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Cadmatic Hull Applications

Cadmatic Highlights SASEBO Seminar 2022

Content

- Hull to eShare
- Basic Design
- Import Napa Steel
- Interoperability
- Shape and Shell
- Construction

Hull to eShare

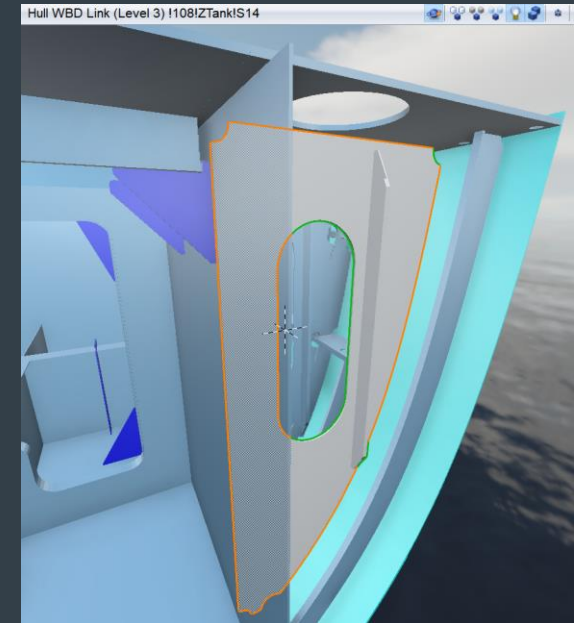
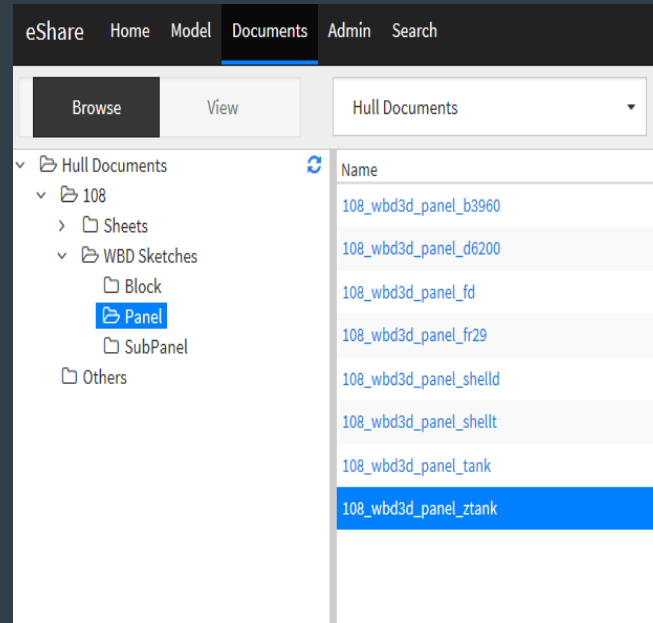
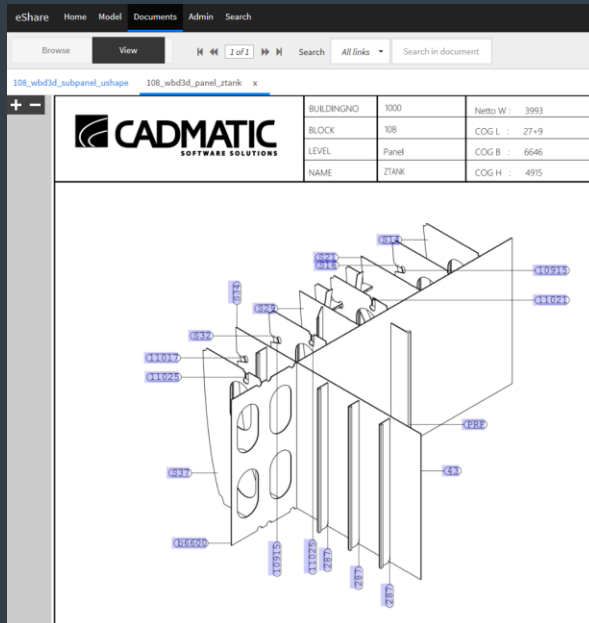
- Publication of Sheet drawings (class drawings) to CADMATIC eShare

The screenshot displays the eShare web application interface. The top navigation bar includes links for Home, Model, Documents, Admin, and Search. A search bar is present with the text "Search in project". The main content area shows a technical drawing of a ship's hull structure, specifically a cross-section of a hull frame. The drawing is labeled "108_sheet_108-2" and includes various annotations such as "Frame 26.5", "Frame 29", and "2000/1008". The drawing is divided into sections by vertical lines, and there are several callouts and dimensions. On the right side, a sidebar displays the drawing's metadata:

108_sheet_108-2	
Appr. Class	GL
Appr. Owner	
Check	
Check PI	
Date	14-04-16
Date	29-10-20
DBG: Publication	
Date	10/29/2020 3:46:21 PM
Description	Alt Frames - COS
Document Type	Hull Document
Drawing naam	1000-108
Drawn	
Mod. Class	GL
Mod. Owner	
Name	AltFr
Object number	25
Revision	A
Sheet format	A0
Total sheets	2
User name	7
Yard number	BNR 1000

Hull to eShare

- Publication of Hull Work Breakdown sketches to CADMATIC eShare
- Meta data is exported as pdf (profile sketches / profile list sketch)

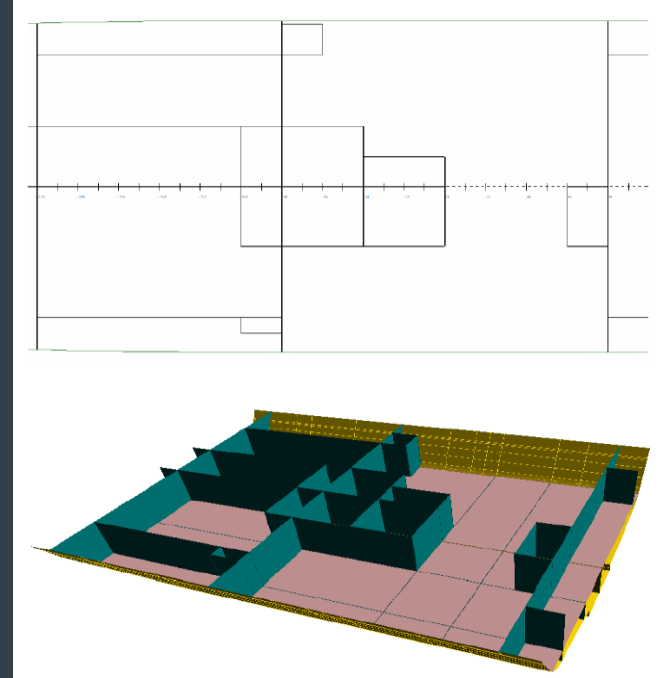


Basic Design

Designing in 2D for Basic Design is the most used option when faced with tight deadlines

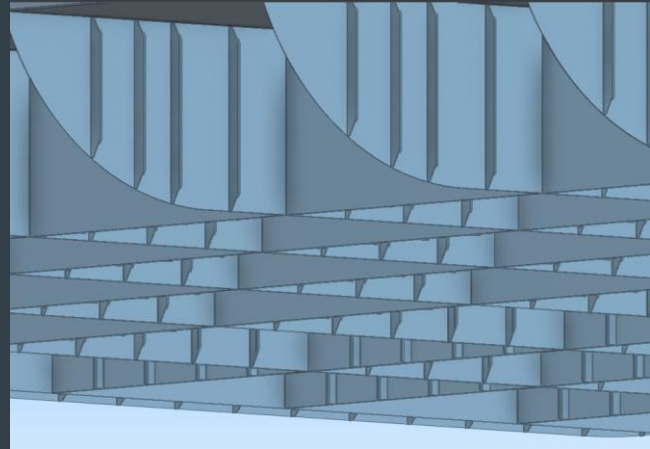
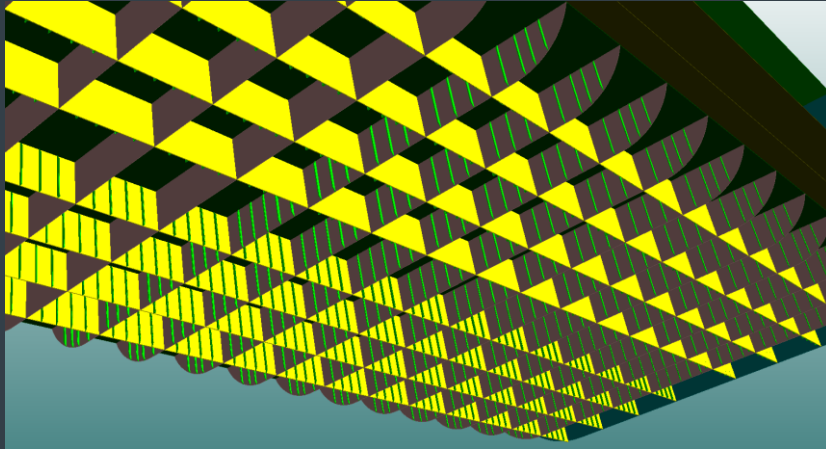
Sketching helps to understand proportions, scale, and relationships that are difficult to see in 3D.

Sub-bulkheads and longitudinal bulkheads can be created by converting drawn lines (2D) at the floor or deck level to steel plates; the system builds the 3D model automatically and searches for the 3D boundaries of the steel plates to be created

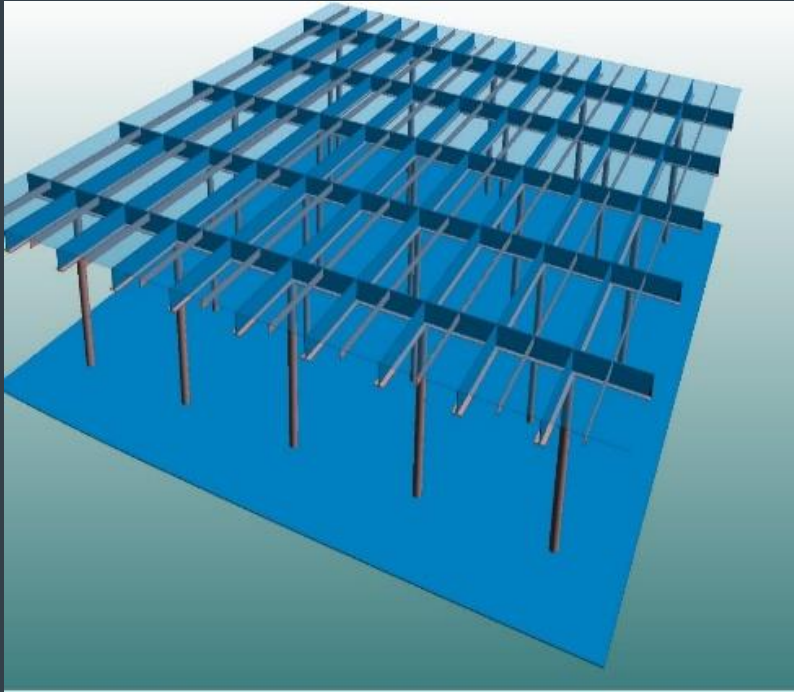


Basic Design

- Each bulkhead (main or sub) can have assigned properties so that the material and stiffening structure will be available and visible in the views.
- Profiles can be created as plate property & a series of profiles in cross section can be created in one go
- The system will create all profiles on grids positions which are not occupied by other construction
- Profiles can be easily converted to “production” profiles



Basic Design



- Create a series of pillars in length and/or in breadth on a deck level all in one go
- Provide the direction and distance.
- The system automatically searches for the end limitations, like the deck below

* More about these 3 topics tomorrow in the workshop

Basic Design

Heavy machinery layout influences the ship's weight

Equipment library provides access to the outfitting database

The equipment is displayed in the hull view and can be positioned as required.

Outfitting and piping disciplines can access the same model, making adjustments or changes according to machinery requirements.

Equipment can be connected to a hull view

Change of the Hull view level will move the equipment

Use case:

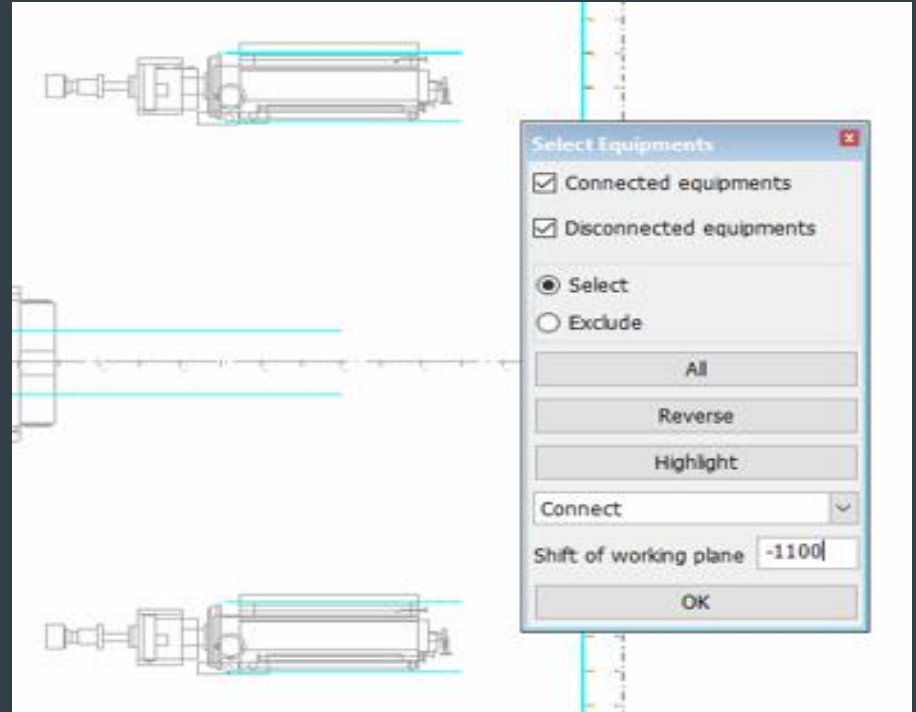
- Connect a view to a grid position H3

- Create constructions in this view

- Connected the equipment to the Top view H3

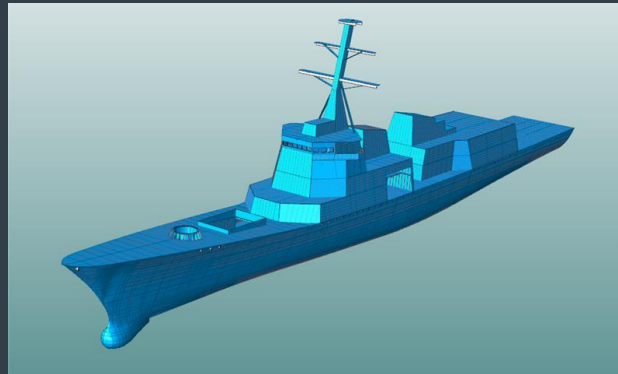
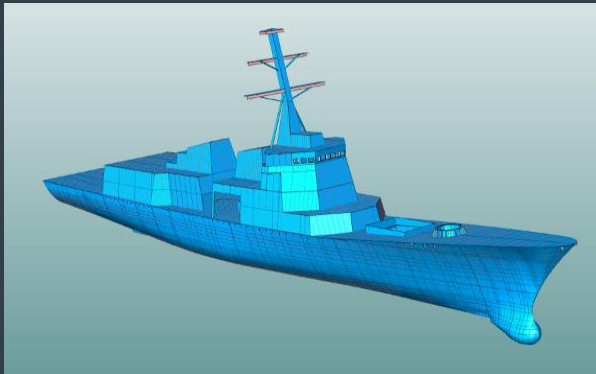
- Change the grid height H3

- After recalculation of construction and views all construction and connected equipment change to the new grid values.

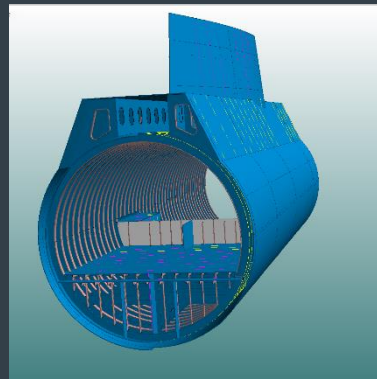
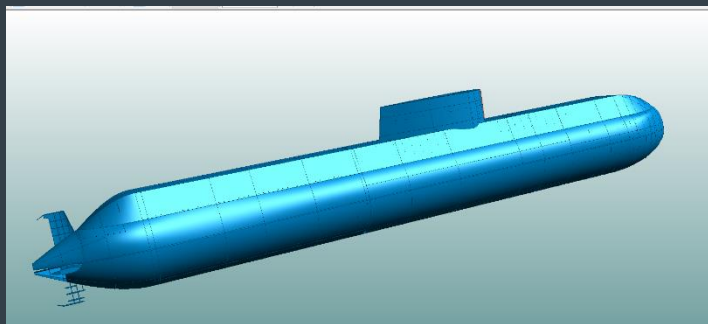
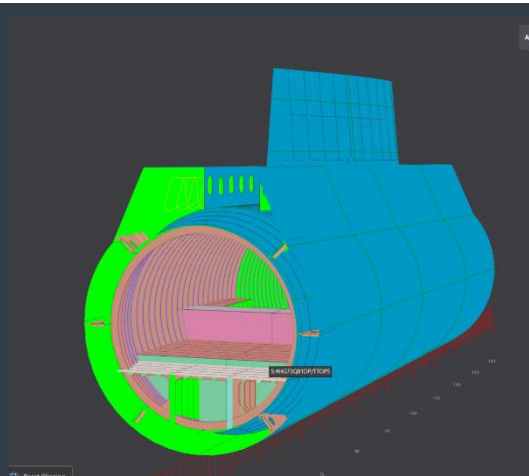
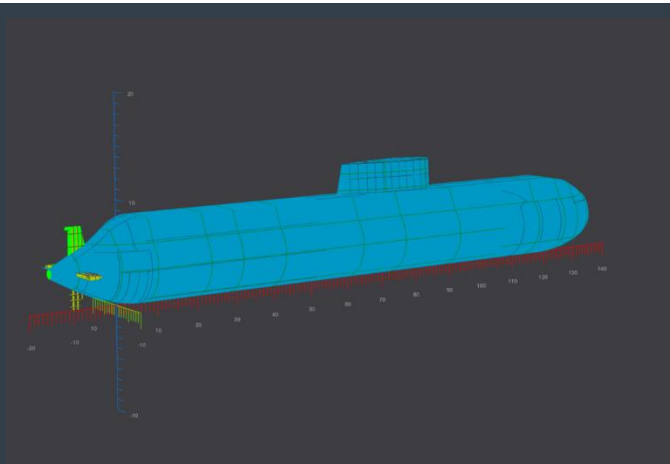


Import Napa Steel construction

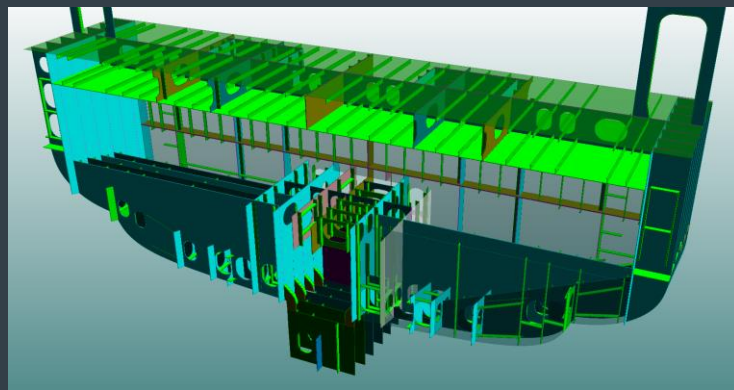
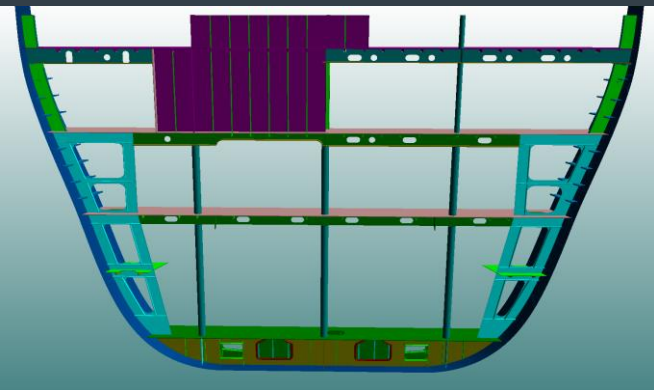
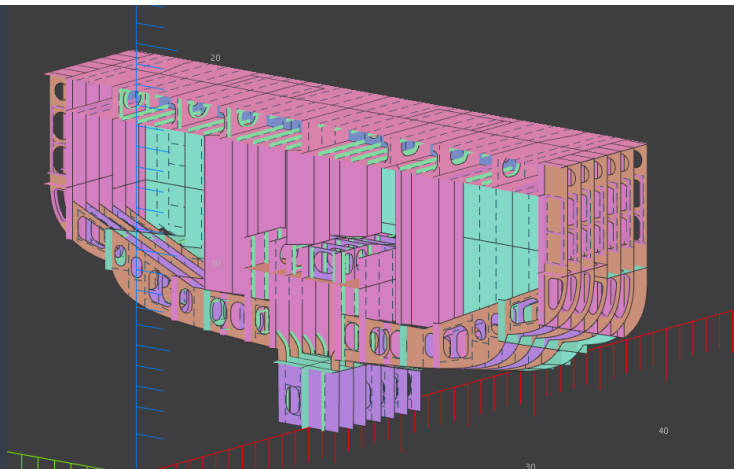
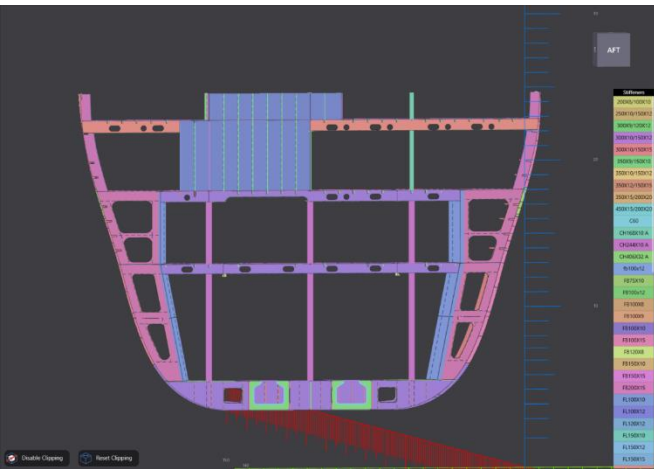
- The Thickness direction from Napa Steel construction is used
- All plates fully topological (no auxiliary lines/arcs are used)
- Seams , Butts & Shell plates can be in/excluded in the Import
- Corrugated construction imported as Corrugate profile or Corrugated Bulkhead depending on the “Corrugation Limit”
- All Based on the latest Napa Steel / Napa Steel Designer



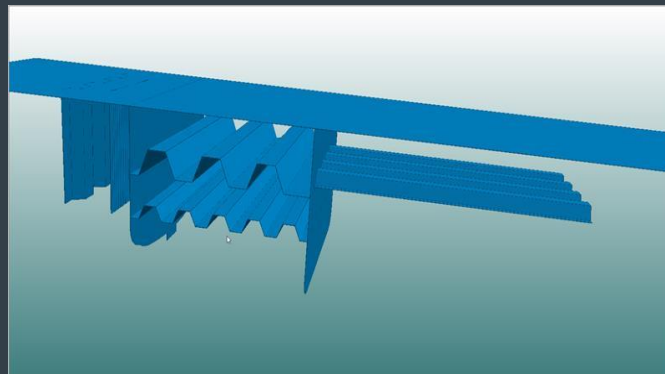
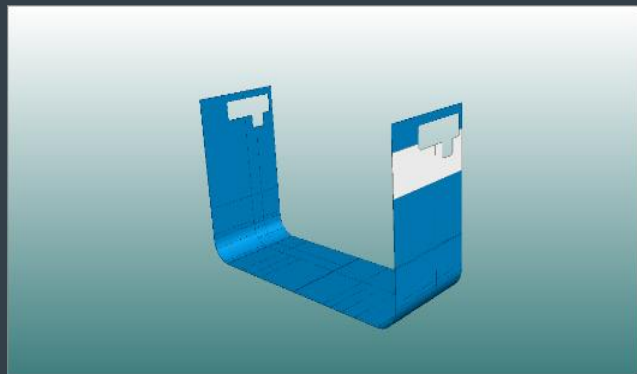
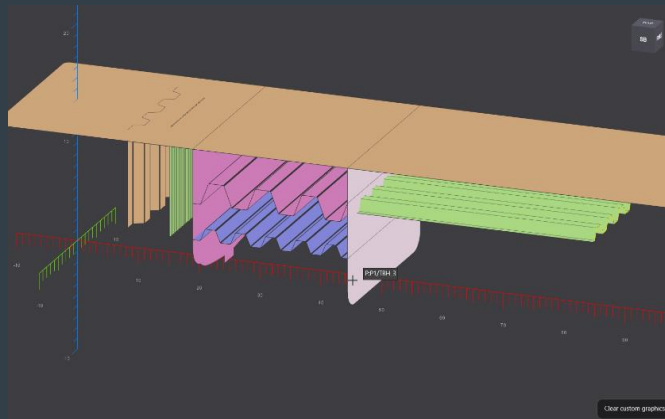
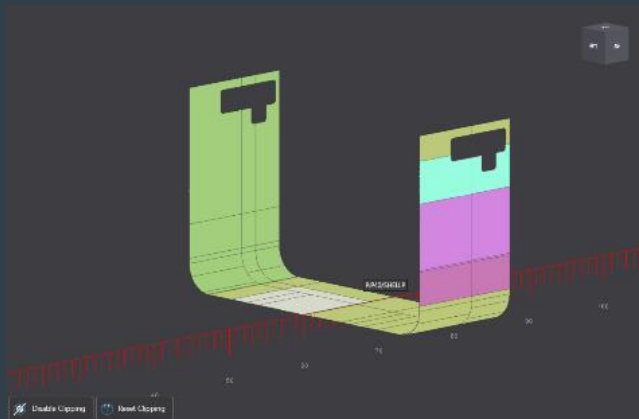
Napa steel import example



Napa steel import example



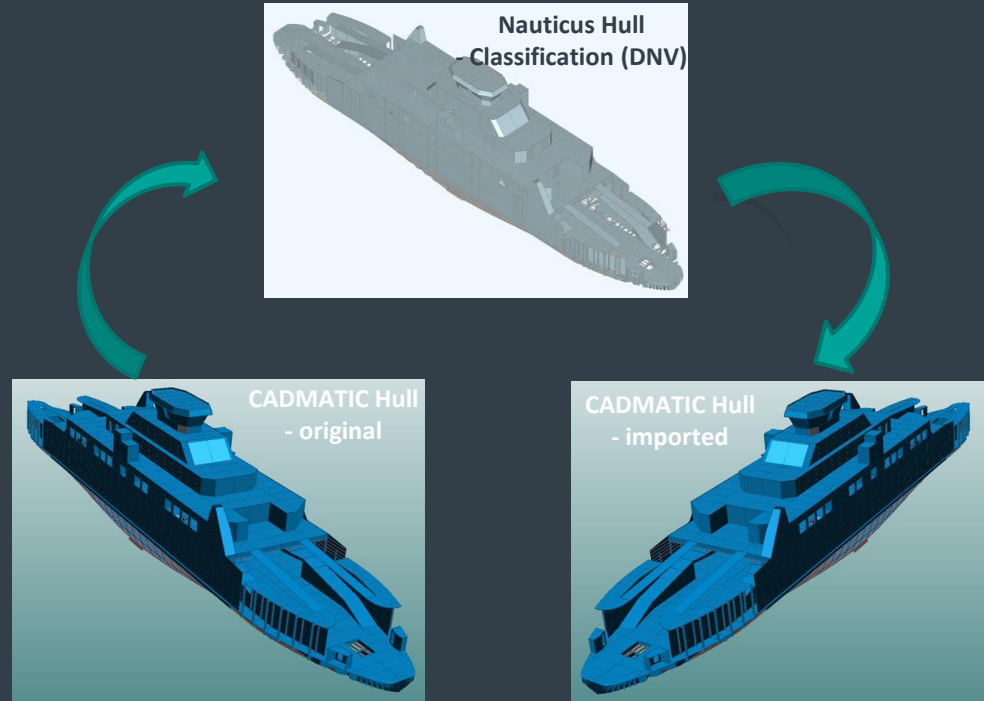
Napa steel import example



Interoperability

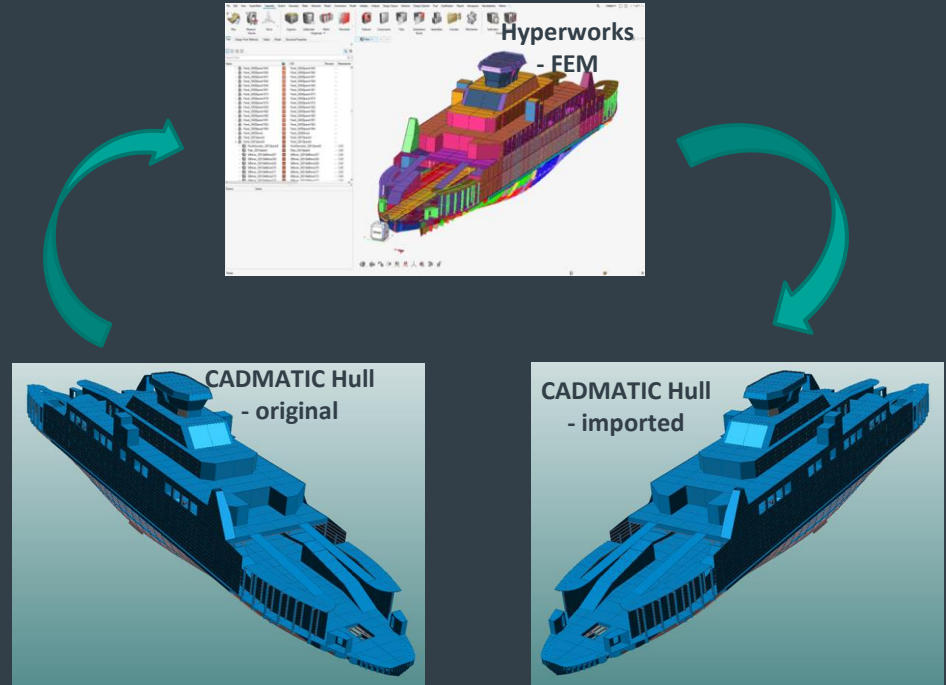
Export to OCX XML format

- Open Class 3D Model exchange defined by DNV-GL
 - Provides the basic functionality of exporting 3D construction
 - Meant to allow classification societies to use for approvals
- Fully topological to the OCX format
- The process improves the drawing less strategy in shipbuilding
- Having direct access to the 3D model improves the understanding of the design.
- All parties involved in the vessel have direct access to the model no creation of dedicated drawings.



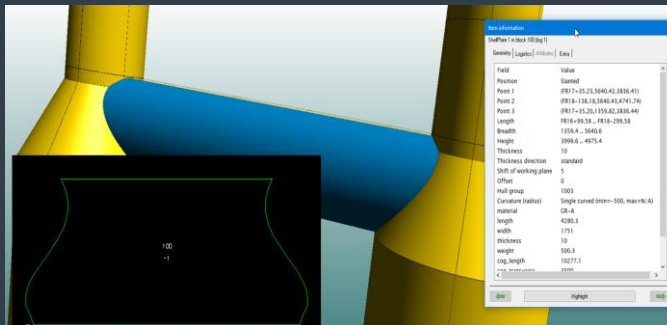
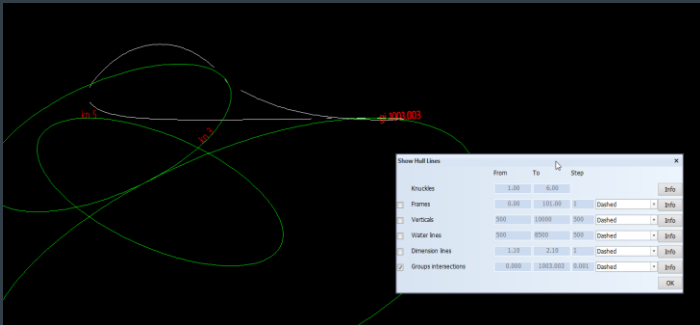
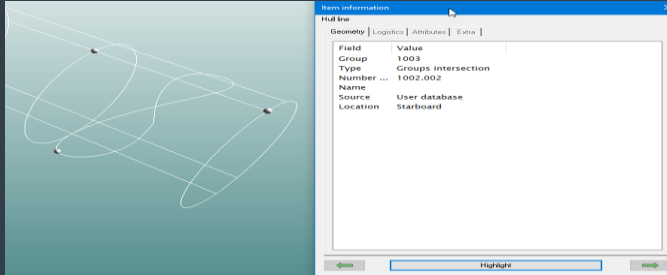
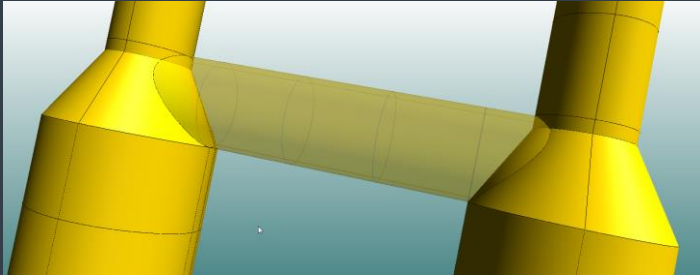
Export to OCX XML format

- Can be used to import Hull construction in Hyper Works (FEM)
- Eliminating the need of meshing the model inside the CAD software
- Presently, the naval architect needs to prepare a time-consuming meshed model of the vessel to study the steel stresses.



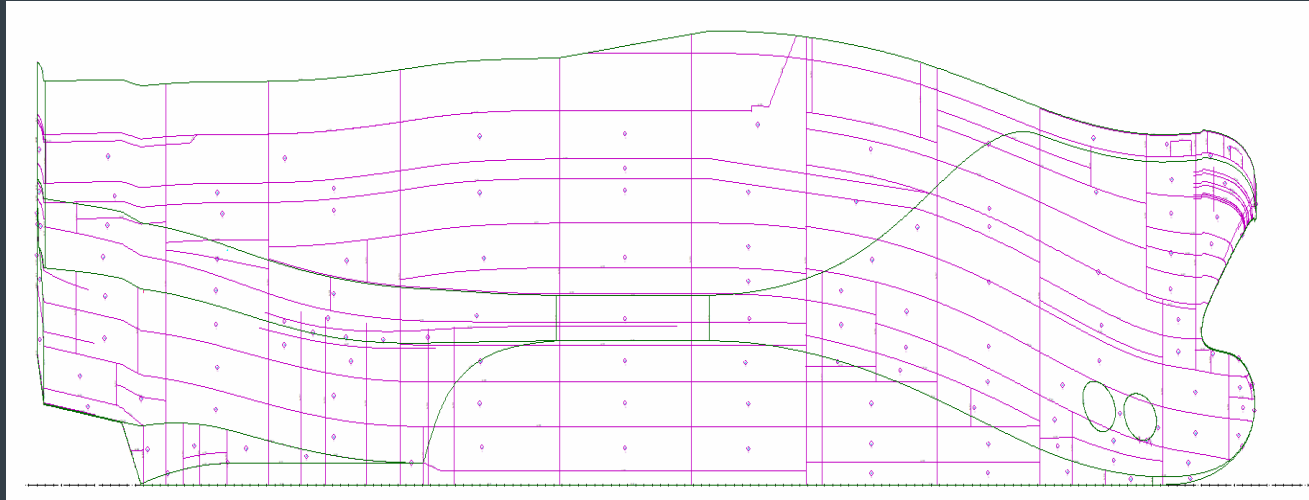
Shape and Shell

- Automatic creation of new type off Hull lines at different groups so called "Group Intersections" & creation of Boundary Hull lines
- Hull lines visible in Hull & Hull viewer.
- Shell plate & expansion can be made based on them



Shape and Shell

- 2D Classic shell expansion in addition to the 3D shell expansion
- Creation of shell plates is possible
- Creation of shell frames is possible



Construction

- Create enclosed plates in view
- Default in Shell application
- With 1 Click a topological (Shell) plate will be created

3D Application

Enclosed Plates in View ×

Thickness

Thickness direction
☒ towards reversed frame
☐ From reversed frame

Shift of working plane

Type of material ▼

▼

Shell Application

Enclosed Shell Plate ×

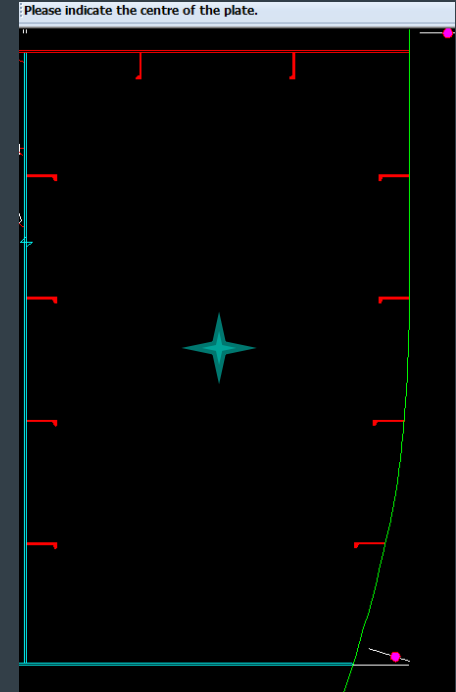
Thickness

Thickness direction
☒ Standard
☐ Non-standard

Offset

Shift of working plane

Type of material ▼



Feel Empowered

