Work<br>Items  | has parent : ➡ SPPR-5822 - P9.1 Change control management process<br>_ is ruled by : ! SPPR-5733 - Change request has a correct change type |
| ID                    | SPPR-4617                                                                                                                                   |

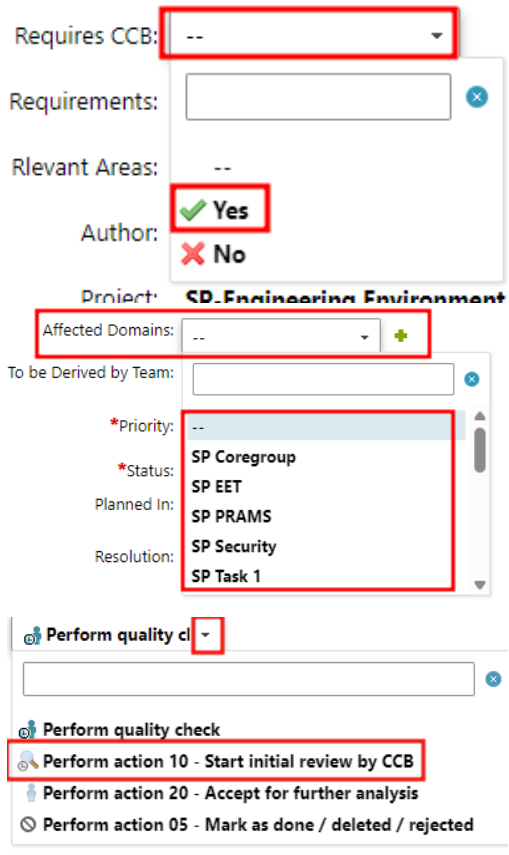
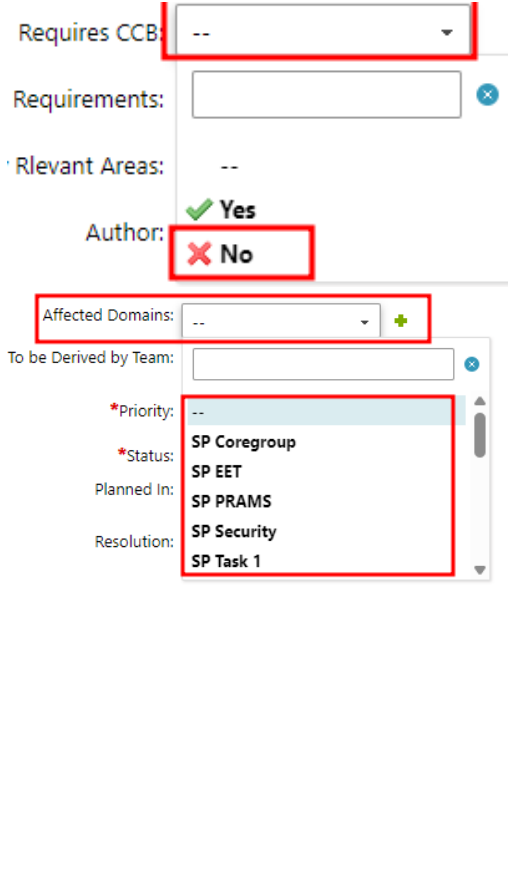
### Change request has a correct change type

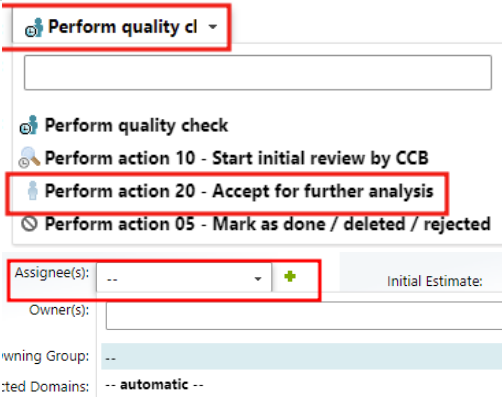
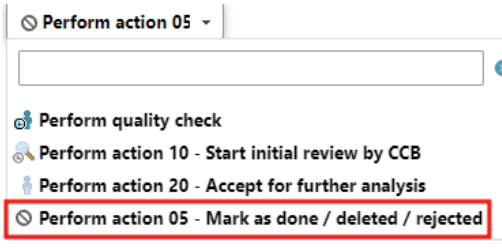
| Change type                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Error                           | The change request shall be classified as an Error when it relates to any incorrect detected functionality, inconsistency or gap found in a work product or in work item.                                                                                                                                                                                                                                                                                    |
| Editorial                       | The change request shall be classified as an Editorial when it relates to textual, grammatical, graphical or similar changes in a work product or work item that enhances the quality and consistency of the work product or work item, but doesn't present any functional change. It may correct an error if the current state of the work product or work item doesn't lead to wrong understanding, i.e. the intended meaning can be derived from context. |
| Enhancement – Clarification     | The change request shall be classified as an Enhancement – Clarification when it relates to functional change that refines or modifies but doesn't extend the scope of the currently specified functionality.                                                                                                                                                                                                                                                |
| Enhancement – New functionality | The change request shall be classified as an Enhancement – New functionality when it relates to functional change that specifies functionality which has yet not been part of the functional scope.                                                                                                                                                                                                                                                          |


### Perform change request quality check

The  SPPR-5818 - Change Manager performs a formal quality check for completeness and consistency. This includes also check of attachments and overall appearance and understand-ability of the change request. Criteria are defined in ➡ SPPR-4617 - Request change.  
The quality check results in:

| Description                                                                                                                                                                                                                                                                                                                | Illustration |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <p><b>Accepted for initial CCB review</b> if the change request is relevant for the CCB because multiple domains may impacted.</p> <ul style="list-style-type: none"> <li>• Select the required for CCB: Yes</li> <li>• Select the affected domains</li> <li>• Moves the change request into initial CCB review</li> </ul> |              |


| Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Illustration                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |
| <p><b>Accepted directly for further analysis</b> because it is not CCB relevant as only one single domain is impacted and there is no change in safety or security relevant functionality.</p> <ul style="list-style-type: none"> <li>• Select the required for CCB: No</li> <li>• Select the affected domain</li> <li>• The respective <u>Change Responsible Subject Matter Expert</u> is assigned in order to provide an impact analysis and a consolidated solution to the problem statement.</li> </ul> |  |

| Description                                                                                                                                                                                         | Illustration                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                                                                                                                                                                                                     |  |
| <p><b>OR Reject the change request</b> due to quality reason.</p> <p>In case of rejection the process is completed the requester should be informed so that he can complete the change request.</p> |  |

|                    |                                                                                                                                                     |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Inputs             | Created Change request with problem statement                                                                                                       |
| Supplier           | Change Manager                                                                                                                                      |
| Outputs            | Change request quality check result and allocation if CCB is needed or not                                                                          |
| Customer/ Receiver | CCB, Change Responsible Subject Matter Expert                                                                                                       |
| Linked Work Items  | has parent :  SPPR-5822 - P9.1 Change control management process |
| ID                 | SPPR-5569                                                                                                                                           |

### Perform initial CCB review

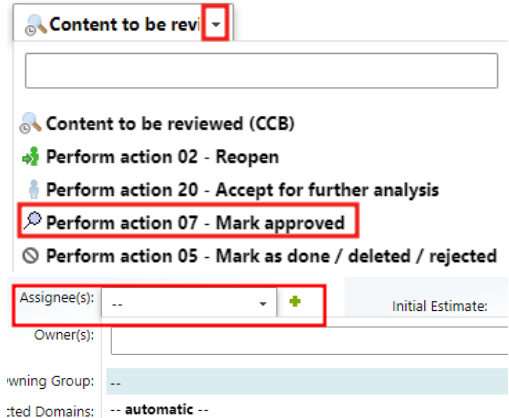
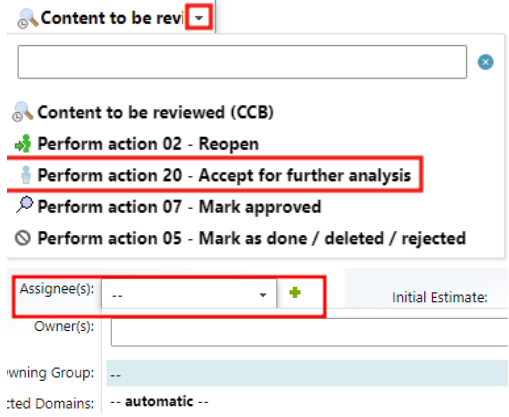
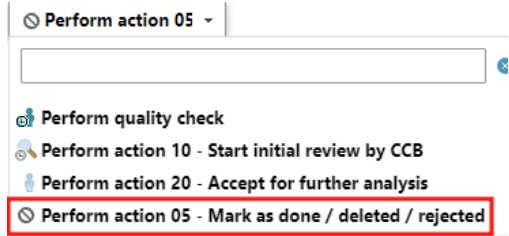
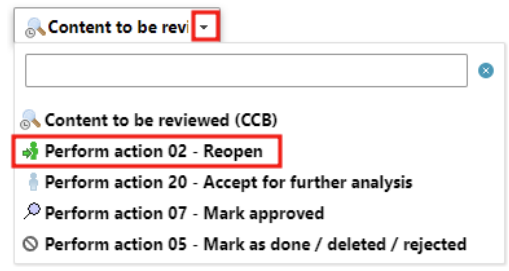
The Change Control Board (CCB) reviews the change request and decides about further impact analysis, during their regular CCB meetings.

Furthermore the CCB checks if the change type is correct according to  [SPPR-5733 - Change request has a correct change type](#).

The review result and a rationale for it should be documented in the comment section of the change request Work Item. State changes of Change request Work Items are done by the CCB during the CCB review.

There are four possible outcomes of this review:

| Description                                                                                                                                                                                                                                                                                                                                          | Illustration |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <p><b>No further impact analysis needed</b> therefore the change request is moved to planning and implementation.</p> <p>If the change has only local significance and does not have impacts to other areas no further impact analysis and later CCB decision is needed. The result of this assessment is to be documented in the change request</p> |              |

| Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Illustration                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <p>with a comment and link to relevant meeting notes.</p> <ul style="list-style-type: none"> <li>The respective <u>Change Responsible Subject Matter Expert</u> is assigned in order to plan and implement the change.</li> </ul> <p>Criteria (not exhaustive) for "no impact analysis is needed" are:</p> <ul style="list-style-type: none"> <li>Only changes in affecting one domain, subsystem, process</li> <li>No change on interfaces</li> <li>No change in safety or security relevant functionality</li> <li>Solution proposal is already complete and agreed</li> </ul> |    |
| <p><b>Accept the change request</b> and move change request to further impact analysis.<br/>The respective <u>Change Responsible Subject Matter Expert</u> is assigned by the change control board to the change request in order to provide an impact analysis and a consolidated solution to the problem statement.</p>                                                                                                                                                                                                                                                        |   |
| <p><b>Reject the change request</b><br/>Change request might be rejected due to one of the following but not limited to criteria:</p> <ul style="list-style-type: none"> <li>change not logical</li> <li>change not feasible</li> <li>duplicate</li> <li>nice to have</li> <li>technical risks</li> <li>change has no business case</li> </ul> <p>In case of rejection a reason should be provided, then process is completed for the change request.</p>                                                                                                                        |  |
| <p><b>Postpone the change request</b> (Move the change request status back to open)<br/>If a request of change would make sense, but preconditions are not fulfilled the change request can be postponed.<br/>The change request can be raised in the CCB later on or brought up by the change requester if necessary preconditions are fulfilled and will start from <a href="#">SPPR-4617 - Request change</a> again.</p>                                                                                                                                                      |  |
| Inputs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Change request quality checked                                                       |
| Supplier                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CCB                                                                                  |
| Outputs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Initial CCB review result                                                            |

|                   |                                                                   |
|-------------------|-------------------------------------------------------------------|
| Customer/Receiver | Change Responsible Subject Matter Expert                          |
| Linked Work Items | has parent : ➡ SPPR-5822 - P9.1 Change control management process |
| ID                | SPPR-4618                                                         |

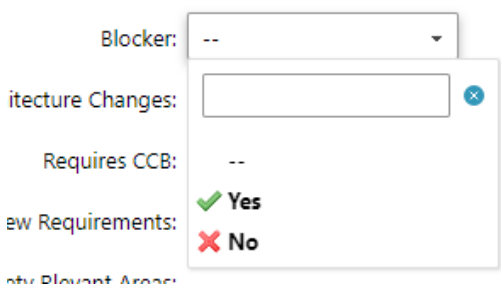
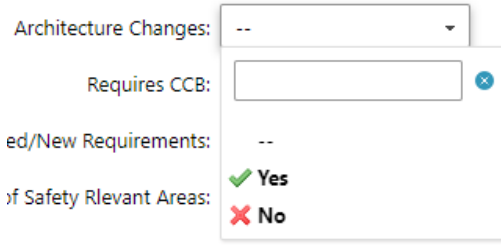
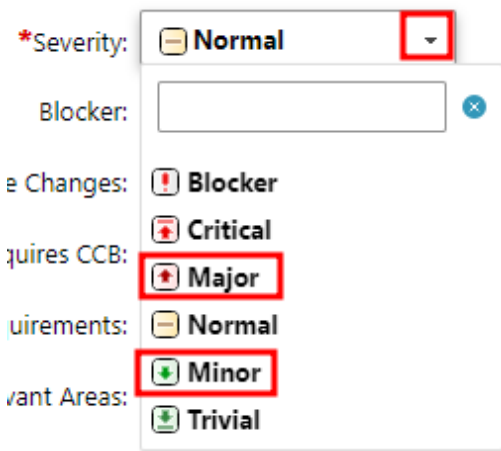
### Analyse change and consolidate solution



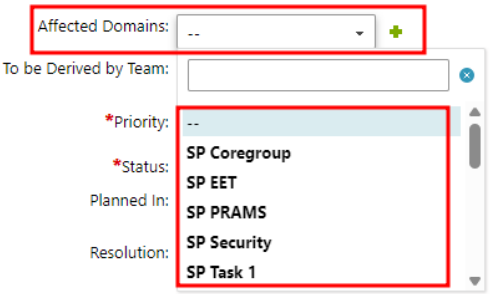
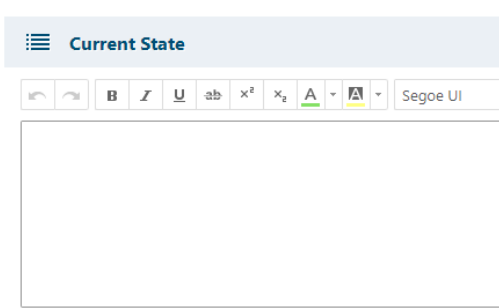
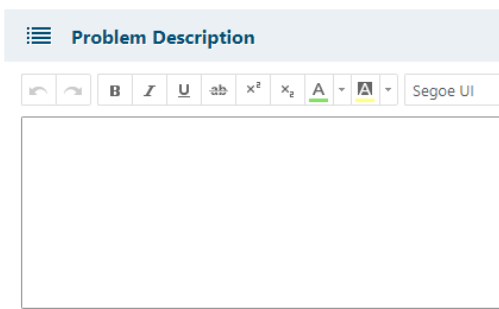
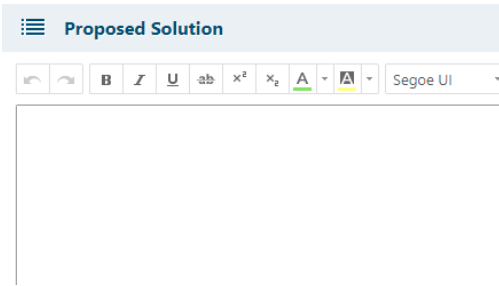
The Change Responsible Subject Matter Expert analyse the change regarding impact, risks, effort and benefits and document the results in the change request work item in order to































- get comparable analysis detail levels from all participants and
- simplify to summarise the different analysis to a proposed solution

The analysis participants should provide their analysis in a suitable time frame and should acknowledge actively that the analysis was finished. For small change request not all fields needs to be filled in this case the Change Responsible Subject Matter Expert provides "Not applicable" into the relevant section.

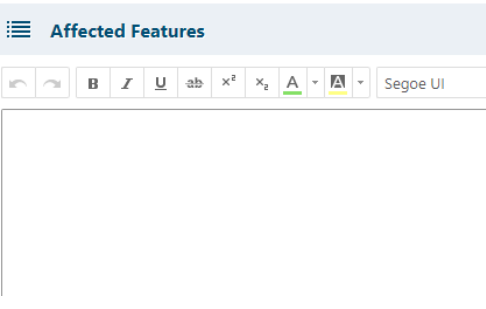
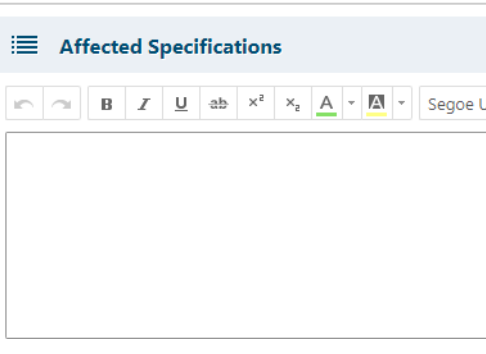
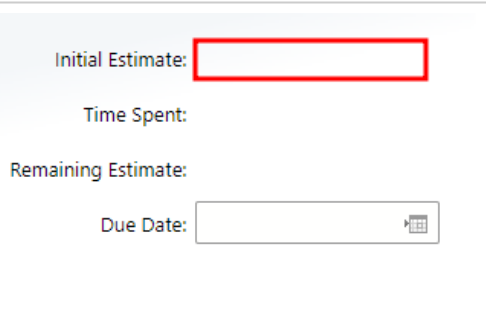
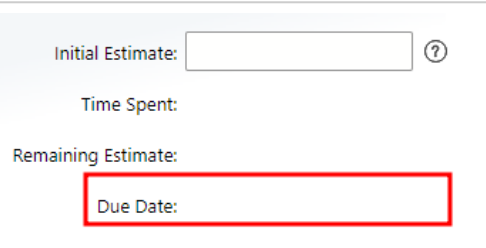
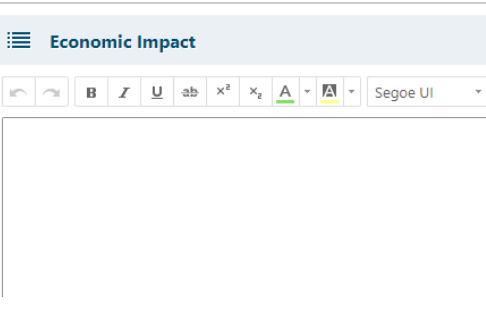
For architecture related change request at least the following information should be provided:

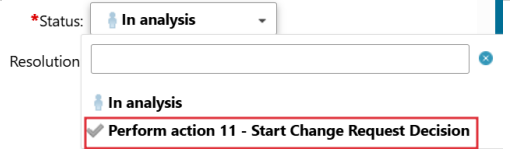
| Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Illustration                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>Blocker (YES/NO)</b><br>Set to YES if there is a high safety or customer impact if the change is not implemented.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |
| <b>Architecture changes (YES/NO)</b><br>Set to YES if the system architecture is modified                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| <b>Severity (Major/Minor)</b> classify severity implied by the implementation of the proposed solution. <ul style="list-style-type: none"> <li>• Major severity: These requests are changes that have significant impact on systems, services, or users. They may involve higher risk, require extensive testing, planning, and approval, and can affect critical business processes.</li> <li>• Minor severity: These involve low-impact changes, with minimal risk and scope. Minor requests are often routine, quick to implement, and unlikely to disrupt services or operations.</li> </ul> |  |

| Description                                                                                                                                               | Illustration                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>Changed/new requirements (YES/NO)</b><br>Set to YES if change or new requirements are necessary by the change.                                         |    |
| <b>Change of safety relevant areas (YES/NO)</b><br>Set to YES if the change is safety related. Take this decision together with the safety expert.        |    |
| <b>List of affected domains</b>                                                                                                                           |   |
| <b>Current state</b>                                                                                                                                      |  |
| <b>Problem description</b>                                                                                                                                |  |
| <b>Proposed solution</b><br>Consolidated solution proposal based on potential solution proposal from Change Requester and/or other alternative solutions. |  |

| Description                                                                              | Illustration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| List <b>possible side effects</b> implied by the implementation of the proposed solution | <div data-bbox="938 309 1428 353">  <b>Potential Side Effects</b> </div> <div data-bbox="938 365 1428 398">   <b>B</b> <i>I</i> <u>U</u>  <math>x^2</math> <math>x_2</math>   Segoe UI         </div> <div data-bbox="938 409 1428 600"></div>                |
| Describe briefly the affected <b>architecture elements</b>                               | <div data-bbox="938 627 1428 672">  <b>Affected Architecture Elements</b> </div> <div data-bbox="938 683 1428 716">   <b>B</b> <i>I</i> <u>U</u>  <math>x^2</math> <math>x_2</math>   Segoe UI         </div> <div data-bbox="938 728 1428 918"></div>        |
| Describe briefly the affected <b>functions</b>                                           | <div data-bbox="938 945 1428 990">  <b>Affected Functions</b> </div> <div data-bbox="938 1001 1428 1034">   <b>B</b> <i>I</i> <u>U</u>  <math>x^2</math> <math>x_2</math>   Segoe UI         </div> <div data-bbox="938 1046 1428 1236"></div>      |
| Describe briefly the affected <b>interfaces</b>                                          | <div data-bbox="938 1263 1428 1308">  <b>Affected Interfaces</b> </div> <div data-bbox="938 1319 1428 1352">   <b>B</b> <i>I</i> <u>U</u>  <math>x^2</math> <math>x_2</math>   Segoe UI         </div> <div data-bbox="938 1364 1428 1554"></div> |
| Describe briefly the affected <b>subsystems</b>                                          | <div data-bbox="938 1581 1428 1626">  <b>Affected Subsystems</b> </div> <div data-bbox="938 1637 1428 1671">   <b>B</b> <i>I</i> <u>U</u>  <math>x^2</math> <math>x_2</math>   Segoe UI         </div> <div data-bbox="938 1682 1428 1872"></div> |
| Describe briefly the affected <b>features</b>                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |




| Description                                                                              | Illustration                                                                         |
|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                                                                          |    |
| Describe briefly the affected <b>specification documents</b>                             |    |
| Estimated effort (h) estimate effort if the change will be implemented                   |   |
| Estimated schedule (weeks) estimate impact on schedule if the change will be implemented |  |
| Economic impact - perform economic analysis                                              |  |
| Create "impacts" link role from change request to each affected work item.               |                                                                                      |
| After analysis is performed move change request to In Decision.                          |                                                                                      |
| Perform action 11 - Start Change Request Decision to                                     |                                                                                      |

| Description                                                            | Illustration                                                                       |
|------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| "Get Decision by CCB" or "Get decision by single domain-Mirror Group". |  |

|                    |                                                                   |
|--------------------|-------------------------------------------------------------------|
| Inputs             | Initially accepted change request                                 |
| Supplier           | Responsible Subject Matter Expert                                 |
| Outputs            | Impact analysis for change with consolidated solution proposal    |
| Customer/ Receiver | CCB, Responsible Subject Matter Expert                            |
| Linked Work Items  | has parent : ➡ SPPR-5822 - P9.1 Change control management process |
| ID                 | SPPR-4619                                                         |

### Get decision by CCB

#### If the change request is CCB relevant!

The change control board (CCB) reviews the results of the change analysis and potential economical impacts. In order to decide to approve or reject the provided solution for implementation. This shall be done during their regular CCB meetings or on demand by invite of the  SPPR-5818 - Change Manager. The review outcome is documented in the Work Item comment section with decision and rationale. Status changes of Change Requests are done by the CCB during the CCB decision meeting.

#### a) Rejected

The change is finished with the result "REJECTED", that means the change will be not further handled.

#### b) Insufficient data for CCB decision (Move the change request back in analysis)

in case of insufficient data for a CCB decision, change analysis can be restarted by entering state "IN ANALYSIS" again ➡ SPPR-4619 - Analyse change and consolidate solution.

#### c) Postponed (Move the change request back to open)


The change is suspended for later handling, e.g. in case other conditions must be fulfilled prior to the execution of the actual change.

#### d) Approved (Move the change request to planning and implementation)

The change is approved for further processing. Additionally the Change Request is assigned to a Responsible Subject Matter Expert so that the detailed planning of the change can start. As part of the approval process, the release in which the change will be implemented must also be determined.

|                    |                                                                   |
|--------------------|-------------------------------------------------------------------|
| Inputs             | Analysed change with consolidated solution proposal               |
| Supplier           | CCB                                                               |
| Outputs            | Approved change request                                           |
| Customer/ Receiver | Responsible Subject Matter Expert                                 |
| Linked Work Items  | has parent : ➡ SPPR-5822 - P9.1 Change control management process |
| ID                 | SPPR-4620                                                         |


### Get decision by single domain+mirror group If the change request is NOT CCB relevant!

The single domain and their mirror group reviews the results of the change analysis. In order to decide to approve or reject the provided solution for implementation. This shall be done during their regular meetings or on demand by invite of the  SPPR-5818 - Change Manager. The review outcome is documented in the Work Item comment section with decision and rationale. Status changes of Change Requests are done during the decision meeting.

#### a) Rejected

The change is finished with the result "REJECTED", that means the change will be not further handled.

#### b) Insufficient data for decision (Move the change request back in analysis)


in case of insufficient data for a decision, change analysis can be restarted by entering state "IN ANALYSIS" again  SPPR-4619 - Analyse change and consolidate solution.

#### c) Postponed (Move the change request back to open)

The change is suspended for later handling, e.g. in case other conditions must be fulfilled prior to the execution of the actual change.

#### d) Approved (Move the change request to planning and implementation)

The change is approved for further processing. Additionally the Change Request is assigned to a Responsible Subject Matter Expert so that the detailed planning of the change can start. As part of the approval process, the release in which the change will be implemented must also be determined.

|                   |                                                                                                                                                     |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Linked Work Items | has parent :  SPPR-5822 - P9.1 Change control management process |
| ID                | SPPR-10488                                                                                                                                          |

### Plan and implement change

The approved change is planned and implemented according to the defined rules.

The change request implementation is planned by the following rules:

#### a) the change request is divided into tasks of suitable duration

For tasks the Work Item Task is used. Task duration shall be not longer than four weeks. A short duration enables an effective monitoring and control of the task execution.


#### b) the identified tasks contain a well delimited scope

Tasks shall have a delimited scope, to enable execution during the recommended task duration. Example: limited to one subsystem only, if applicable

#### c) the tasks can be handled by one responsible person

The task shall be manageable by one person, but if applicable the task can be done by multiple persons or a team. The responsible person is defined in the attribute "Assignee" in the task.

#### d) the tasks are all linked to the change

All tasks shall be linked to the change request  SPPR-2211 - Task or new requirement solves change request or issue.

#### e) tasks are assigned to an implementation time frame

The concrete usage depends on the planning mechanism of the responsible domain.

#### f) the planning might contain tasks for verification activities

The concrete verification shall be planned.

The implementation of the change request is done by the following steps:

#### g) implementation of the change is done by executing the planned tasks within the planned time frame

#### h) quality check of the implementation of planned tasks

The assigned person to the task sets the status to quality review if the task is done and a reviewer is assigned. The reviewer reviews the task results against the solution proposal. After finishing the review successfully the task is set to status "Done".

If all tasks (except specific verification tasks) are done, the change enters the status to "In verification". If a change request is implemented, the respective Change Responsible Subject Matter Expert is assigned to the change request in order to ➡ SPPR-4622 - Verify change implementation.

|                       |                                                                   |
|-----------------------|-------------------------------------------------------------------|
| Inputs                | Approved change                                                   |
| Supplier              | Change Responsible Subject Matter Expert                          |
| Outputs               | Implemented change                                                |
| Customer/<br>Receiver | Change Responsible Subject Matter Expert                          |
| Linked Work<br>Items  | has parent : ➡ SPPR-5822 - P9.1 Change control management process |
| ID                    | SPPR-4621                                                         |

### Verify change implementation

The implemented change has to be verified. The verification result is linked in the Work Item comment section. Thereby, the following shall be taken in account:

1. Verification shall be done independently from the change implementer.
2. Verification shall verify that the changes are in line with the solution proposal that was decided to be implemented.
3. The implemented change has to be verified according to the in the decision process selected verification method. Verification effort shall be reasonable compared to the amount of changes.
  - a. The change shall be verified by following the *SPPROCESS/SEMP Annex D Processes/ SEMP Process 0945-Review and Approval Process : 722277*. If useful verification by tests or other verification methods can be selected, the decision is taken by the Change Responsible Subject Matter Expert.
4. Verification result shall be documented in change request Work Item.
5. If verification fails either
  - a. implementation starts again for correction or
  - b. if a change is not solvable in a suitable time frame, the change goes back to backlog and implementations should be removed
6. If verification succeeds the change is closed status is set to "Done".

|                       |                                                                   |
|-----------------------|-------------------------------------------------------------------|
| Inputs                | Implemented change                                                |
| Supplier              | Change Responsible Subject Matter Expert                          |
| Outputs               | Verified change                                                   |
| Customer/<br>Receiver | Change Responsible Subject Matter Expert                          |
| Linked Work<br>Items  | has parent : ➡ SPPR-5822 - P9.1 Change control management process |
| ID                    | SPPR-4622                                                         |

### 3 Change control management roles

#### Change Requester

Purpose:

- starting the change control management process

Accountabilities:

- Providing initial information about the change, including a reason, expected benefit and a first impact analysis if assessable.
- Supporting the change responsible subject by providing the necessary information for an impact analysis.

[SPPR-5817 ]



A Change Requester may be:



1. A member of the System Pillar Steering Group (Chair, Members, Technical Bodies).
2. A member of the System Pillar working structure (Tasks, Domains, Mirror Groups, Core Group).
3. A named Innovation Pillar System Expert

Most people from these groups will have direct access to the System Pillar Polarion platform. If a person belongs to an organisation included in the groups mentioned above, but have not direct access to Polarion, the change request shall be submitted by a person of that organisation with access to Polarion, who will act as Change Requester.

[SPPR-5695 ]

External Change Requester

If an organisation has no member with direct access to Polarion, a representative of that organisation will act as external Change Requester and send the change request to the  SPPR-5818 - Change Manager. The  SPPR-5818 - Change Manager, after checking that the External Change Requester fulfils the conditions to act as such, will then designate a Change Request Proxy for that change request.

All members of the QM-F team (members of CMS, ARC, or any Domain with the role  SPPR-10391 - Quality Manager) will be eligible as Change Requester Proxies. The  SPPR-5818 - Change Manager shall distribute the change requests among all of them in a fairly fashion.

The Change Requester Proxy will create the change request in the name of the External Change Requester. The change request work item will identify both the Change Requester (Proxy) and the External Change Requester.

[SPPR-5734 ]

#### Change Manager

Purpose:


- Ensures that change requests are effectively and efficiently managed, analysed, tracked and implemented to minimise disruptions.

Accountabilities:

- Setting up and establishing the change control management process and the change control board
- Performing an initial check of the change request on completeness and consistency
- Facilitating discussions and decision-making during Change Control Board meetings to determine the approval or rejection of change requests.
- Providing guidance and support regarding the change control management process to Change Control Board members on the review and evaluation of change requests.
- Documenting and communicating Change Control Board decisions, ensuring proper documentation of approved changes and any associated actions.
- Continuously improving the Change Control Board process by identifying areas for enhancement and implementing best practices.

[SPPR-5818 ]

The  SPPR-5818 - Change Manager will fulfil these criteria:

- Will have the role of the Lead role in the ARC-F Functional Team with the help of  SPPR-10390 - Lead Quality Manager

[SPPR-5696 ]

### **Change Responsible Subject Matter Expert**

Purpose:

- Handles the change request during its life cycle
- Assigned by the Change Control Board

Accountabilities:

- Summarising the change request with respect to impact, risks, effort and benefits created by the analysis team.
- Planning of change implementation and verification
- Assigning responsibility
- Implementing the assigned change
- Verifying the assigned change

[SPPR-5820 ]

Each change request ready for analysis will have a Responsible Subject Matter Expert, selected following these rules:

- The Change Control Board shall chose the Domain / Task responsible to analyse the change, consolidate the solution and, eventually, plan its implementation.
  - The lead author of the affected document(s) may serve as a guide for choosing the Domain / Team.
  - In case of doubt (change request potentially affects several Domains/Tasks in a similar way), the selected Domian / Team shall be the domain T2-ARC.
- The Change Control Board shall ask the leads of the selected Domain / Task to provide an expert for the change request, as soon as the change request is ready for analysis.
- The Domain / Task leads will provide the Responsible Subject Matter Expert in less than 4 weeks. The expert must be a member of the respective Domain / Task [Could be someone else, such as a member of the related mirror group].
  - Exception: In case of an ARC, the expert may be a member of other Domain / Task, agreed with the affected Domains / Tasks

[SPPR-5698 ]

Each implemented change request will be verified by Change Responsible Subject Matter Expert, but not the same person as the implementer. [SPPR-5699 ]


### **Change Control Board (CCB)**

Change Control Board (CCB)

**In 2025 ARC-F was used as CCB.**

After 2025 SP CCB:

The SP will have a CCB composed of 5 fixed members and several ad hoc members. Its composition will follow these rules:

- Fixed members:  SPPR-5818 - Change Manager, ARC and Core group representatives (2).

- Summonable members: 2 from each Domain / Task nominated by domain leads.

✎ SPPR-5818 - Change Manager, task 2 3 4 needs to provide one persons representative the arch responsibility

#### Meetings:

- Periodical meetings or ad hoc.
- All meetings convened and chaired by the ✎ SPPR-5818 - Change Manager, who will select the summonable members to be convened based on the change requests to decide on. If a change request has potential implications on Safety, security, at least one summonable member of PRAMS team and security shall be convened.

#### Quorum rules to hold the meeting? Proposition:

- Quorum in meetings: 3 fixed members plus 60 % of convened summonable members.
- If quorum not reached, CCB meeting delayed 1 month approximately.

#### Decision rules:

- Decisions always taken in a CCB meeting.
- Decision always taken by consensus (members present in the CCB meeting).
- Absent members must confirm decisions via e-mail within 1 month. If not explicitly rejected, decisions will be tacitly accepted.
- If consensus not reached, issue will be escalated to the Core Group according to the SP Governance rules.

[SPPR-5697 ]

## 4 Appendix

### 4.1 Change request state transition

Overview state transition of a change request

In order to know the state transitions between the states of a change request and the relation to the process.

| Action                                              | Process task                                       | Initial status               | Possible next status                                                                                                                                                                                  |
|-----------------------------------------------------|----------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Add change request Item</b>                      | ✎ SPPR-4617 - Request change                       | Created                      | Perform action 01 - Start quality check<br>(Process task ✎ SPPR-5569 )<br>Perform action 02 - Mark as done / deleted / rejected                                                                       |
| <b>Perform action 01 - Start quality check</b>      | ✎ SPPR-5569 - Perform change request quality check | Perform quality check        | Perform action 10- Start initial review CCB<br>(Process task)<br>Perform action 20 - Accept for further analysis (Process task ✎ SPPR-4619)<br>Perform action 05 - Mark as done / deleted / rejected  |
| <b>Perform action 10 - Start initial review CCB</b> | ✎ SPPR-4618 - Perform initial CCB review           | Content to be reviewed (CCB) | Perform action 02 - Reopen (back to Process task ✎ SPPR-4617)<br>Perform action 20 - Accept for the further analysis (Process task ✎ SPPR-4619)<br>Perform action 07 - Mark approved (Process task 6) |

| Action                                                | Process task                                                                                   | Initial status                            | Possible next status                                                                                                                                                                                                                                                             |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                       |                                                                                                |                                           | Perform action 05 - Mark as done / deleted / rejected                                                                                                                                                                                                                            |
| Perform action 20 - Accept for the further analysis   | ➡ SPPR-4619 - Analyse change and consolidate solution                                          | In analysis                               | Perform action 11 - Start approval decision by CCB (Process task ➡ SPPR-4620 OR ➡ SPPR-10488)<br>Perform action 07 - Mark approved (Process task ➡ SPPR-4621)<br>Perform action 05 - Mark as done / deleted / rejected                                                           |
| Perform action 11 - Start change request decision     | ➡ SPPR-4620 - Get decision by CCB OR ➡ SPPR-10488 - Get decision by single domain+mirror group | Change request in decision                | Perform action 02 - Reopen (back to Process task ➡ SPPR-4617))<br>Perform action 21 - Reset due to insufficient Data (back to Process task ➡ SPPR-4619)<br>Perform action 07 - Mark approved (Process task ➡ SPPR-4621)<br>Perform action 05 - Mark as done / deleted / rejected |
| Perform action 07 - Mark approved                     | ➡ SPPR-4621 - Plan and implement change                                                        | Approved and ready for implementation     | Perform action 22 - Start verification (Process task ➡ SPPR-4622)                                                                                                                                                                                                                |
| Perform action 22 - Start verification                | ➡ SPPR-4622 - Verify change implementation                                                     | In verification                           | Perform action 02 - Reopen (back to Process task 1)<br>Perform action 21 - Reset due to insufficient Data (back to Process task ➡ SPPR-4621)<br>Perform action 05 - Mark as done / deleted / rejected (Process task 8)                                                           |
| Perform action 05 - Mark as done / deleted / rejected | Done / deleted / rejected                                                                      | Resolution: Done<br>Done / To be decided  | Perform action 02 - Reopen (back to Process task ➡ SPPR-4617)                                                                                                                                                                                                                    |
|                                                       |                                                                                                | Resolution: rejected<br>Deleted           | Perform action 02 - Reopen (back to Process task ➡ SPPR-4617)                                                                                                                                                                                                                    |
|                                                       |                                                                                                | Resolution: duplicate<br>Deleted          | Perform action 02 - Reopen (back to Process task ➡ SPPR-4617)                                                                                                                                                                                                                    |
|                                                       |                                                                                                | Resolution: unimportant sketch<br>Deleted | Perform action 02 - Reopen (back to Process task ➡ SPPR-4617)                                                                                                                                                                                                                    |

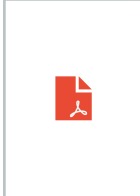
[SPPR-6146 ]



## 4.2 Standards and References

### Inputs for the System Pillar Change Control Management Process

- ERTMS Change Control Management Process, revision PRO\_CCM\_002 V 2.1 [https://www.era.europa.eu/system/files/2022-11/ertms\\_ccm\\_procedure\\_chapter2\\_en\\_0.pdf](https://www.era.europa.eu/system/files/2022-11/ertms_ccm_procedure_chapter2_en_0.pdf)
- EULYNX Change Control Management Process, revision 1G final for SC (2022-09-14)










[SPPR-5940 ]

Overview of comparison of the different inputs and Solution for System Pillar

| Topic                   | ERTMS                                                                                                                                            | EULYNX                                                                                                                                              | Solution for SP                                                                                                                                                                                                                                |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Recording tool          | ERA change control management tool                                                                                                               | JIRA                                                                                                                                                | Polarion                                                                                                                                                                                                                                       |
| Change classification   | tickets in ERA change control management tool                                                                                                    | several JIRA projects (EU*)                                                                                                                         | Change request per Polarion project linked to 1..n work items                                                                                                                                                                                  |
| Change types            | <ul style="list-style-type: none"> <li>• error</li> <li>• enhancements</li> </ul>                                                                | <ul style="list-style-type: none"> <li>• clarification</li> <li>• error</li> <li>• new function</li> <li>• editorial</li> <li>• decision</li> </ul> | <p><b>!</b> <u>SPPR-5733 - Change request has a correct change type</u></p> <ul style="list-style-type: none"> <li>• error</li> <li>• editorial</li> <li>• enhancements - clarification</li> <li>• enhancements - new functionality</li> </ul> |
| Change request planning | The Control Group will define the aggregation of different change requests in packages, proposed for specific baseline release and or deadlines. | <p>by grouping change requests to individual iterations</p> <p>unclear how individual iterations are defined</p>                                    | by setting target date and target release                                                                                                                                                                                                      |

| Topic                          | ERTMS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EULYNX                                                                                                                                                                                                                                     | Solution for SP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Change request information     | <ul style="list-style-type: none"> <li>• Reference baseline releases(s) for related documents</li> <li>• Documents and/or References</li> <li>• Error/Enhancement</li> <li>• Project name and starting time</li> <li>• Operational scope</li> <li>• Problem/need description</li> <li>• Consequences of the addressed problem</li> <li>• Application scope</li> <li>• Supporting documents for problem/need description</li> <li>• Solution proposal by submitter</li> <li>• Supporting documents for solution proposal</li> <li>• Preliminary assessment of the benefits</li> <li>• Supporting documents for preliminary assessment of the benefits</li> <li>• Submitting Recognised Organisation</li> <li>• Endorsed by</li> <li>• Contact person Name and Email address</li> <li>• Submitter Reference Number:</li> </ul> | <ul style="list-style-type: none"> <li>• Issue ID</li> <li>• Summary</li> <li>• Priority (low, medium, high)</li> <li>• Description (current state, problem, intended state, impact)</li> <li>• Comments</li> <li>• Attachments</li> </ul> | <ul style="list-style-type: none"> <li>• ID</li> <li>• Summary</li> <li>• Type of Change</li> <li>• Description (problem statement, solution proposal by requester, alternative solutions, consolidated solution proposal, link to affected workitems (e.g. subsystem), analysis)</li> <li>• CCB data (decision needed, decision due, date decision rationale, Analysis due date, safety related)</li> <li>• Dependencies</li> <li>• Target date, target release</li> <li>• Comments</li> </ul> |
| Change request database access | ERA change control management tool                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | via web access using user access rights                                                                                                                                                                                                    | via web access using user access rights (Polarion)<br>- <a href="#">External requester</a>                                                                                                                                                                                                                                                                                                                                                                                                      |
| Baselines                      | Definitions for <ul style="list-style-type: none"> <li>• Baseline</li> <li>• Baseline Release (first draft, consolidation, first</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>• baseline number schema</li> <li>• Baseline categories (minor, major,</li> </ul>                                                                                                                   | Baseline are not part of this change control management process they will be part of configuration management.                                                                                                                                                                                                                                                                                                                                                                                  |

| Topic                     | ERTMS                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | EULYNX                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Solution for SP                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | <p>legal, maintenance)</p> <p>change control management as set of activities to move from one baseline to another one.</p>                                                                                                                                                                                                                                                                                                                                                        | <p>editorial, applicability)</p> <ul style="list-style-type: none"> <li>• cluster project baseline</li> <li>• EULYNX Baseline Set</li> <li>• Start of formal change process</li> </ul> <p>two step approach by project (cluster) and overall baseline</p>                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                    |
| Roles                     | <p>Board:</p> <p>high level decisions by endorsement of change request packages support consensus between organisations for change request's Control Group:</p> <p>plan change request packages</p> <p>Core Team:</p> <p>receives, filters change requests</p> <p>Technical working groups:</p> <p>work on change request's</p> <p>Standardisation Bodies</p> <p>no direct role in change control management process</p> <p>coordinate with control group about new standards</p> | <ul style="list-style-type: none"> <li>• Project partner</li> <li>• Cluster Leader</li> <li>• reference architecture cluster (decision body)</li> <li>• change control board (decision body)</li> <li>• CCB process manager</li> <li>• Consortium Management Committee</li> </ul> <p>two step approach. First CCB process manager decides about completeness (alone?). Second reference architecture cluster or CCB decides about approval. CCB members not defined explicitly</p> | <p> <a href="#">SPPR-5821 - Change control management roles</a></p>                                                                                                                                                                                                           |
| change request submission | <ul style="list-style-type: none"> <li>• by representative bodies,</li> <li>• network of NSA's</li> <li>• member states</li> <li>• European Commission</li> <li>• Agency</li> </ul>                                                                                                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>• by project partner</li> <li>• ticket in JIRA (process manager or cluster leader)</li> </ul>                                                                                                                                                                                                                                                                                                                                               | <p> <a href="#">SPPR-5817 - Change Requester</a></p>                                                                                                                                                                                                                          |
| change request analysis   | <ul style="list-style-type: none"> <li>• review of completeness and consistency</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>• verification for completeness</li> <li>• schedule change request for iteration</li> </ul>                                                                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>•  <a href="#">SPPR-5569 - Perform change request quality check</a></li> <li>•  <a href="#">SPPR-4618 - Perform initial CCB review</a></li> </ul> |

| Topic                                       | ERTMS                                                                                                                                                                                                                                                                                                                                                                                                                                            | EULYNX                                                                                                                                                                                                                                                                                                                                                                                                                                    | Solution for SP                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                             | <ul style="list-style-type: none"> <li>priorisation by               <ul style="list-style-type: none"> <li>safety related</li> <li>interoperability and non-safety related</li> <li>performance impact, non-interoperability and non-safety related</li> <li>Others.</li> </ul> </li> </ul>                                                                                                                                                     | completeness and schedule handled by CCB process manager.                                                                                                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li> <a href="#">SPPR-4619 - Analyse change and consolidate solution</a></li> </ul>                                                                                                                                                                                                                                                                               |
| change request decision                     | <p>Board:</p> <ul style="list-style-type: none"> <li>high level decisions by endorsement of change request packages</li> <li>support consensus between organisations for change request's</li> </ul> <p>Control group:</p> <ul style="list-style-type: none"> <li>decide on change request packages, not single change requests</li> </ul> <p>Core Team:</p> <ul style="list-style-type: none"> <li>receives, filters change requests</li> </ul> | <ul style="list-style-type: none"> <li>Reference Architecture Cluster for architectural decisions and issues</li> <li>Change control board for functional change request decisions and review of deliverables</li> <li>cluster specific and non-functional changes are accepted automatically.</li> </ul> <p>two decision bodies depending on issue type/project. Side path for cluster specific and non-functional changes available</p> | <ul style="list-style-type: none"> <li>Change Control Board</li> <li> <a href="#">SPPR-4620 - Get decision by CCB</a></li> <li>Small changes affecting e.g. only one Subsystem may not be handled by the Change Control Board</li> <li> <a href="#">SPPR-4603 - Change Management Process Flow</a></li> </ul> |
| Impact to other cluster/ domain/ subsystems | by linking to other change request                                                                                                                                                                                                                                                                                                                                                                                                               | <p>by open new linked change requests</p> <p>multiple linked change requests</p>                                                                                                                                                                                                                                                                                                                                                          | by adding tasks below the change request                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| implement changes                           | by working group in documents                                                                                                                                                                                                                                                                                                                                                                                                                    | in PTC (model) and DOORS (requirements)                                                                                                                                                                                                                                                                                                                                                                                                   | in model (e.g. capella) + Polarion                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| verify change                               | not available                                                                                                                                                                                                                                                                                                                                                                                                                                    | quality review<br>modelling compliance<br>assurance compliance                                                                                                                                                                                                                                                                                                                                                                            | quality review<br>+ additional verification methods if                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Topic                                 | ERTMS                                                                                                                                                             | EULYNX                                                                                                                                                                                                                        | Solution for SP                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       |                                                                                                                                                                   | cluster review & approval<br>cluster baseline<br>publish EULYNX baseline<br>set if applicable                                                                                                                                 | needed to be selected by<br>responsible                                                                                                                                                                                                                                                                                                                          |
| usage of<br>change<br>informati<br>on | not available                                                                                                                                                     | revision log (manually<br>created)                                                                                                                                                                                            | revision log (automated Polarion)<br>release note                                                                                                                                                                                                                                                                                                                |
| Workflow<br>states                    | submitted<br>valid<br>assigned<br>waiting for econic<br>evaluation<br>analysis completed<br>packaged<br>presented to the EC<br>supereded<br>rejected<br>Postponed | <ul style="list-style-type: none"> <li>• Open</li> <li>• RA Decision</li> <li>• CCB Decision</li> <li>• In Development</li> <li>• Quality Review</li> <li>• Cluster Review</li> <li>• Finished</li> <li>• Rejected</li> </ul> | <ul style="list-style-type: none"> <li>• Created</li> <li>• Performing quality check</li> <li>• Content to be reviewed (CCB)</li> <li>• In Analysis</li> <li>• In Approval by CCB</li> <li>• Approved and Ready for Implementation</li> <li>• In Verification</li> <li>• Finished/done</li> <li>• Rejected</li> <li>• Postponed (Reopened to Created)</li> </ul> |

[SPPR-5826 ]