

Research Lecture #48

Bi-Weekly
Fridays at 1 pm

SEUS – Smart European
Shipbuilding
Document Management

Elisabeth Brandenburg
Lorenz Baumgarten



Inspire great minds to shape a sustainable future

Shipbuilding Projects

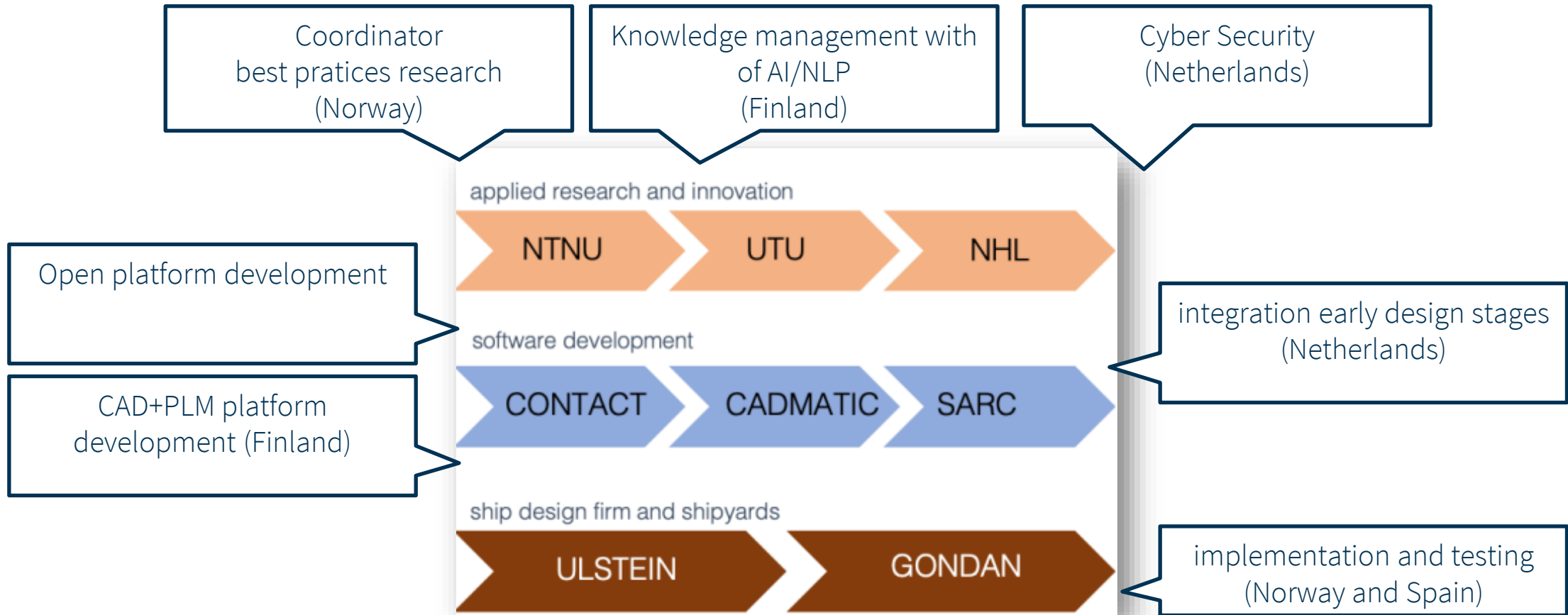


EU resrach project SEUS

create a “framework” for European shipyards
architecting and developing an **integrated platform** for a combined
solution incorporating CAE, CAD, CAM, and PDM software
and testing it at shipyards



SEUS: Participants and Roles



Partnership CADMATIC

lead: Nam Nguyen



Hull and Structural Design



Outfitting and Piping Design



Electrical & Automation



Information Management

- Goal: integrated CAD + PLM solution for shipbuilding

=> CADMATIC WAVE



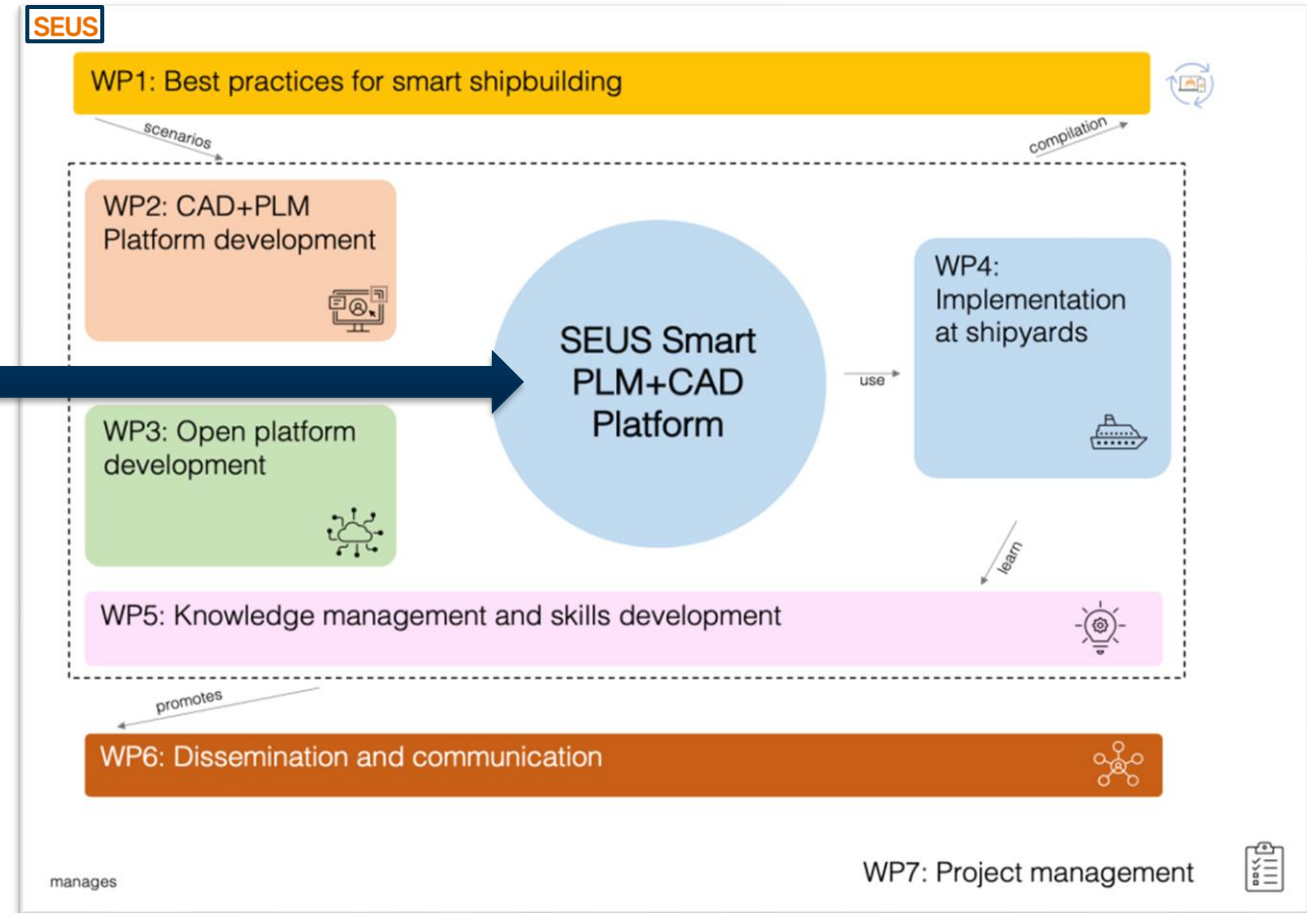
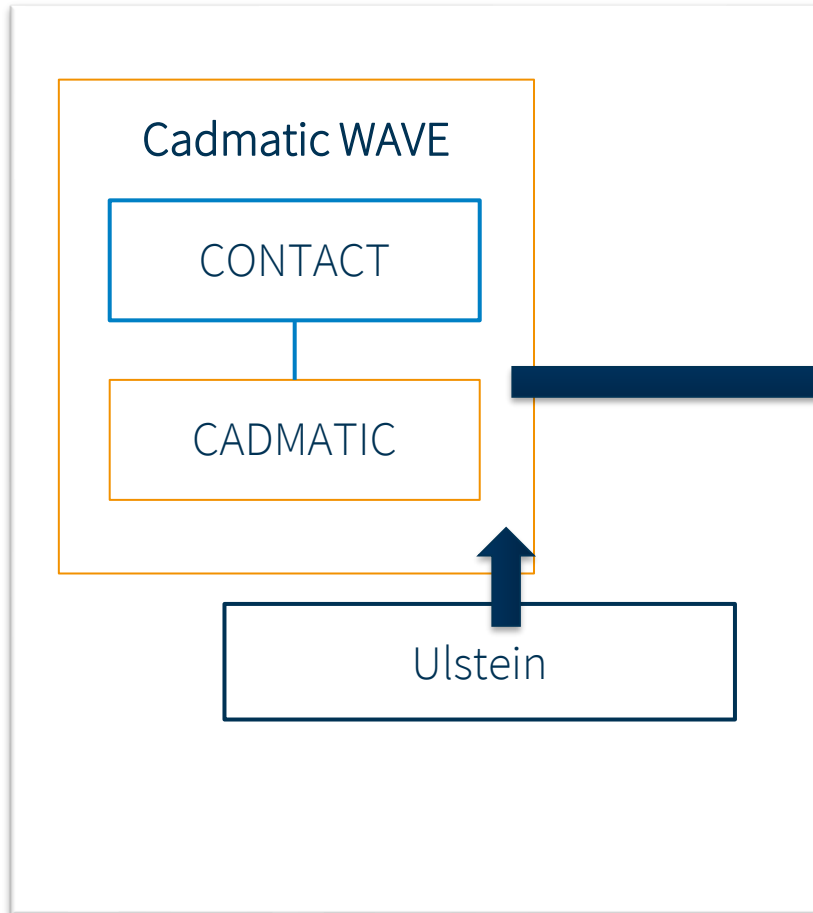
Ulstein customer project

lead: Markus Feldmann

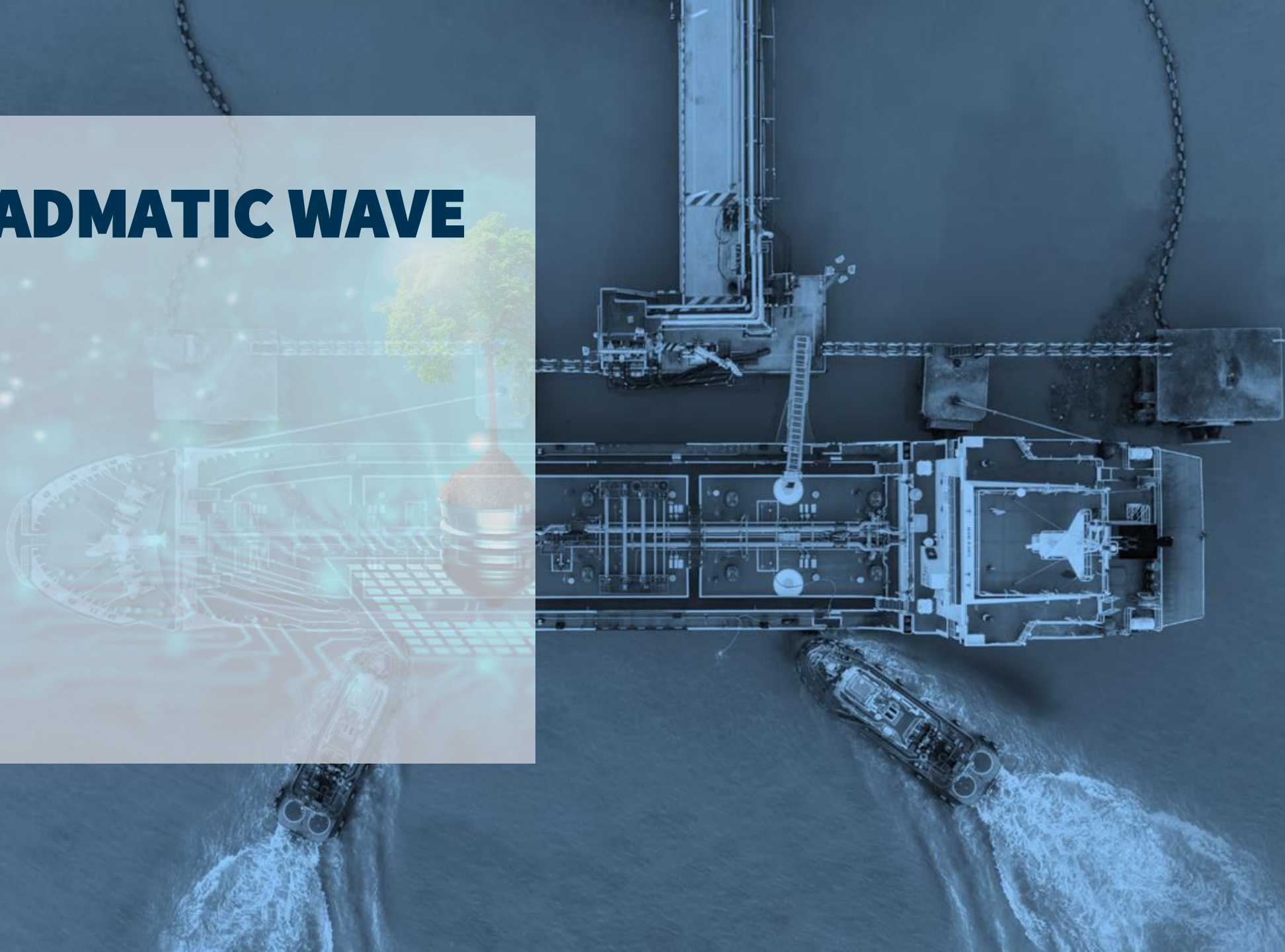
- PLM Strategy
- Project Management
- Document Management
- ERP-Integration
- Go-Live in November



SEUS deliverable



CADMATIC WAVE



WAVE PRODUCT

- Technology behind the CADMATIC Wave is using existing modules from our partner CONTACT Software
- Examples of out of the box functionality with CONTACT modules:
 - Document management
 - Project management
 - Workflows
 - Collaboration
- WAVE development focuses on:
 - CAD integrations
 - PLM usability and use cases in shipbuilding
 - Making the standard configuration for shipbuilders
 - Enabling shipbuilders a quick start with PLM

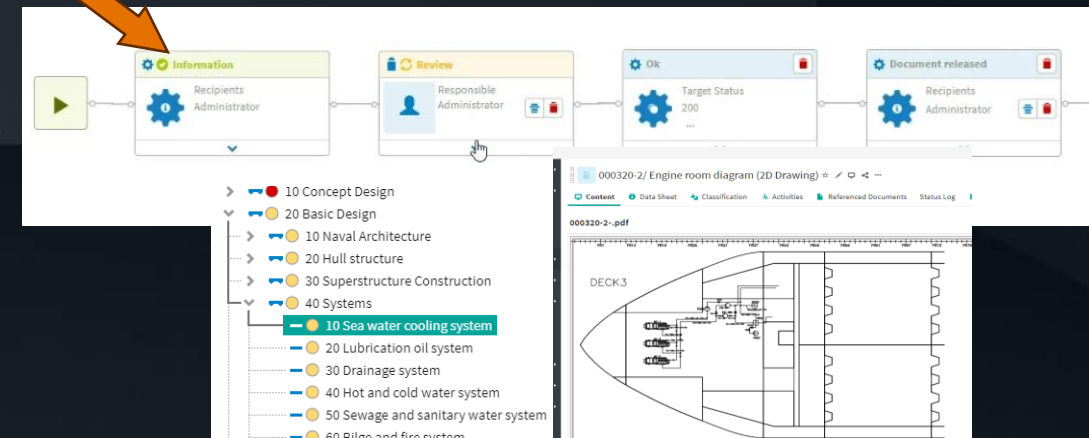
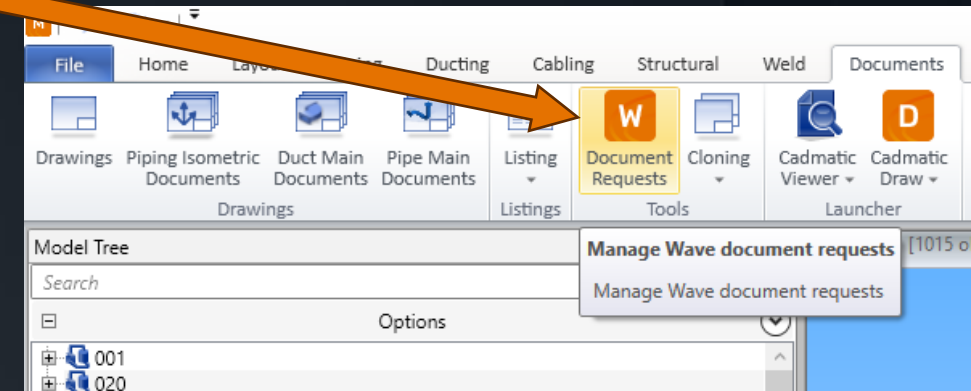
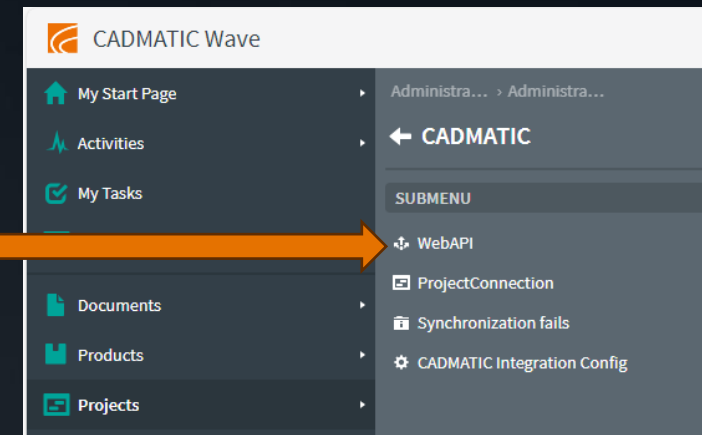
















Wave first release

- Integration classes and configuration objects created to connect Wave with COS (CADMATIC object storage)
- CADMATIC Document integration with document reply and request functionality
 - CADMATIC Outfitting documents
 - CADMATIC P&ID documents
- Ready to use shipbuilding specific workflows
- CADMATIC Integrated document management
- CADMATIC Integrated project management

After first release

- Document requests from Hull and Electrical
- Embedding eShare as file viewer
- Integrating eShare markups with Open Issues objects in Wave
- Product/Part integration
- Embedding eShare as product structure viewer



-  My Start Page
 -  Activities
 -  My Tasks
 -  Task Boards
 -  Documents
 -  Products
 -  Projects
 -  Defects
 -  Actions
 -  Specifications
 -  Workflows
 -  Organizations
 -  Administration & Configuration
 -  License Dashboard
- Close Menu

My Start Page

 My Dashboard  + New Dashboard

P000226 Nordic Tanker



P000226 Nordic Tanker

My Tasks - My review tasks






 Enter Filter Text ...  

Drag column headers here to group

Un...	Type	Name	Status	Deadline	Tags
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Documents Last Worked on

Today

-  000000-25 / Engine room layout (-)
-  000000-23 / b Lubrication oil diagram (unknown)
-  000000-23 / a Lubrication oil diagram (unknown)
-  000000-24 / Sea water cooling system arrangement dra...
-  000000-23 / Lubrication oil diagram (unknown)

Yesterday

-  000000-21 / Fresh water cooling system drawing (-)
-  000000-22 / Engine room arrangement (-)
-  000000-13 / Arrangement Deck 4 (-)
-  000000-20 / Area 20 (-)
-  000000-19 / Area 19 (-)

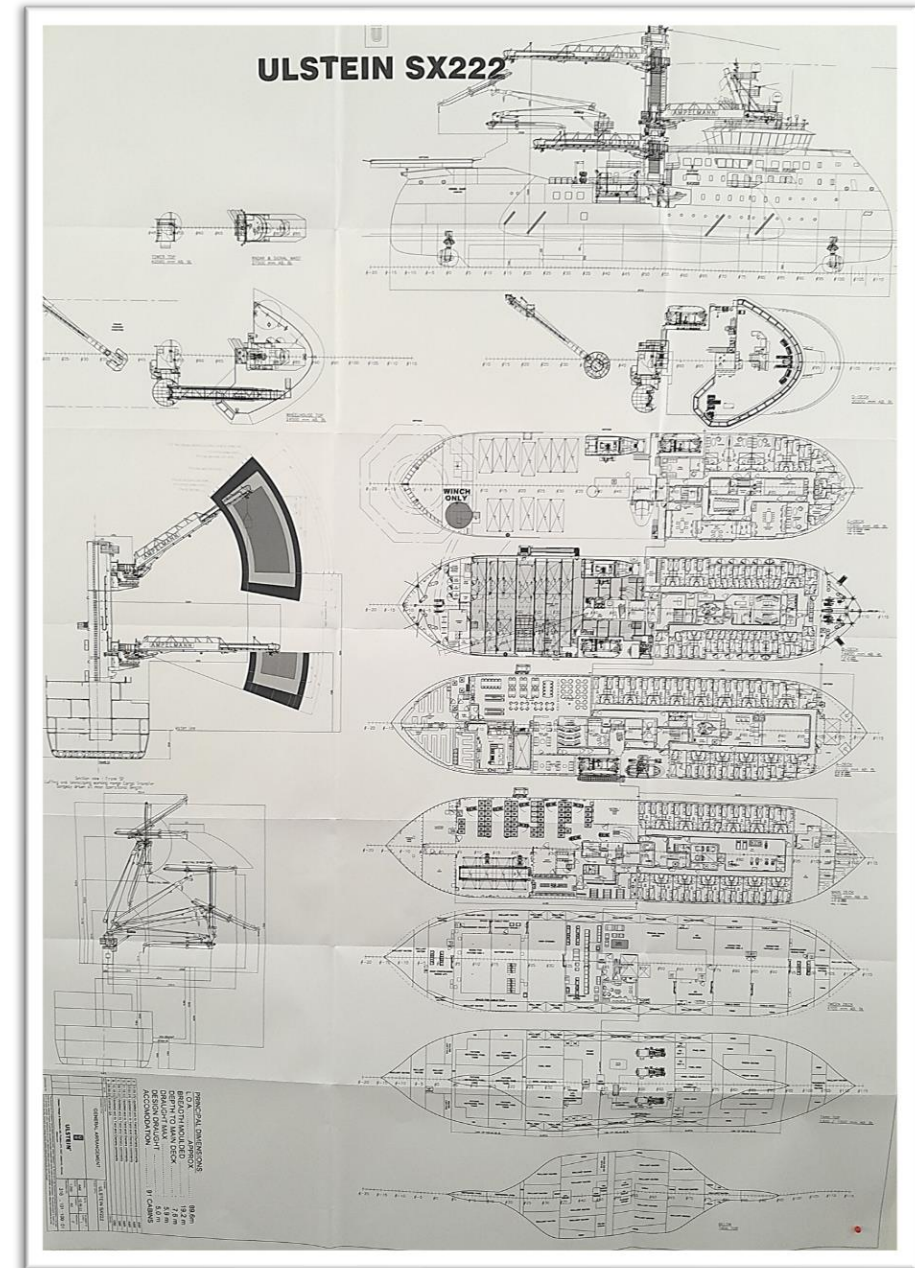
Shipbuilding Characteristics and Challenges



Shipbuilding Characteristics

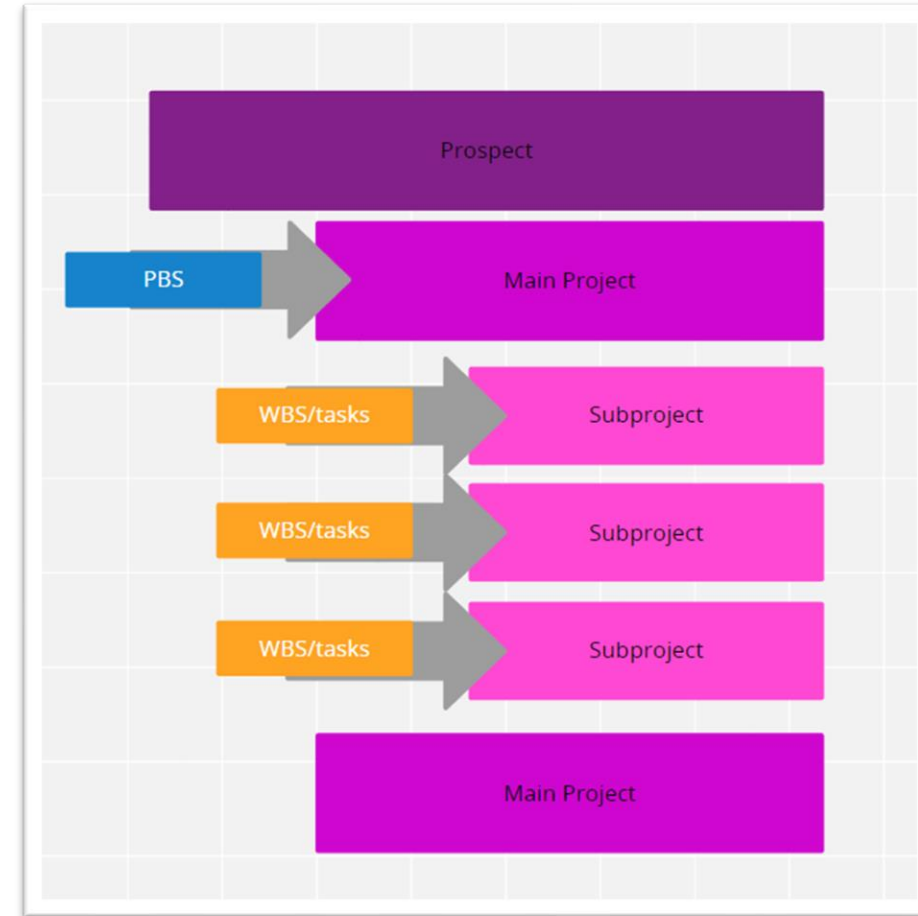
- Document based working
 - 28,700 documents for the design phase only
 - Multiple files per document
 - Up to 45 filter for documents
 - With external and internal processing and approval steps
 - Simultaneous work on different versions of a document

45 working structures
-> Distinguished by the view of the product in relation to the process



Project Structure (templates)

- Prospect Projects:
 - collects all projects for one client
- Main Project:
 - created on request
 - connected with product
- Subproject
 - projects with task and document (templates) needed (related to the request)



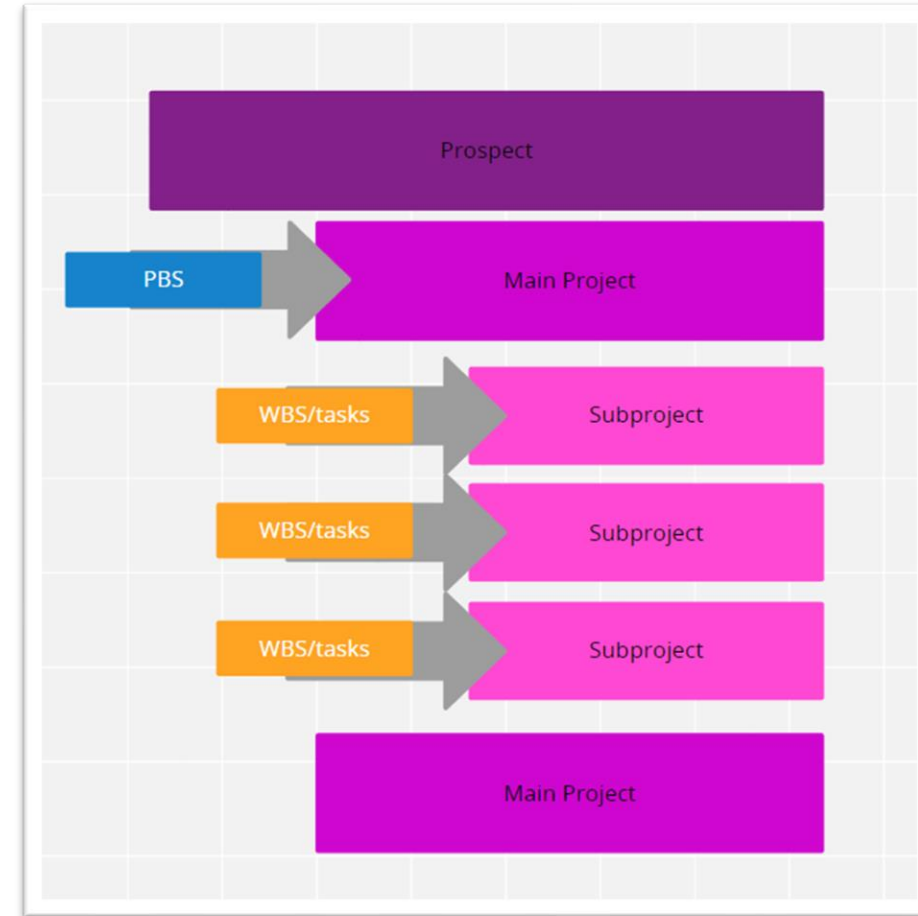
Deep Copy Function (by Lorenz Baumgarten)

Ulstein Case



new „deep copy“ function

- Main project kopieren, mit Übernahme der entsprechenden parts und documents
 - parts in der BOM werden kopiert statt referenziert
=> (noch) keine Wiederverwendbarkeit
- Sub-projects zu bestehenden projects hinzufügen
 - beim Zufügen von Subprojekten werden die neuen Tasks/Documents mit den schon bestehenden Parts im Main Project verbunden
 - Sind documents im main project/bestehendem sub project schon vorhanden, werden nur die Relationen zu den neuen tasks erstellt



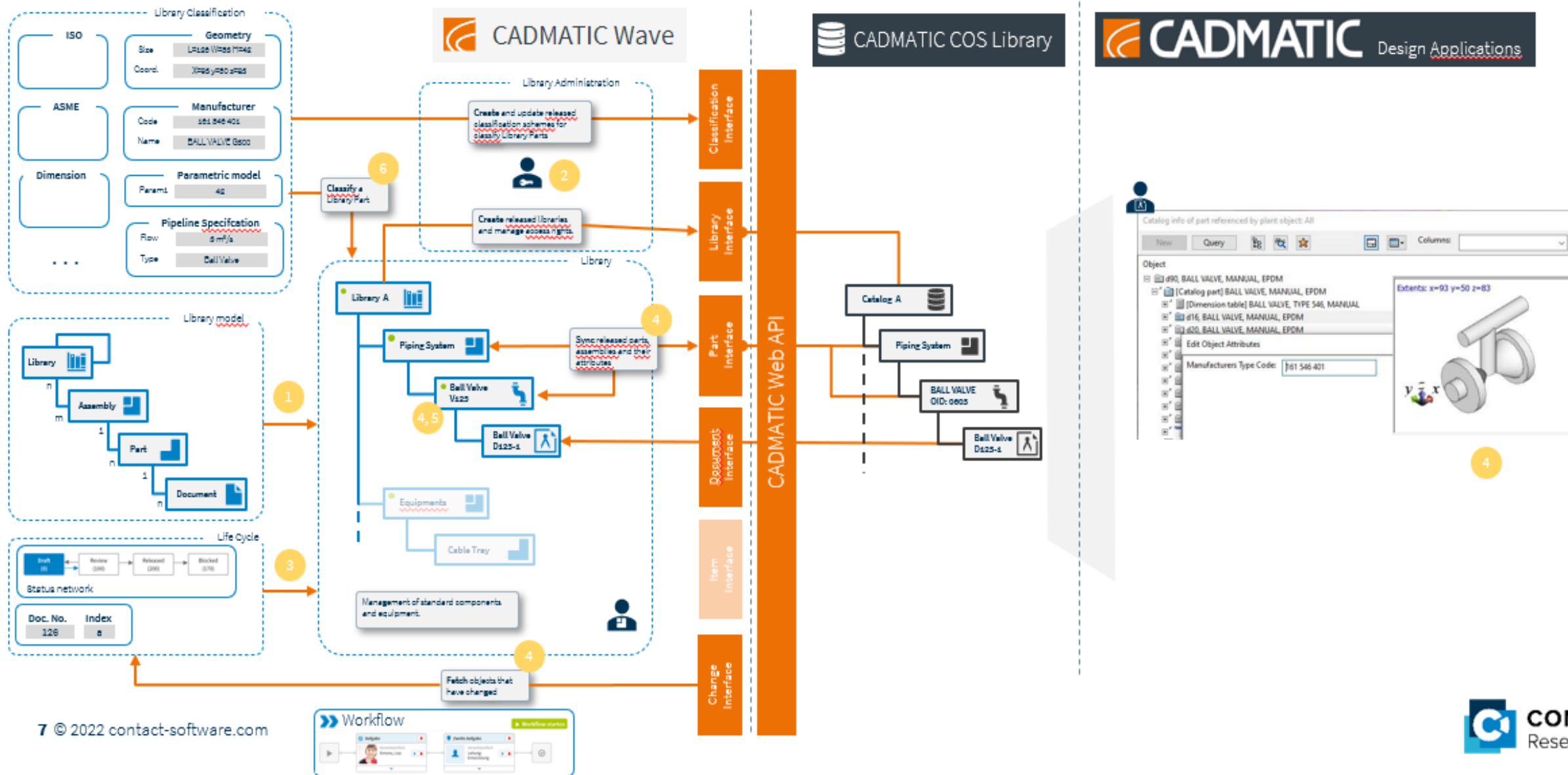
- Standard: Kopier-Funktion langsam, weil konfigurierbar, vieles gecheckt werden muss (Signale) und Objekte iterativ kopiert werden
- für komplexe Projekte mit Ship 1 Woche warten
- Custom sql queries stattdessen (jetzt 20 min zum Kopieren)

The screenshot shows a 'copy' dialog box with the following fields and options:



- ☐ Template *
- ☐ Activate propagation?
- Subprojects to be copied: Please select ...
- Project Name *: SX222 Olympic Wind Support (318/319)
- Project Manager *: Gaute Gaudestad
- Parent Project:
- ☐ Copy Part along with Project
- ☐ External design
- Part No. to be copied:
- Part Index to be copied:
- New Part Name:
- New Part Additional Name:
- Class:
- Connect to existing Part No.:
- Connect to existing Part Index:
- Product: Please select ...
- ☐ Run in background

Buttons at the bottom: Copy, Cancel.

Manage Library Parts



Customer: [Olympic Subsea ASA](#)
Parent Project Name:
Project Manager: [Gaute Gaudestad](#)

















Project Evaluation: 
Status:  New
[%] Completed:

Category: Prospect
Task Board:

Main Part No.:
Main Part Index:





07/04/2024










Total duration: 1 day(s)

 Dashboard  Activities  **Project Structure**  Data Sheet  Team  Documents  Parts  Spatial Structure  Specifications  Time Schedules  All Tasks  Open Issues  Checklists  Actions  Workflows 



 Enter Filter Text Here      

- 045418 SX222 318 New Import W000287
 - UVE Project Planning SX222 318 W000286
 - SRtP Compartment Tests
 - TEST REPORT : Remote controlled valves Bilge system
 - QA TEST : LOAD CALCULATOR SYSTEM
 - QA TEST : UHF repeater system
 - QA TEST : Power/current measurements
 - TEST REPORT : Outside lights
 - QA TEST : Loadtest Main generator sets
 - START-UP : BOW THRUSTERS (404-001-01)
 - QA TEST : PC Network
 - TEST REPORT : Miscellaneous Communication system
 - QA TEST : COMMUNICATION PLANT
 - TEST REPORT : SAT Test procedure Side thruster ()
 - QA TEST : Harbour generator
 - QA TEST : Emergency generator set (Standby/gen.protection)
 - QA TEST : ANTIFOULING (Sea chests)
 - TEST PREP : BOW THRUSTERS (404-001-01)
 - TEST REPORT : Manoeuvre speed thrusters
 - QA TEST : INTERNAL QA TEST : VALVE - CARGO EL. ACTUATORS
 - QA TEST : CAT Integrated bridge system

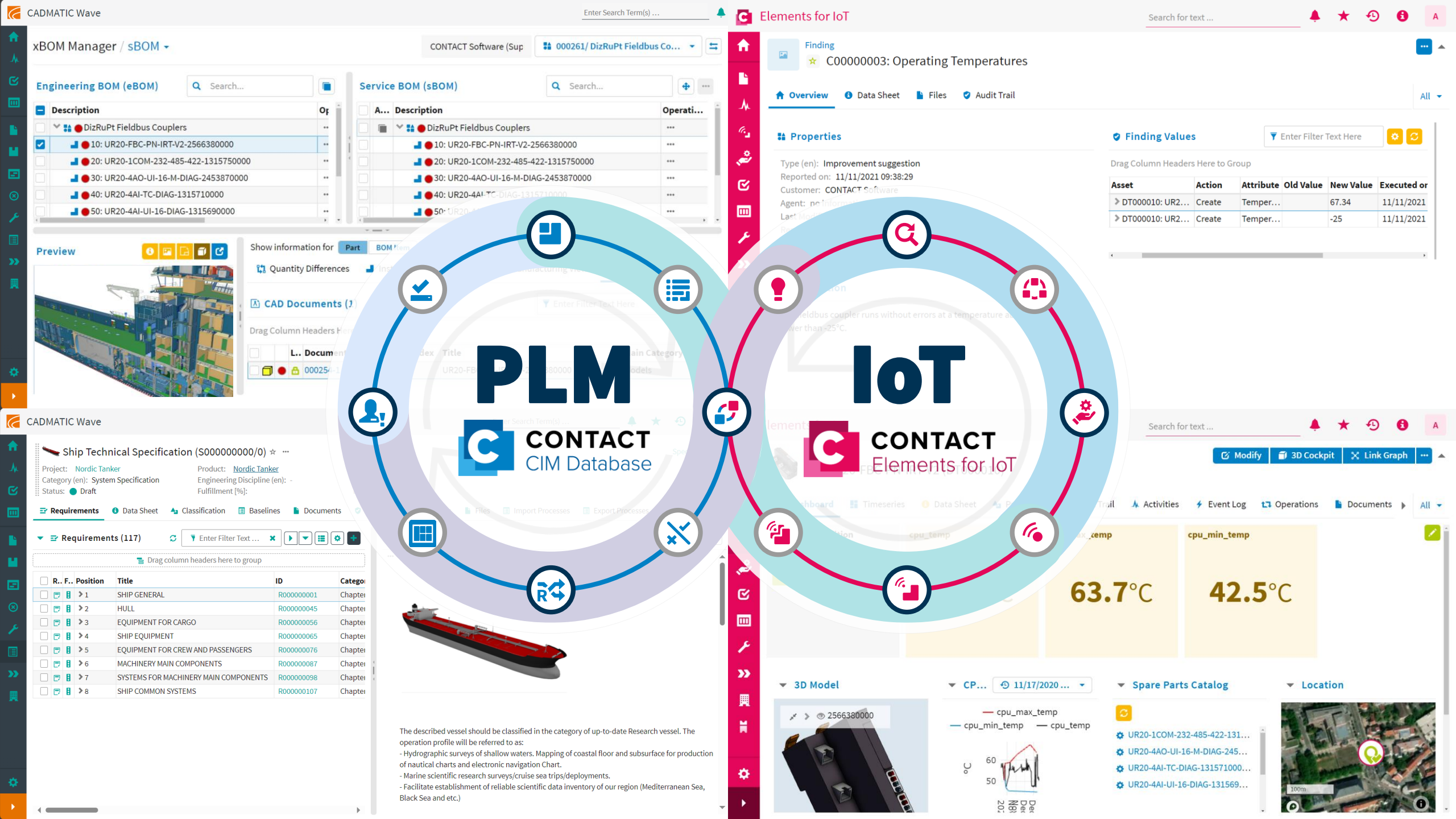
 045418 SX222 318 New Import W000287 ☆   

 Dashboard  Activities  **Project Structure**  Data Sheet  Team  Documents  Parts  **Spatial Structure**  Specifications

All

 Enter Filter Text Here   

- 318
 - 89.1
 - A-deck acc.
 - A-Deck aft of Superstructure
 - AFT PROPULSION/STEERING GEAR AREA (10 Aft ship)
 - B-deck acc.
 - B-Deck aft of Superstructure
 - CARGO, MID-SHIP AREA (30 Cargo area)
 - Casing
 - C-deck acc.
 - D-deck acc.
 - E-deck acc.



Contact

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a sustainable future*

Join us as a research partner or be part of our university program!