SOVELIA

User Guide
Engineering Change process

SYMETRI
ADDNODE GROUP

Contents

1 Introduction

This section describes SOVELIA Engineering Change Management features.

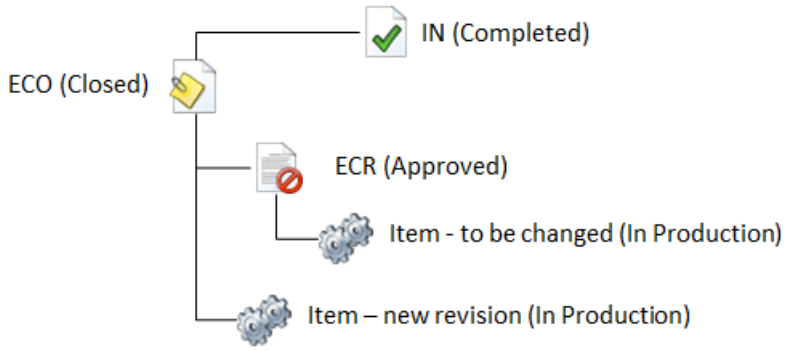
2 Principles

2.1 General

All changes to engineering data (items, drawings and product documents) are managed by the engineering change process. The main object used in engineering change process is the 'Engineering Change Order' (ECO), which carries the information about the change; reason, description, affected items and documentation and responsibilities. An important role of ECO is to inform necessary parties about the change and involve them in the process in order to make preparations for change implementation.

The ECO process can be supported by the 'Engineering Change Request' (ECR), which is optional in SOVELIA. The ECR is considered as an input for change that will cause new ECO. The implementation note (IN) is a summary of the actions and implementation based on the eco. Implementation notes consist of information about the effects of the ECO, such as cost, date and description.

Below is a simplified object model of a change that has been carried out (ECR in use). All the information is linked to the ECO. The ECR is a child of the ECO and in this case a revision change has been requested so the original revision is a child of the ECR. The designer has created a new revision of the item and linked that to the ECO. Implementation note has been completed as a summary of the change process.



Objects linked to the ECR and ECO could also be drawings or various documents. But if they are children of the changed item it is not necessary to link them to the ECO. The system will show all the relations (not shown in the picture) and comparison reports can be run on the data.

2.2 Lifecycles and rules

The states for ECR are:

CRE – Created	ECR created in SOVELIA. Information visible only for ECR creator.
SUB – Submitted	ECR information completed by creator and information visible for review group.
APP – Approved	ECR approved and will be implemented by ECO. Information visible for Engineering and Production.

REJ – Rejected	ECR rejected after review. ECR object is archived in SOVELIA and visible for Engineering.

The states for ECO are:

CRE – Created	ECO created in SOVELIA. ECR linked if exists.
ASSG – Assigned	ECO assigned to a responsible person in Engineering and actual design work starts. Information visible only for Engineering.
COMP – Completed	ECO and design work completed and notification sent for Production preparation team. ECO visible also to Production preparation.
REL – Released	All product information ready for production and notification sent for teams impacted by the change, like Production, Purchasing, Sales, After Sales, Documentation and Suppliers. Information visible for teams above.

The states for IN are:

DRF– Draft	IN created in Sovelia. IN is waiting for assignment.
ASSG – Assigned	IN assigned to an organization or a responsible person. Appropriate information is added considering the implementation.
COMP – Completed	IN information and the engineering change process are completed.
NA – Not applicable	IN not valid for assigned parties.

ECO lifecycle rules:

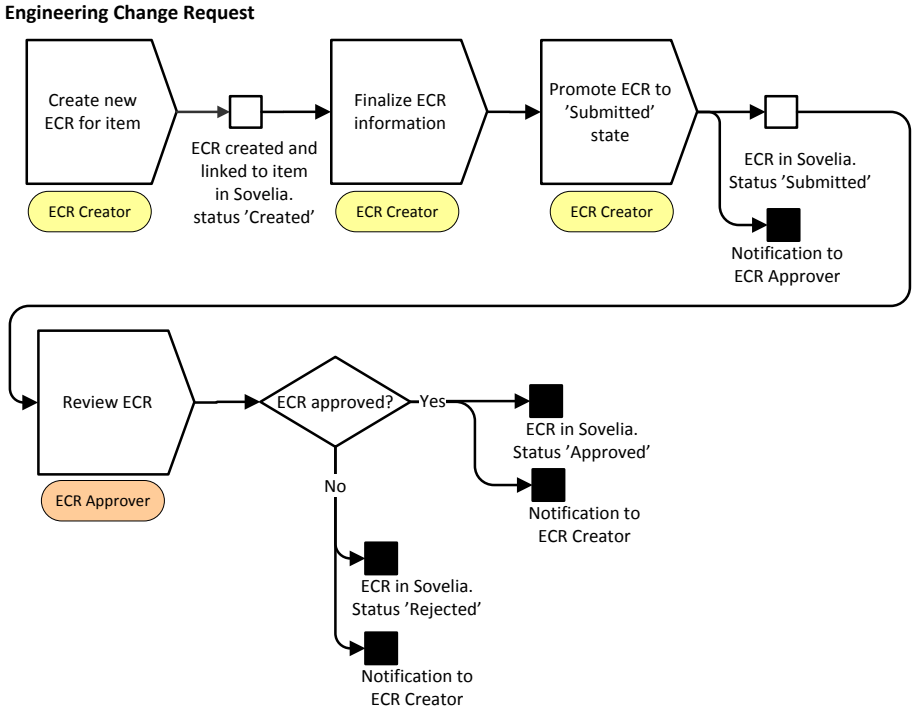
Lifecycle rules are setup for ECOs. When you change a status of an ECO the system checks that the status of related objects follows the defined rules. You will receive messages when you break these rules.

ECO	ECR				Item /product document					
	CRE	SUB	APP	REJ	CRE	IND	DNR	INP	INA	OBS
CRE	✗	✗	✓	✗	✓	✓	✓	✓	✗	✗
ASSG	✗	✗	✓	✗	✓	✓	✓	✓	✗	✗
COMP	✗	✗	✓	✗	✗	✗	✓	✓	✗	✗
REL	✗	✗	✓	✗	✗	✗	✗	✓	✗	✗
CLS	✗	✗	✓	✗	✗	✗	✗	✓	✗	✗

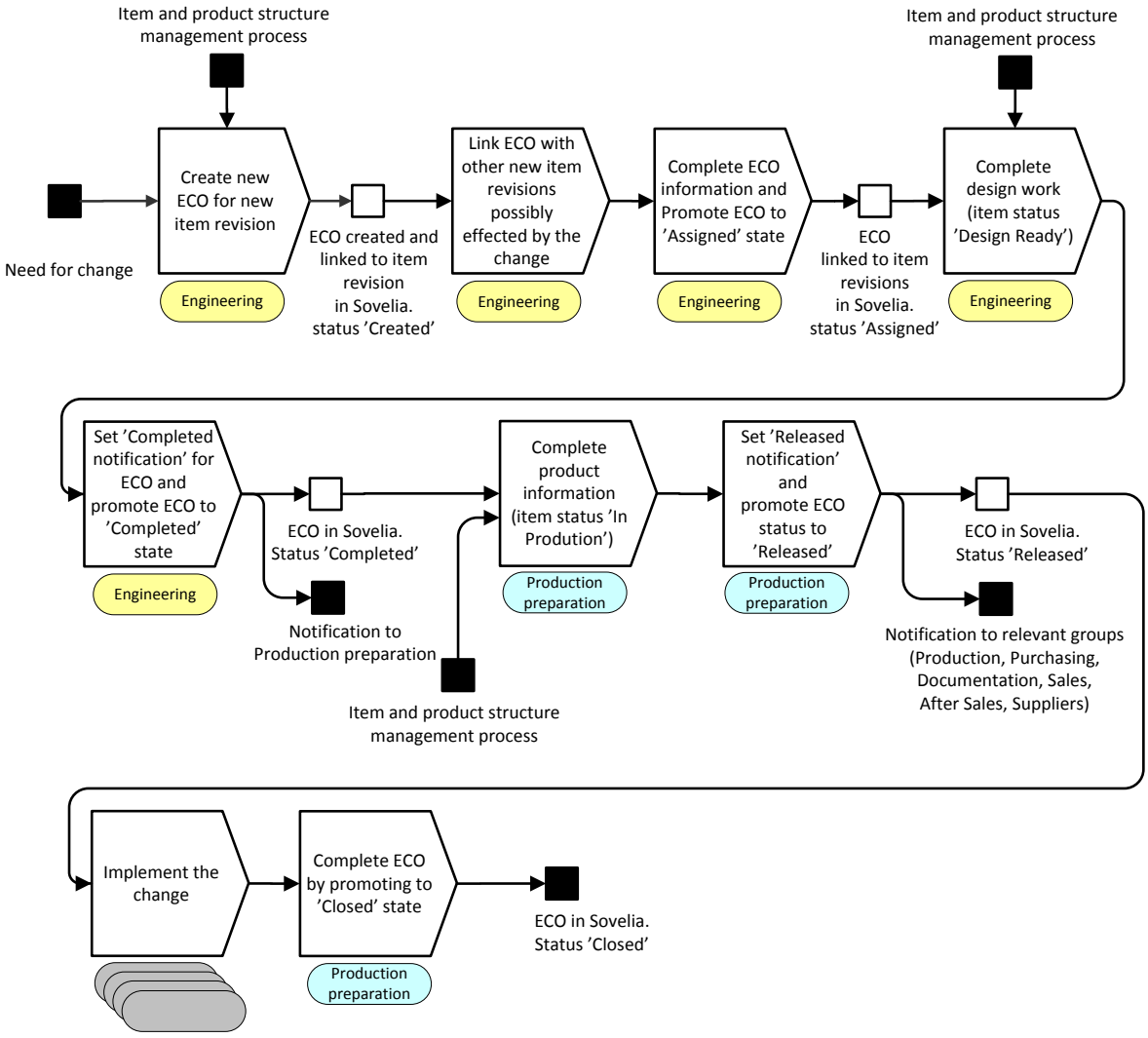
Table: Lifecycle rules when promoting an ECO.

2.3 Processes and responsibilities

The following flowcharts describe the basic processes for ECR and ECO and involvement of needed roles until the engineering change is implemented.



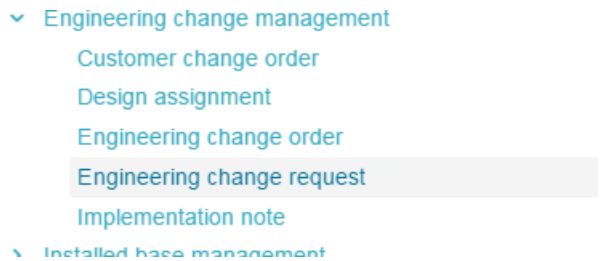
Engineering Change Order



2.4 ECR data

ECR data is defined in object information window.

- Object type



- Mandatory information on object info window are marked with *:
  - ID — ECR number, generated automatically based on predefined series.
  - Revision — ECR revision, generated automatically based on predefined series.
  - Name — Dictionary name, automatic.
  - Change description — Defines the possible solution for the change.
  - Reason for the change — Gives explanation why the change is needed.

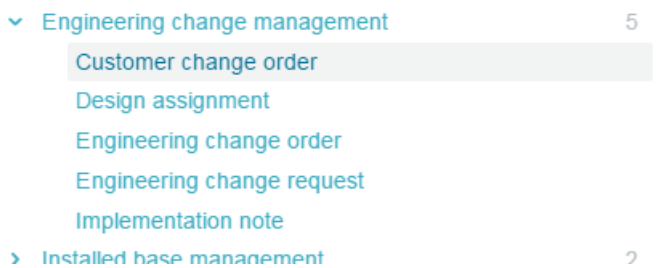
- Additional attributes:
  - Description — Description of ECR.
  - Changed by — Displays modifier.
  - Author

- Uneditable attributes are hidden by default while creating a new ECR.

2.5 ECO data

ECO data is defined in object information window.

- Object type



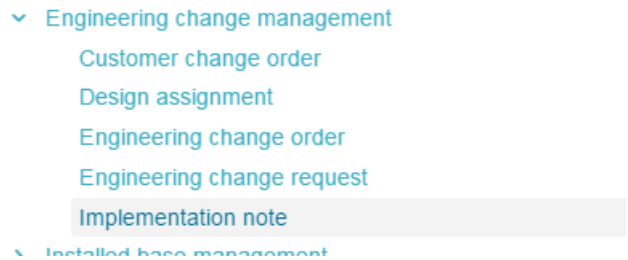
- Mandatory information on object info window are marked with *:
  - ID — ECO number, generated automatically based on predefined series.
  - Revision — ECO revision, generated automatically based on predefined series.
  - Name — Dictionary name, automatic.
  - Change description — Defines the possible solution for the change.
  - Reason for the change — Gives explanation why the change is needed.
  - Justification of change — Defines the change category for reporting purposes.

- Additional attributes:
  - Description — Description of ECO.
  - Changed by — Displays modifier.
  - ECO assigned to — Defines who is responsible of executing the design work.
  - ECO released notif. — Select to whom the notification is sent.
  - Author
  - ECO completed notif. — Select to whom the notification is sent.

2.6 IN data

Implementation note data is defined in object information window.

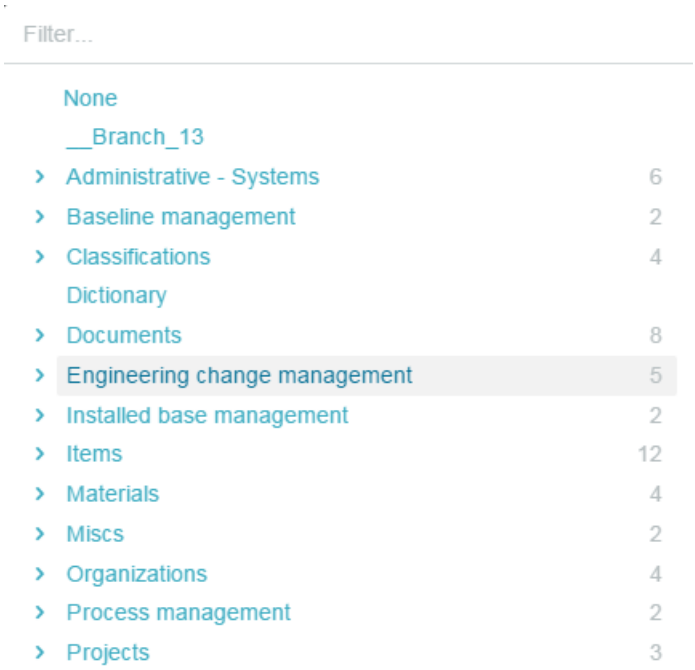
- Object type



- Mandatory information on object info window are marked with *:
  - ID — IN number, generated automatically based on predefined series.
  - Revision — IN revision, generated automatically based on predefined series.
  - Name — Dictionary name, automatic.

- Additional data:
  - Description — IN description.
  - Changed by — Displays modifier.
  - Author
  - Implementation organization — Organization which implemented the change.
  - Implementation cost (EUR) — Cost of the implementations made.
  - Implementation date — Date on which the implementations were made.
  - Implementation remarks — Additional notions and comments considering the implementations.

3 Functions



3.1 Creating ECR, ECO and IN

New ECR, ECO and IN are created by a semi-automated function by selecting the object that is reason for the change (ECR) or affected by the change (ECO).

Related actions

New –menu

New ECR for this item	Opens a new object card window with some predefined selections. You need to complete the 'Change description' and 'Reason for change' before creating ECR.
New ECO for this item	Opens new object card window with some predefined selections. You need to complete the 'Change description', 'Reason for change' and 'Justification for change' before creating ECO.
New IN for this item	Opens new object card window with some predefined selections. Additional information may be added considering the implementation.

3.2 *Editing ECR, ECO and IN information*

You need to complete the ECR information before submitting the ECR, ECO and IN information and before setting the status to Completed.

In object information window:

Edit ***-menu***

Opens editing window where you can modify the ECR , ECO or IN data.

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3.3 *Approving ECR, ECO and IN*

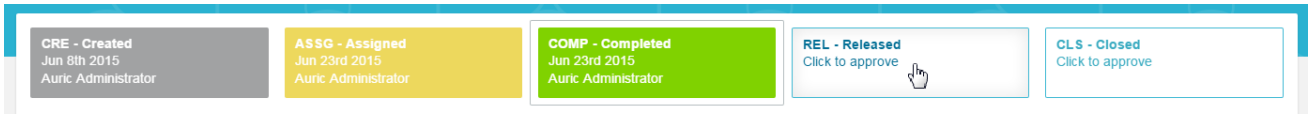
Approval from lifecycle state to another is done by the responsible role described in flow charts in chapter 'Processes and responsibilities'.

Related actions

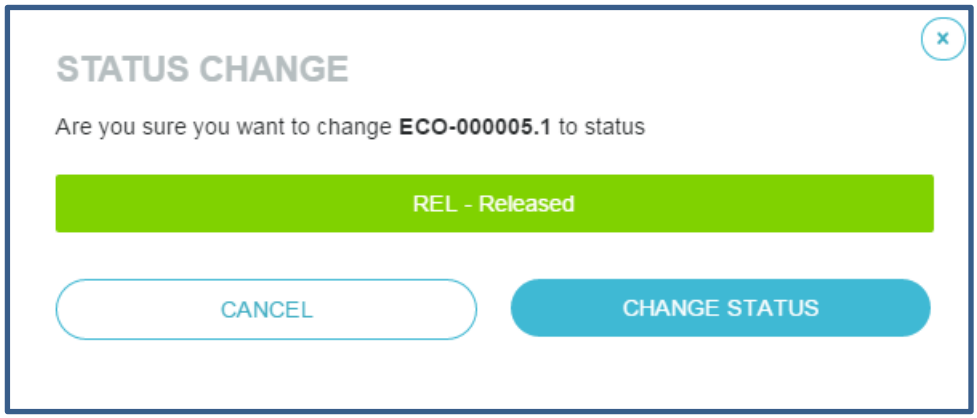
Approve ***-menu***

Opens the status selection window. The next state is preselected. Confirm the promote operation by clicking the 'Change status' button.

You can also click the status bars under the thumbnail in object info window to change object status:



Confirmation window opens:



Demoting

Demoting an object can be done by choosing a lower status bar in the object information window.

The demote operation is allowed in exceptional cases and is not needed in daily use.