



Process-Driven PLM implementation

CASE: Polarstern 2



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Outfitting



Interior
Outfitting

PLM Implementation

CASE: Polarstern 2



Challenges before PLM

- Fragmented and incompatible software landscape → Lacking data traceability, continuity and quality
- Frequent reliance on the customers' tools, creating difficulties in sustaining Elomatic's internal processes.

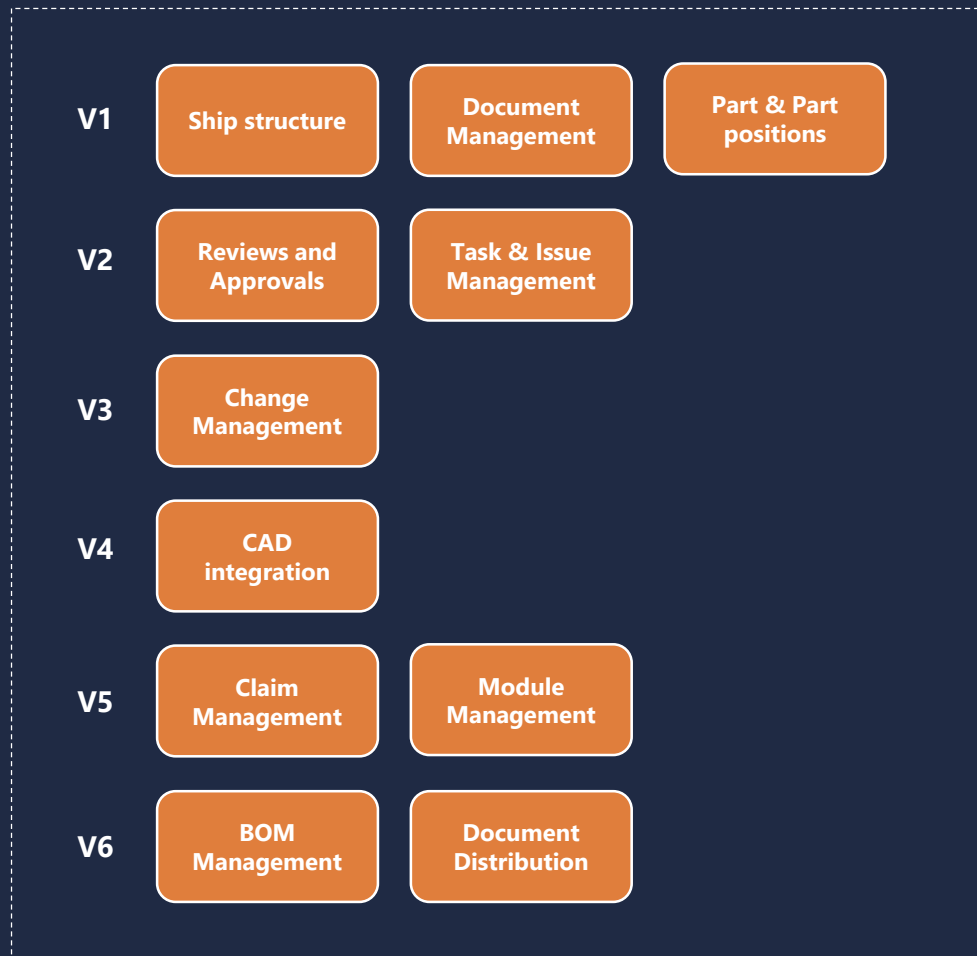


Cadmatic Wave PLM as a solution

- Largest design project in Elomatic history:
 - Basic Design, Detail Design, Procurement Support, Field Engineering
- Robust data management is a must!
- One consolidated database for all engineering data
 - Optimized for Elomatic processes improving design efficiency
 - Enabling digital thread

PLM Requirements

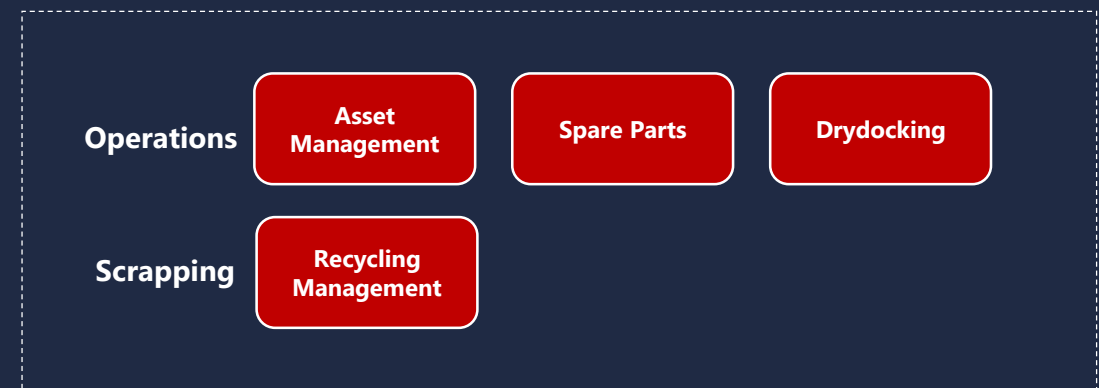
Polarstern 2 scope



Add features and extend to production

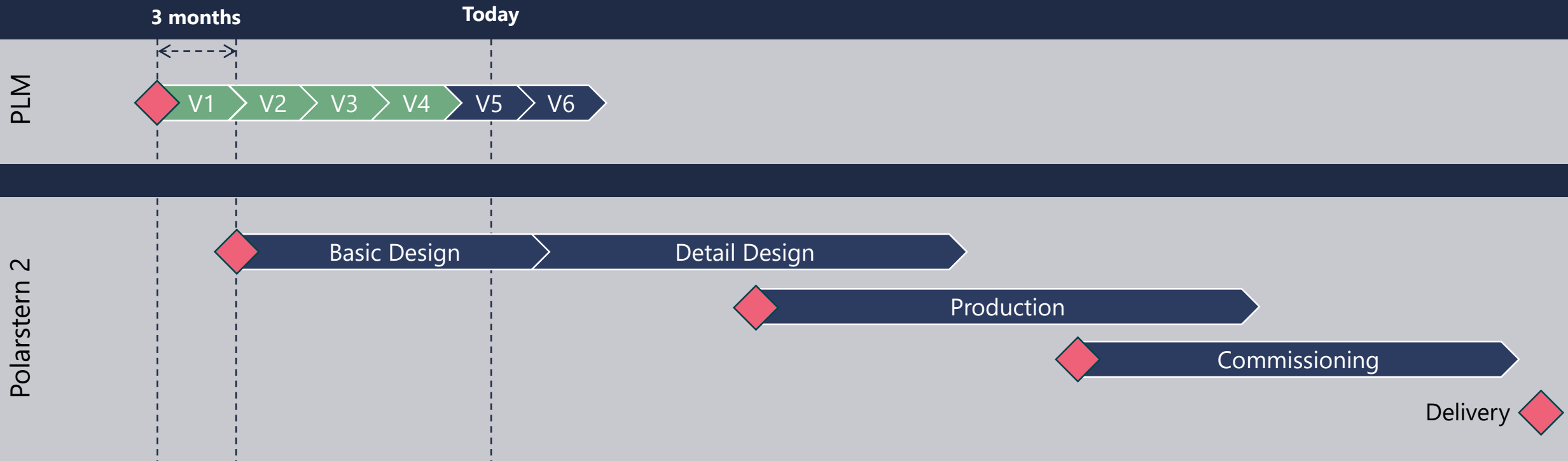


Enable data migration and feedback loop



Implementation Timeline

- The PLM implementation timeline was established based on the requirements of the design project. Although the schedule was highly accelerated, we were confident in our capabilities.
- Thanks to prior experience and thorough preparation, the team successfully delivered the initial production version on schedule.



Implementation preparations

Elomatic Wismar Team had done thorough preparations for the PLM implementation project:

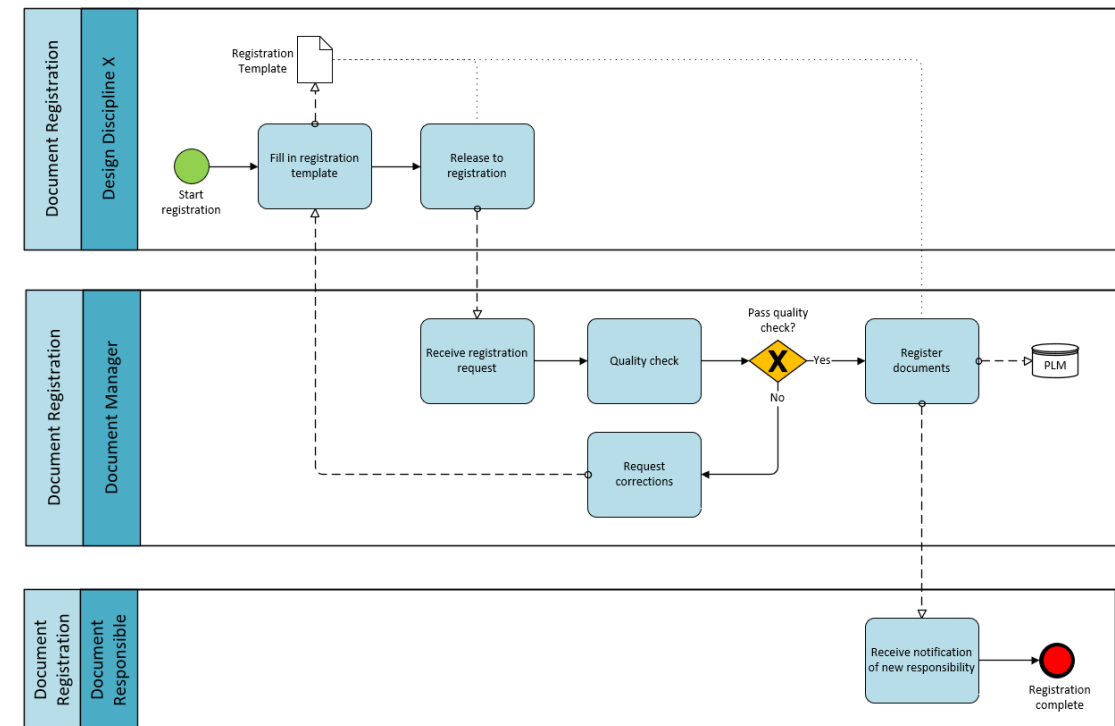
- Process maps
- User Stories
- Attributes
- Roles and permissions
- Relations
- Lifecycles & workflows



Implementation preparations

Processes

- The driving factor of implementation
- All the implementation requirements are derivatives of processes
- ~30 process maps prepared, currently over 40



Implementation preparations

User Stories

- User Stories describe software feature from the perspective of the user
- ~150 User Stories prepared, currently over 300

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As a Document Manager, I want to pre-register document object for System Responsible Engineer so that he/she can start working with the document by uploading document files into the document object.

Acceptance Criteria:

- The registration is only possible by filling in the mandatory attributes.
- The system will give unique ID for the document based on the selected attributes.



Implementation preparations

Attributes

- Attributes for each PLM class (e.g. Document, Part or Issue)
- Well defined attributes ensure good data quality

Basic Design Document		
Attribute Name	Mandatory Field	Attribute Type
ID	✓	String
Description	✓	String
Category	✓	List
SFI Code	✓	List
Responsible	✓	User
Due Date	✓	Date
Forecast Date		Date
...		

Category
Contract Legal
Contract Commercial
Planning
Procurement
Technical
Vendor data
Planning
...



Implementation preparations

User Roles

- PLM roles (user groups), their accesses, and permissions
- Well defined RBAC bring security and improve data quality
- Subcontractors and Customer must be taken into account as well

Basic Design Document				
Role	Create	Read	Update	Delete
PLM Admin	✓	✓	✓	✓
Document Manager	✓	✓	✓	✓
Engineer		✓	✓	
PMO		✓		

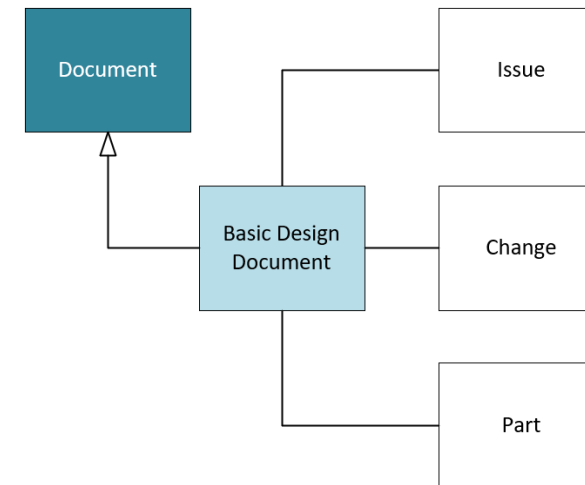
Role	Allowed Document Types
PLM Admin	All
Document Manager	All
Engineer	No Contract Commercial
PMO	All



Implementation preparations

Inheritances & Relationships

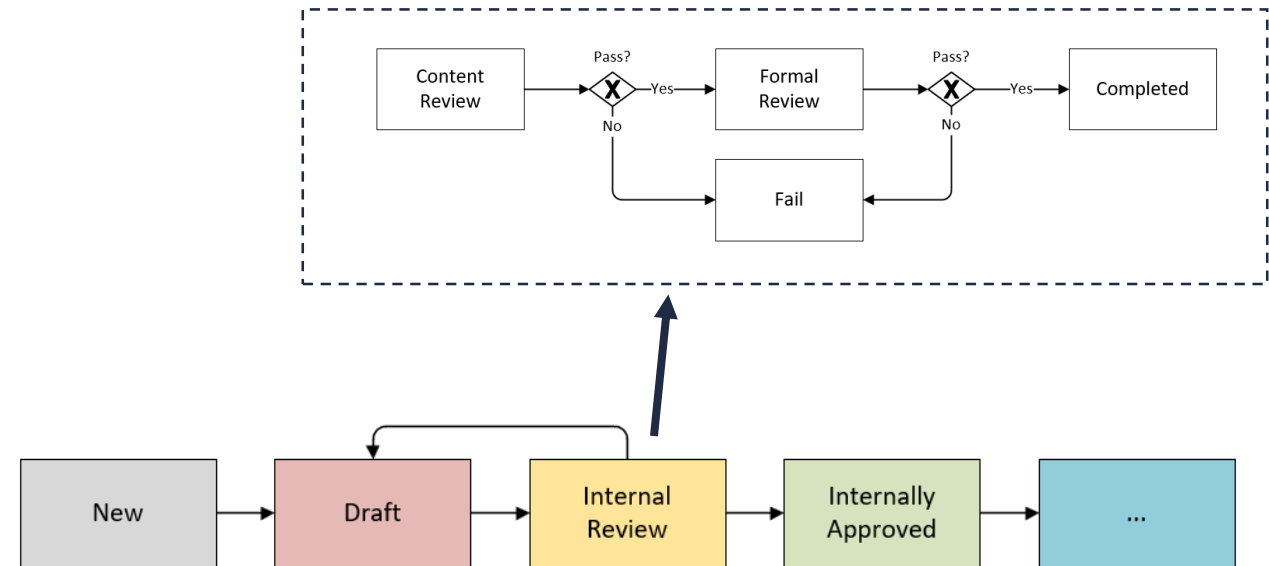
- PLM class inheritances (classes and child classes)
- Relationships between PLM classes
- Relationships improve design efficiency



Implementation preparations

Lifecycle states

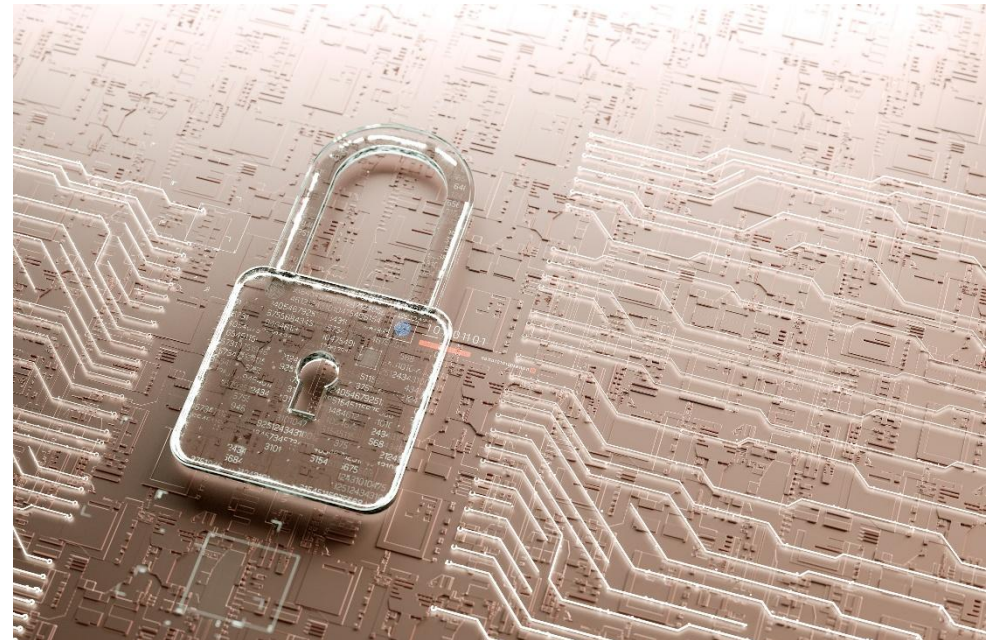
- PLM class lifecycle states
- State changes can trigger a workflow
- State changes can be a result of a workflow



Outcome

PLM Data Model

- The data model represents product information in an object-oriented and structured way:
 - Product structure
 - Hierarchies, relationships
 - Attributes
 - Lifecycles & Workflows
 - Version management
etc.



Factors of successful implementation

- ✓ Deep understanding of business processes and business data
- ✓ Be precise with your processes, but stay agile
- ✓ Don't forget human factor, organisational change management is crucial



