



# Korean Register's 3D Viewer

## Open Class 3D Exchange Consortium

February 3th, 2021

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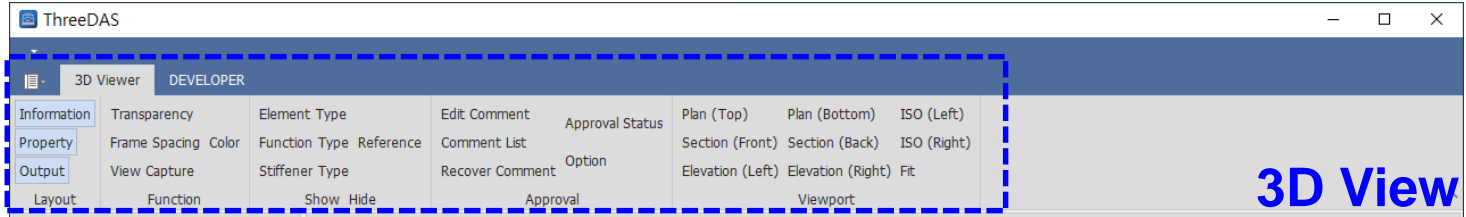
- Korean Register(KR) develops a 3D model-based structural design approval system.
- It supports 3D OCX format.
- KR was a 3<sup>rd</sup> party member during OCX development under APPROVED JIP.
- KR want to be a full member of OCX Consortium.
- Recently, KR is collaborating with Korean shipyard to implement and stabilize OCX interface.



# 3D Viewer

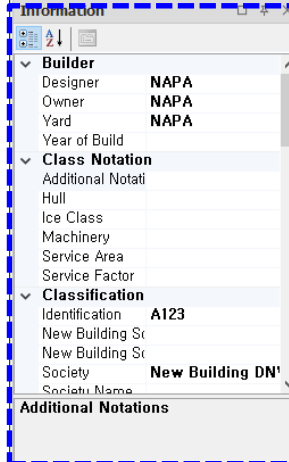
of Korean Register

Menu

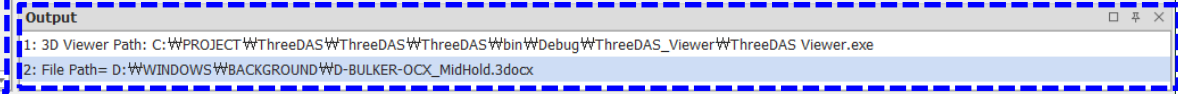
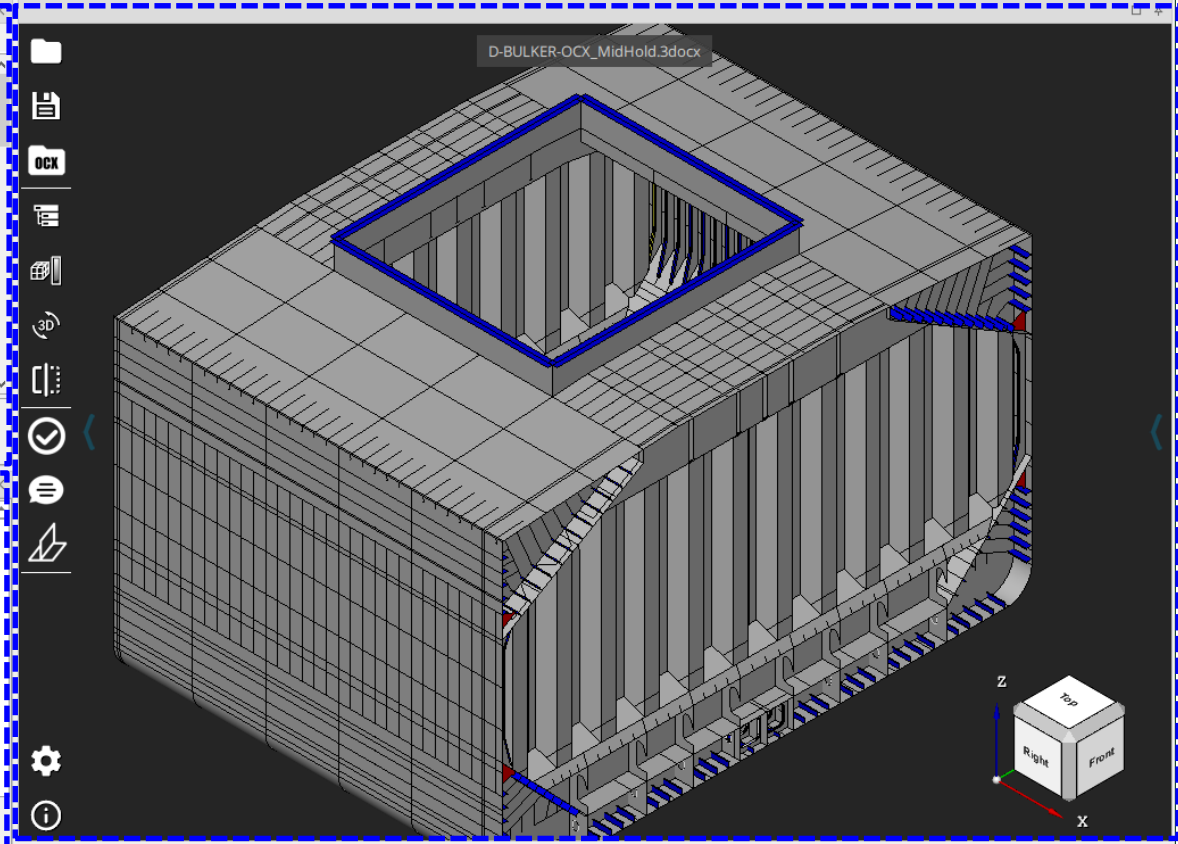
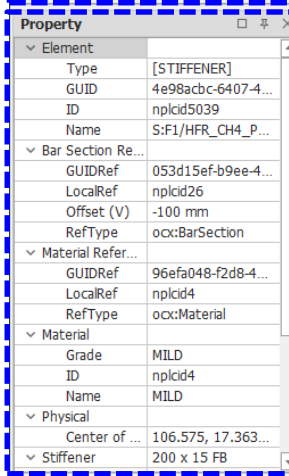


3D View

Information



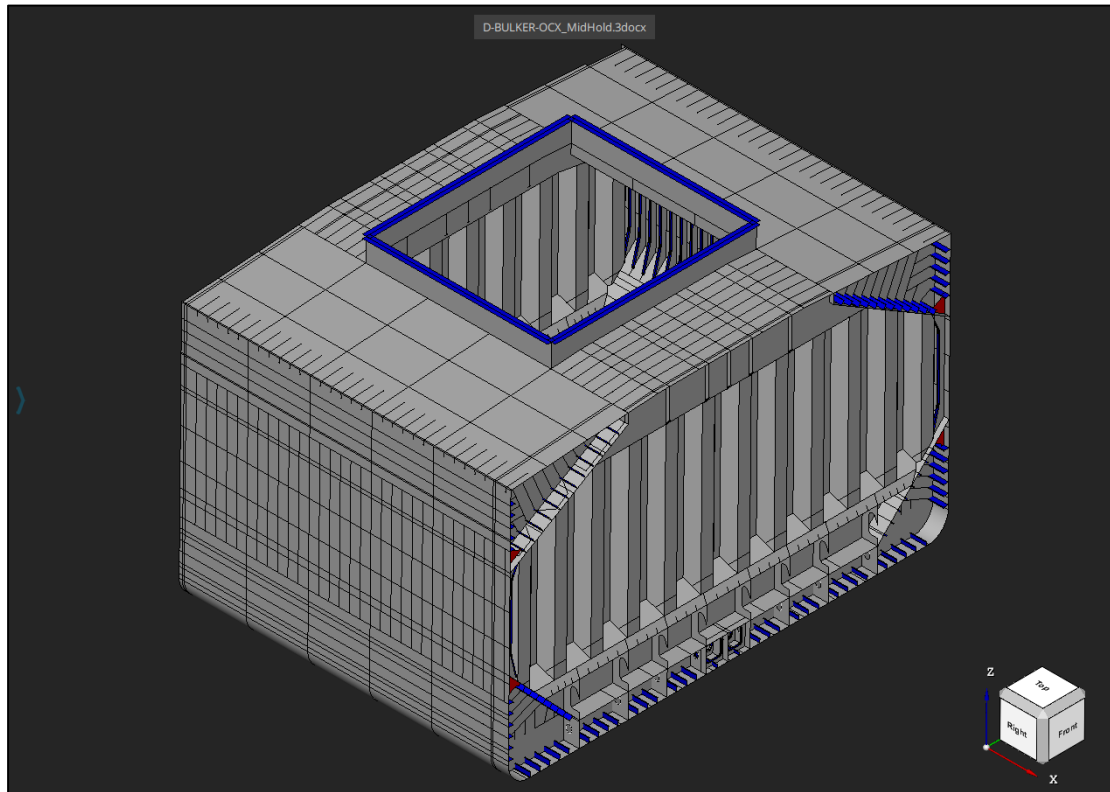
Property



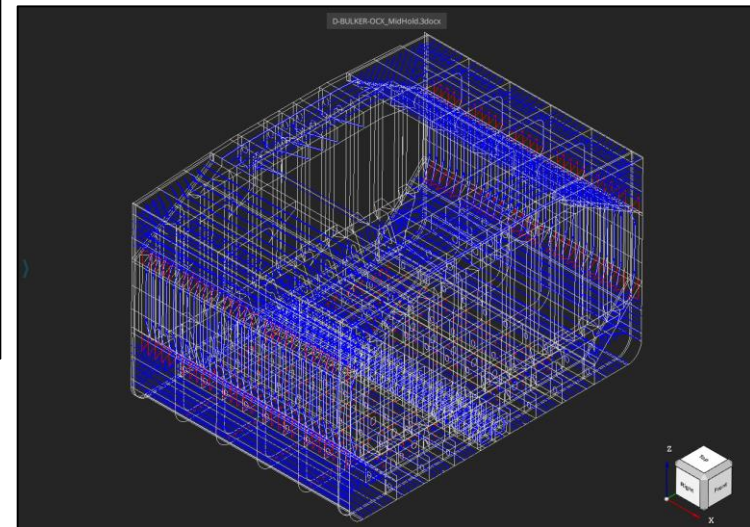
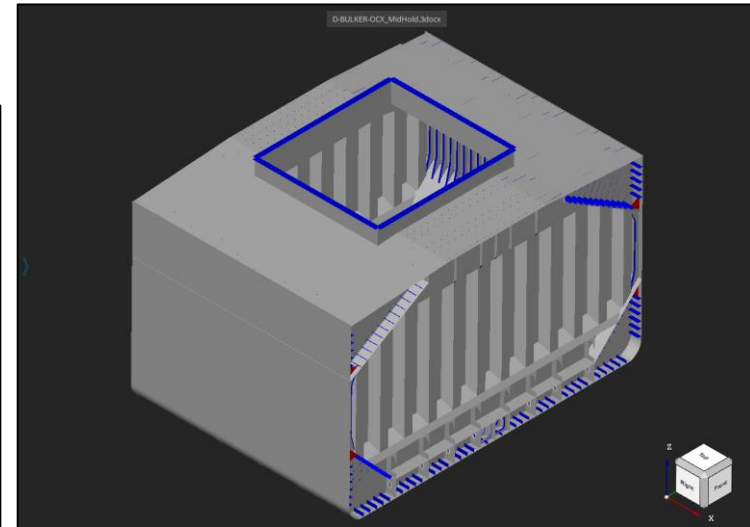
Output

- Display Mode (Wireframe, Shading, Shading with Edges)

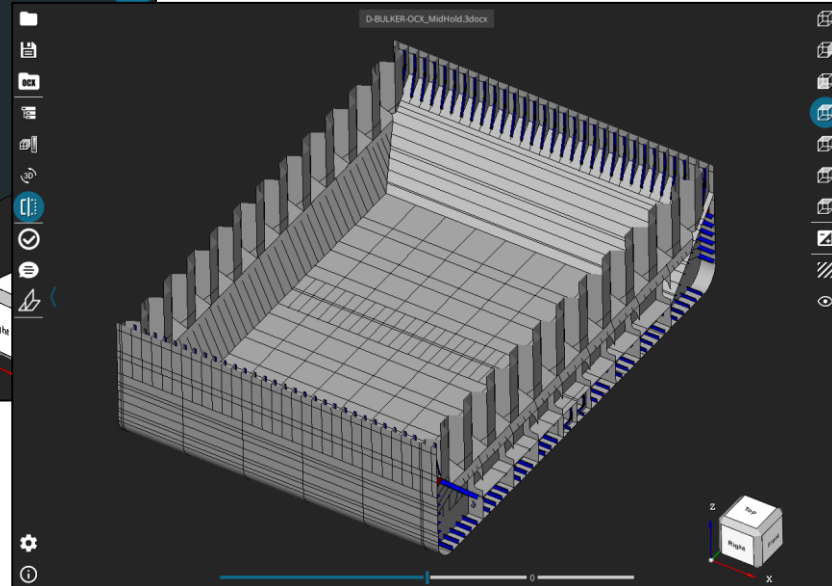
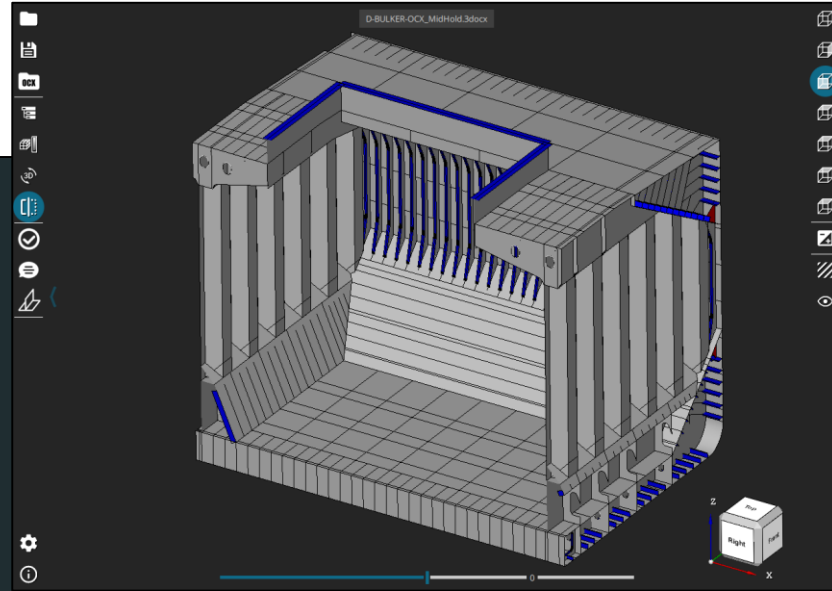
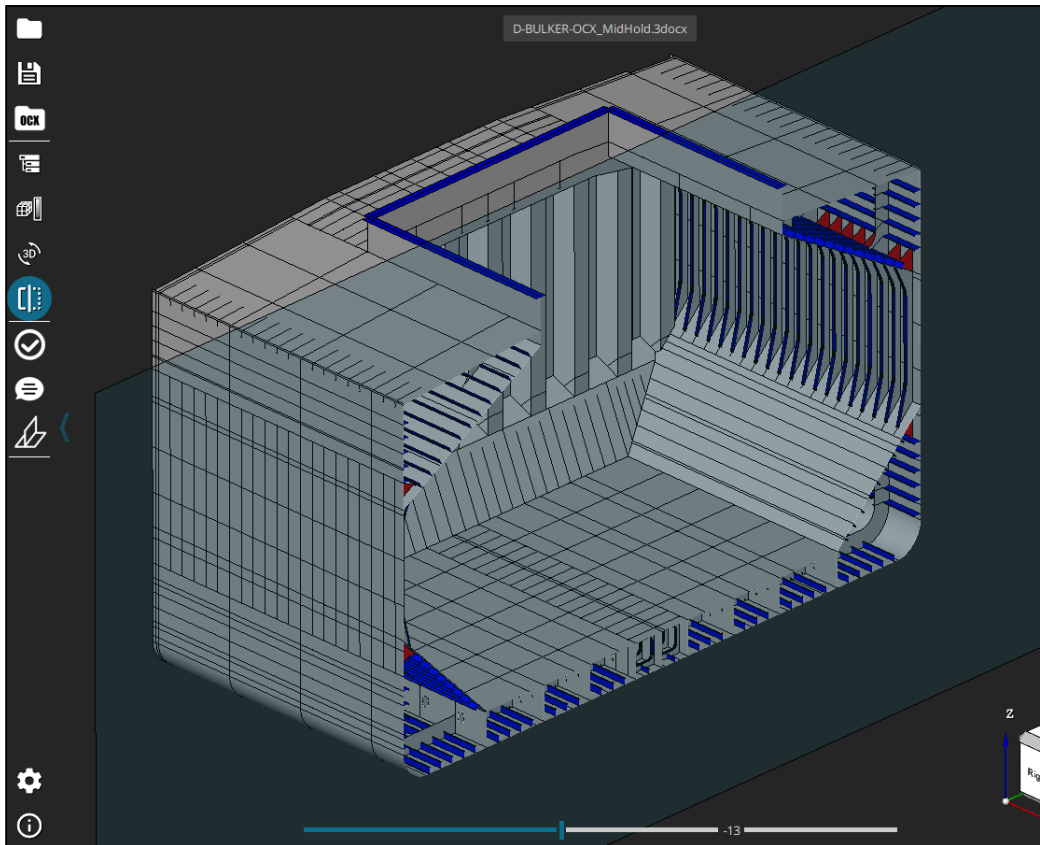
## Shading

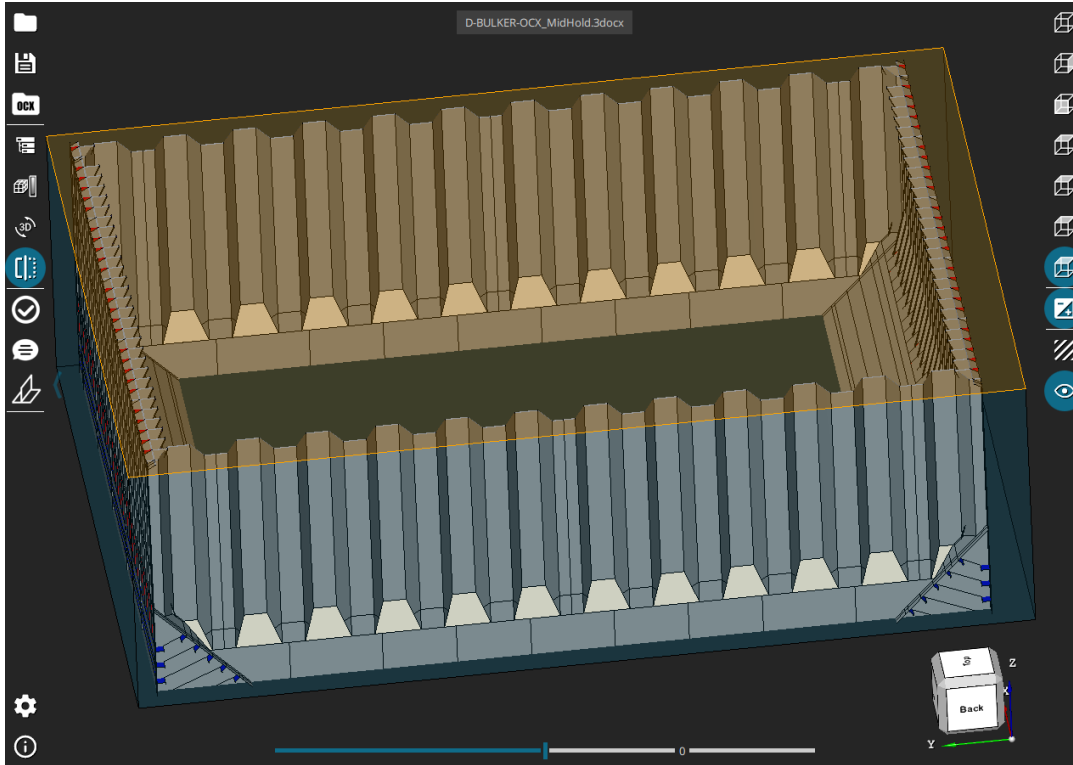


**Shading with Edges**

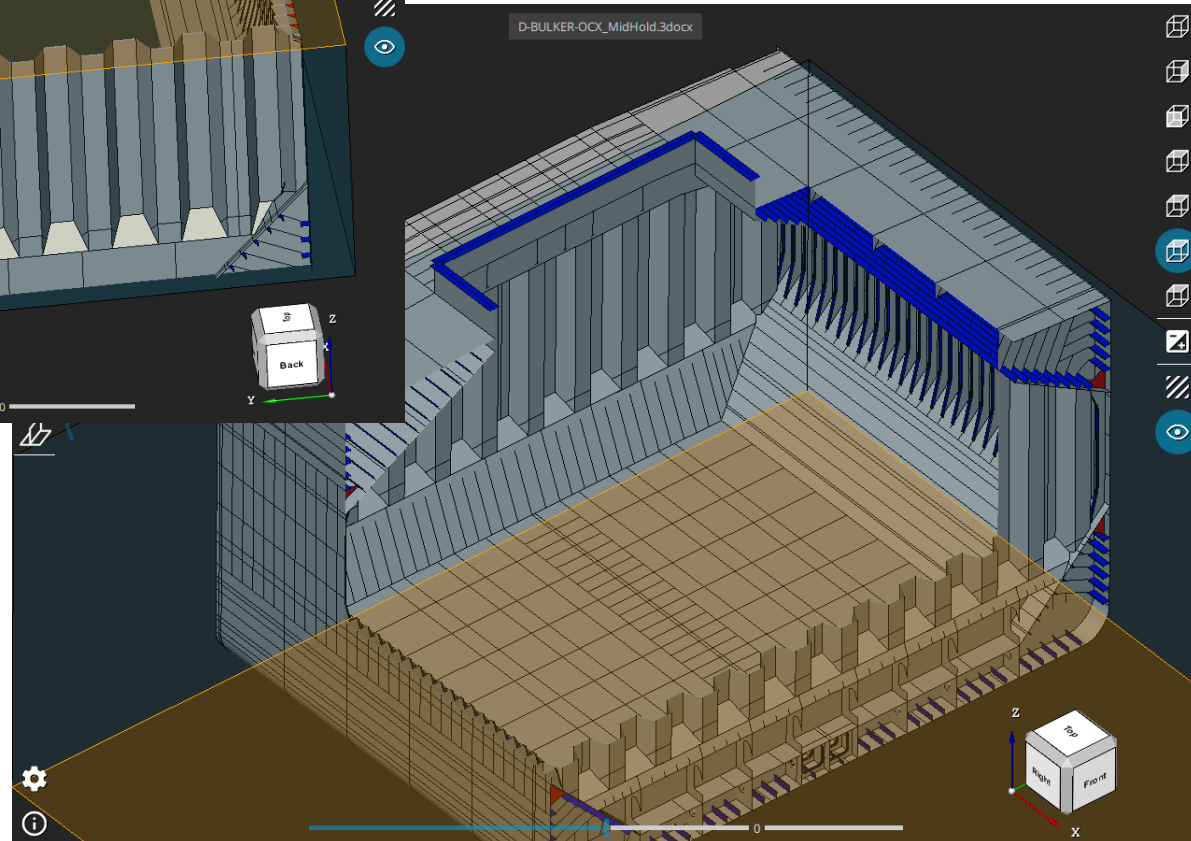


**Wireframe**





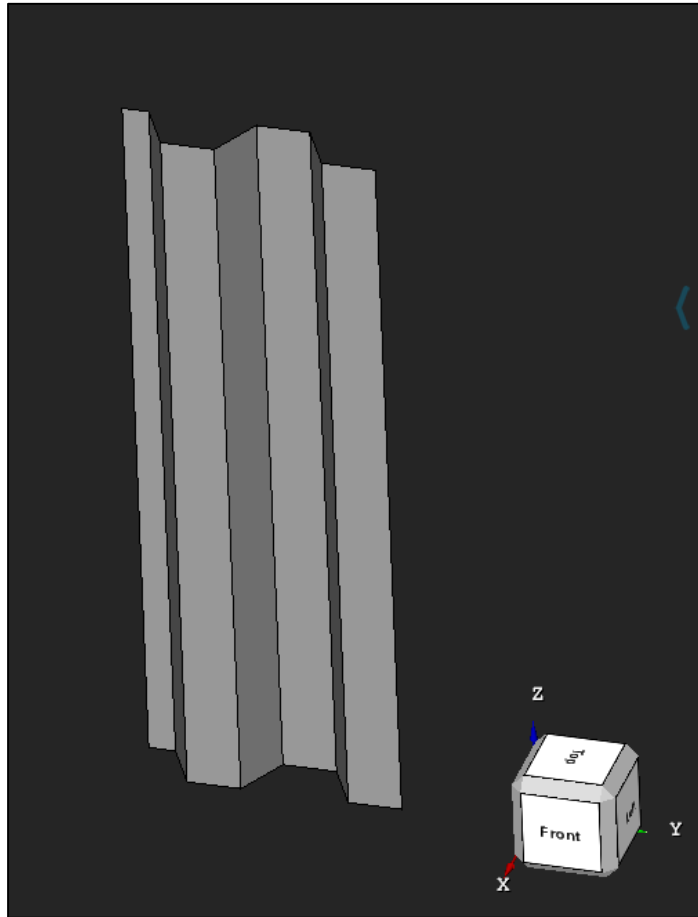
by Box



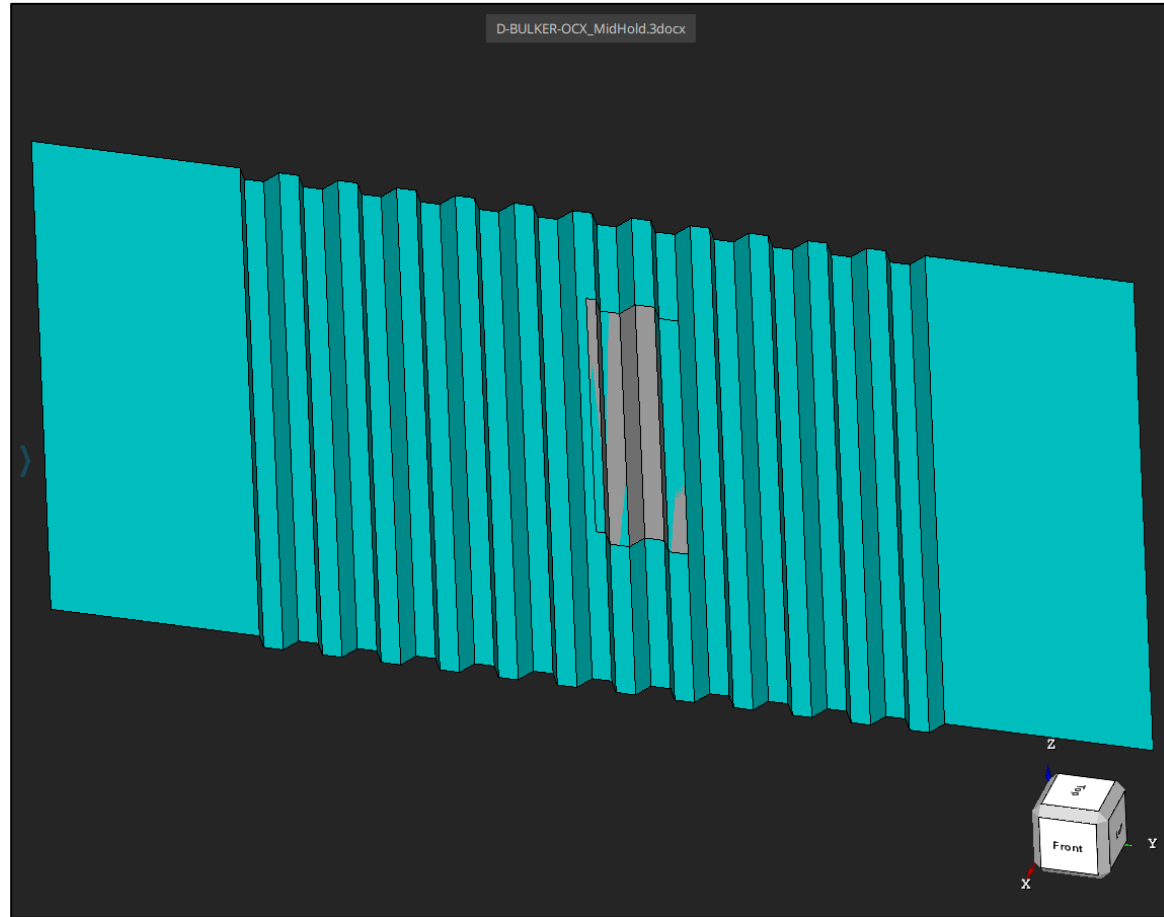
by 3 Planes



## Corrugation Bulkhead



## Reference Surface



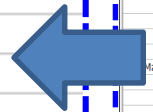
<b>OCX Classification</b>	
Society	<b>DNV</b>
Society Name	
New Building Society	
New Building Society Name	
Identification	<b>A123</b>
<b>OCX Header</b>	
Name	<b>D-BULKER/A</b>
Author	<b>NAPA</b>
Organization	<b>NAPA</b>
Originating System	<b>NAPA Steel</b>
Documentation	<b>OCX Export</b>
<b>OCX Principal Particulars</b>	
LPP	<b>215.95 m</b>
Rule Length	<b>215.95 m</b>
Block Coefficient	<b>0.836</b>
FP Pos	<b>215.95 m</b>
Moulded Breadth	<b>36 m</b>
Moulded Depth	<b>21.8 m</b>
Scantling Draught	<b>15 m</b>
Design Speed	<b>14.5 Knots</b>
Freeboard Length	

The screenshot shows the ThreeDAS software interface. The main window displays a 3D model of a ship's hull structure, specifically a D-BULKER-OCX\_MidHold. The model is rendered in a wireframe style with blue highlights on the OCX structure. The interface includes a menu bar, a toolbar, and a status bar. The 'Information' window is open, displaying the following data:

<b>Builder</b>	
Designer	NAPA
Owner	NAPA
Year of Build	NAPA
<b>Class Notation</b>	
<b>Classification</b>	
Identification	A123
New Building Society	
New Building Society Name	
Society	New Building DNV
Society Name	
<b>Document</b>	
<b>Korean Register</b>	
<b>OCX Header</b>	
Author	NAPA
Documentation	OCX Export
Name	D-BULKER/A
Organization	NAPA
Originating System	NAPA Steel
<b>Principal Particulars</b>	
FP Pos	0 mm
Block Coefficient	0.836 Dimless
Steepest Equilibrium WL	
Design Speed	14.5 Knots
FP Pos	215950 mm
Freeboard Deck Height	
Freeboard Length	
Heavy Ballast Draught	
Length of Waterline	
LPP	215950 mm
Moulded Breadth	36000 mm
Moulded Depth	21800 mm
Normal Ballast Draught	
Rule Length	215950 mm
Scantling Draught	15000 mm
Slamming Draught Empty F	
Slamming Draught Full FP	215950 mm
Speed Factor	
Upper Deck Area	
Water Plane Area	
Z Pos Deckline	

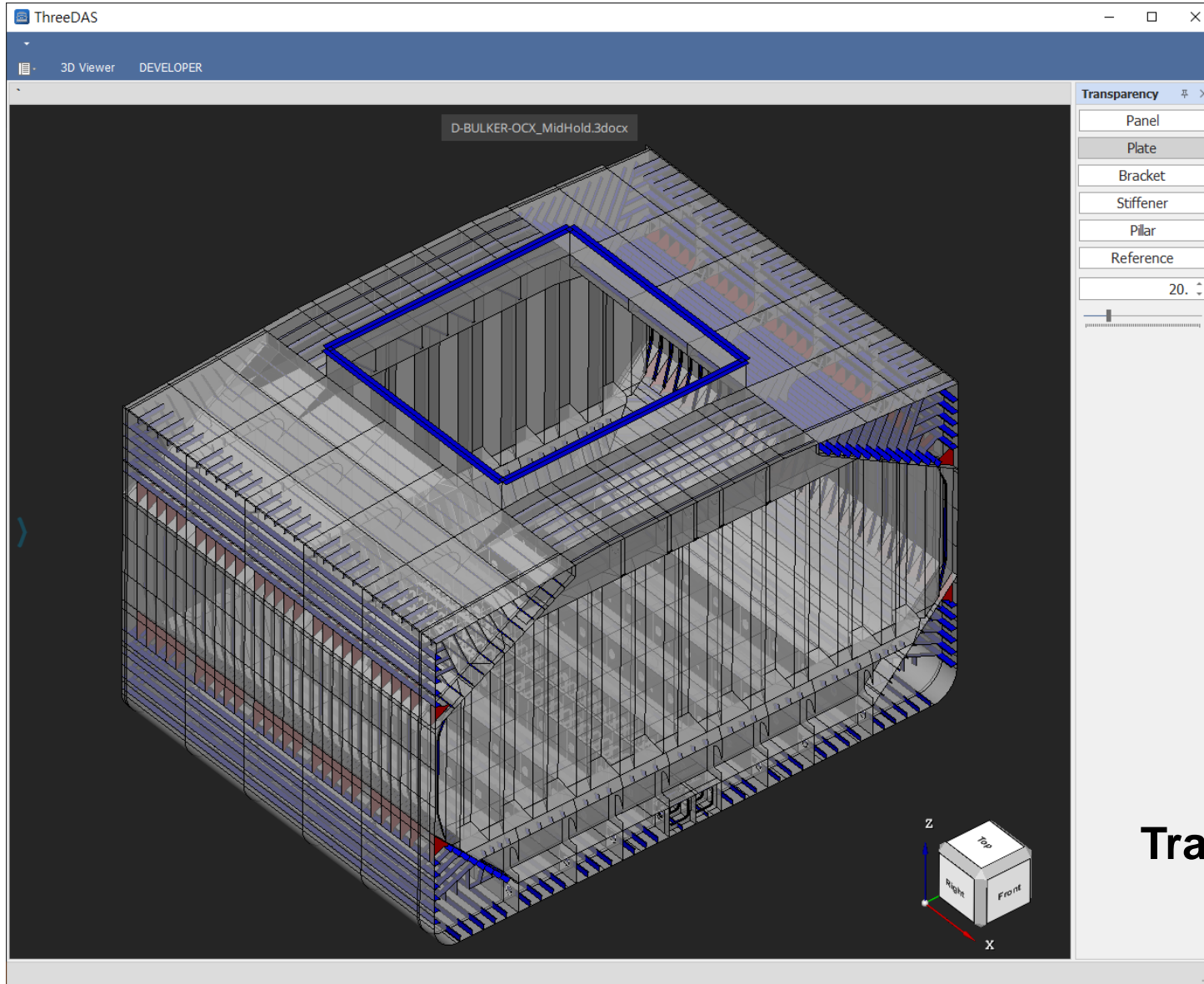
The 'Output' window at the bottom shows the file path: 1: 3D Viewer Path: C:\PROJECT\ThreeDAS\ThreeDAS\bin\debug\ThreeDAS\_Viewer\ThreeDAS\_Viewer.exe

Property	
▼ Element	
Type	[PLATE]
GUID	d59255e4-f1c3-45f1-a511-1ef1...
ID	nplcid1275
Name	P:24/DECK
▼ Material Reference	
GUIDRef	fccb62e5-4c37-4a5c-88c7-21d8...
LocalRef	nplcid7
RefType	ocx:Material
▼ Material	
Grade	T36
ID	nplcid7
Name	HT36
Thickness	23 mm
▼ Physical	
Center of Gravity	117.96, -13.3605, 21.3093
▼ Class Data	
Approval Status	Reviewed



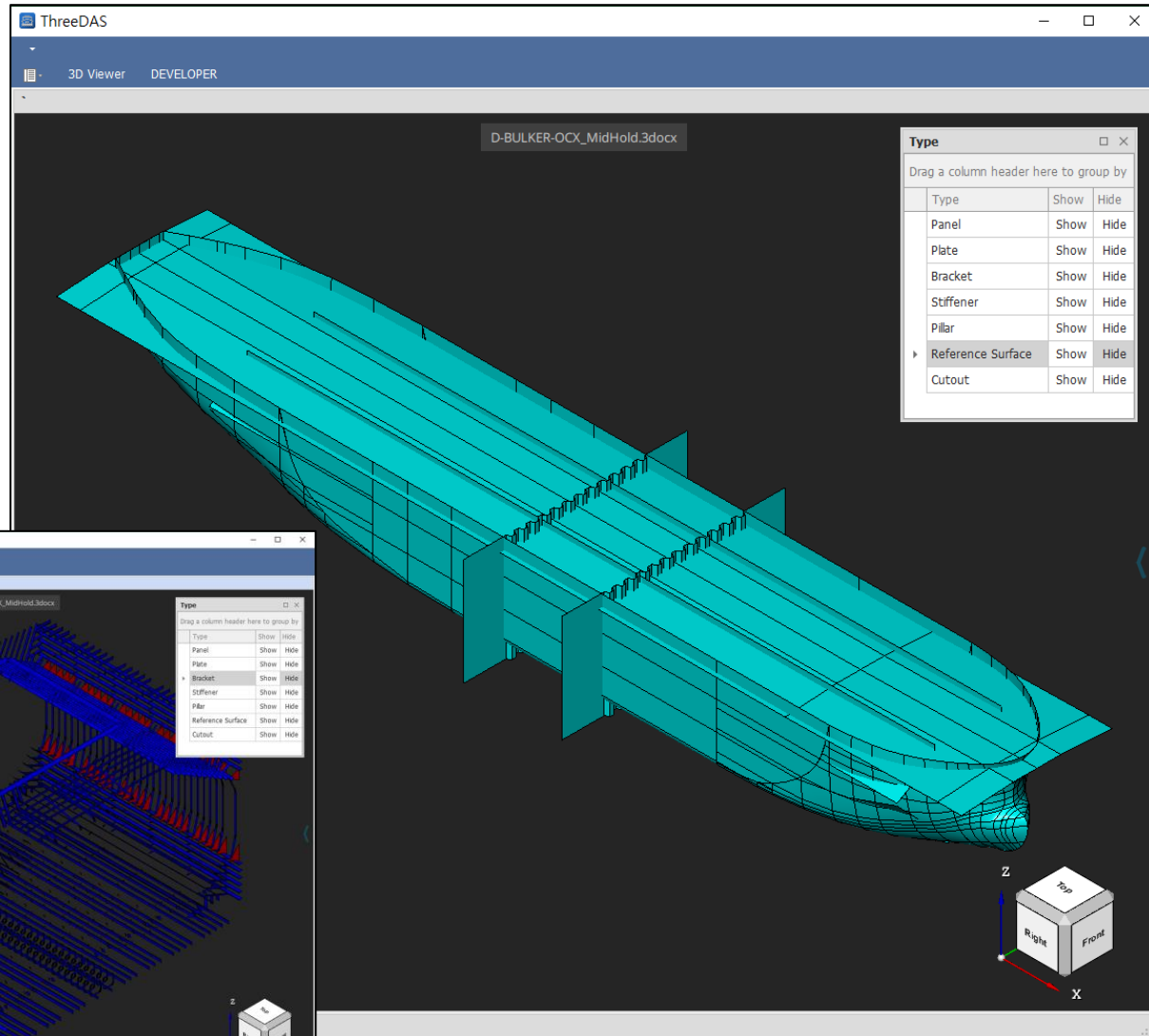
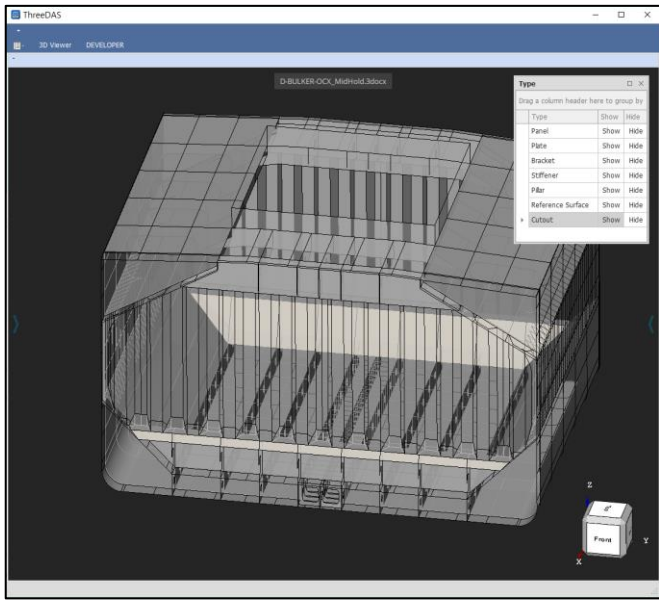
The screenshot shows the ThreeDAS software interface. The main window displays a 3D model of a ship's deck structure with a yellow highlighted area and a red dashed circle. The interface includes a menu bar, a toolbar, and several panels:

- Information Panel:**
  - Author: NAPA
  - Documentation Name: OCX Export D-BULKER/A
  - Organization: NAPA
  - Originaling System: NAPA Steel
  - ▼ Principal Particulars:
    - AP Pos: 0 mm
    - Block Coefficient: 0.836 Dimless
    - Deepest Equilibrium WL: 14.5 Knots
    - Design Speed: 21950 mm
    - FP Pos: 21950 mm
    - Freeboard Deck Height: 36000 mm
    - Freeboard Length: 21800 mm
    - Heavy Ballast Draught: 21950 mm
    - Length of Waterline: 36000 mm
    - LPP: 21800 mm
    - Moulded Breadth: 21800 mm
- Property Window (highlighted):**
  - ▼ Element:
    - Type: [PLATE]
    - GUID: d59255e4-f1c3-45f1-a511-1ef1f0cf...
    - ID: nplcid1275
    - Name: P:24/DECK
  - Material Reference:
    - GUIDRef: fccb62e5-4c37-4a5c-88c7-21d808ff...
    - LocalRef: nplcid7
    - RefType: ocx:Material
  - ▼ Material:
    - Grade: T36
    - ID: nplcid7
    - Name: HT36
    - Thickness: 23 mm
  - ▼ Physical:
    - Center of Gravity: 117.96, -13.3605, 21.3093
  - ▼ Class Data:
    - Approval Status: Reviewed

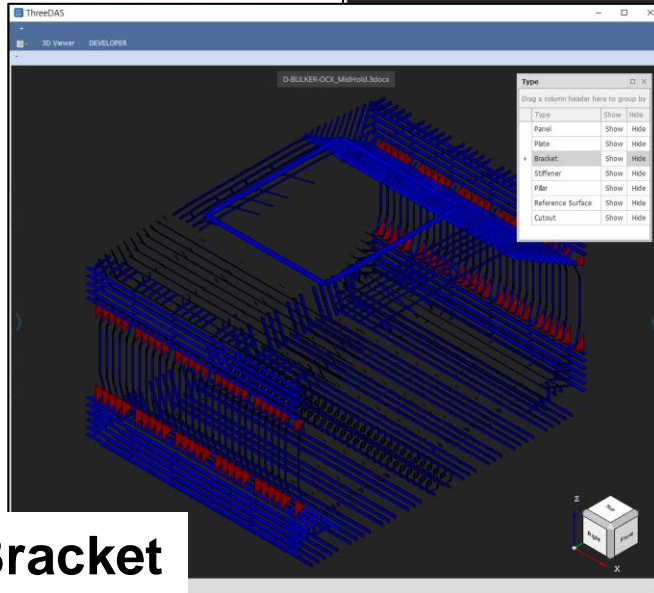


**Transparency 20%  
to Plates**

## Reference Surface

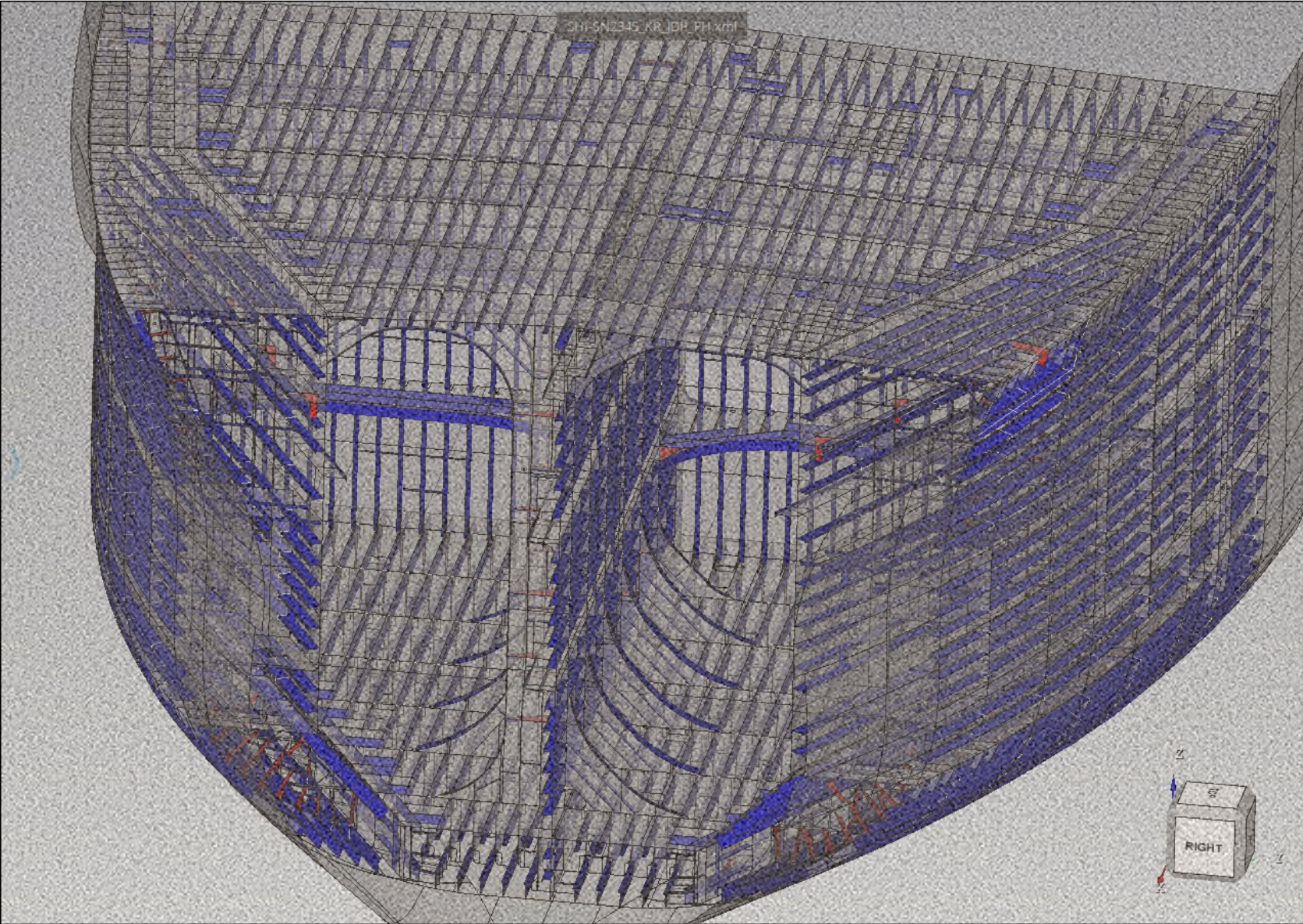


## Plate



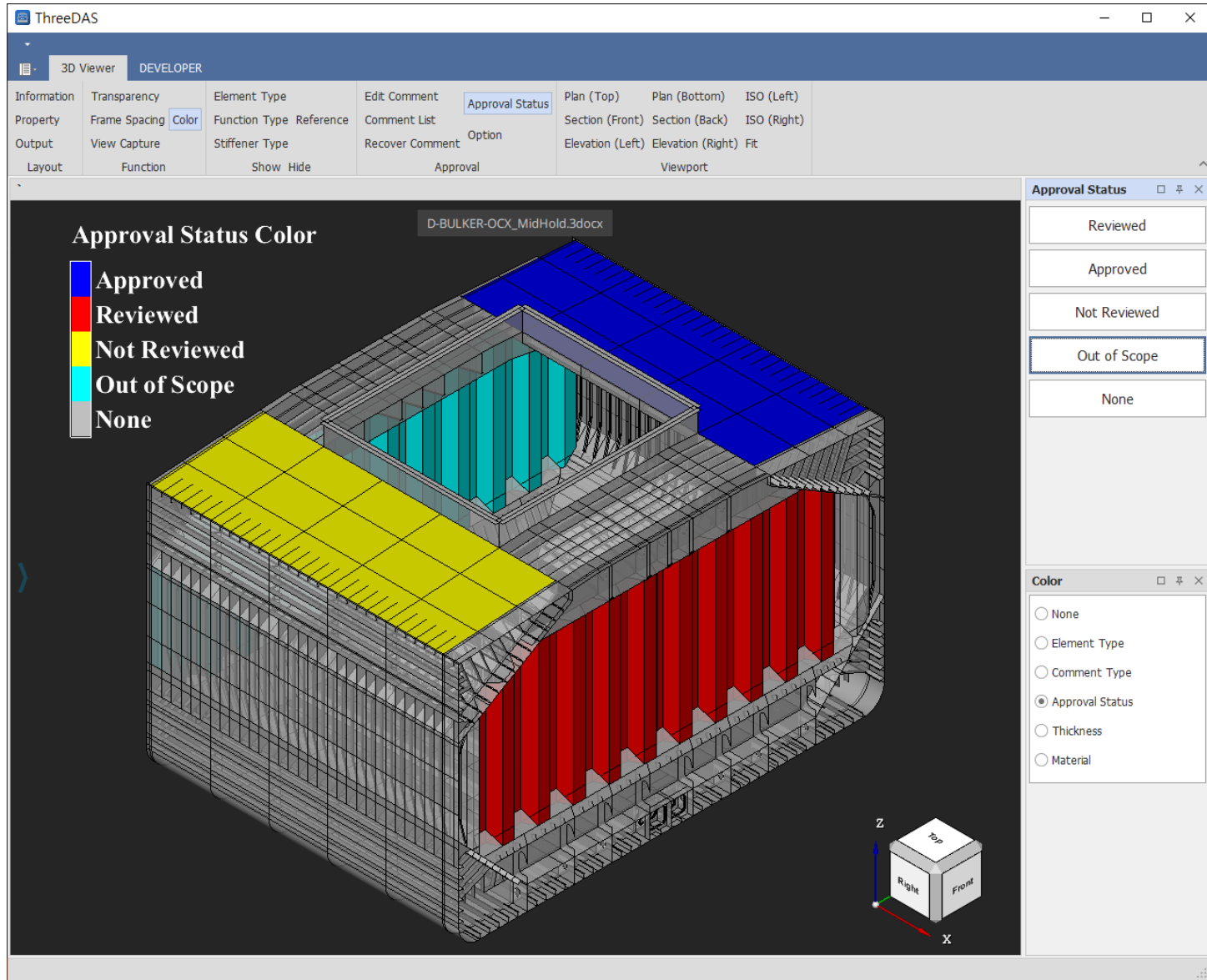
## Stiffener & Bracket

# Shipyard 3D OCX Model



# **Functions**

**for Approval Engineer**





ThreeDAS  
3D Viewer DEVELOPER

D-BULKER-OCX\_MidHold.3docx

**Comment Color**

- H Comment
- C Comment
- To be Resubmitted
- Information
- Others

[H] The Deck Transverse is inconsisten with web frame #73.

[H] Added carlings or submit longitudinal buckling calculation for L.No. 51 ~ 55.

[C] Edge grinding is necessary. \Picture}

[C] 350x100x12/17 AH or submit a scantling calculation (deep tank)

**Comment List**

Index	Type	Comment
1	H	The Deck Transverse is inconsisten with web frame #73.
2	H	Added carlings or submit longitudinal buckling calculation for L.No. 51 ~ 55.
3	C	Edge grinding is necessary. \Picture}
4	C	350x100x12/17 AH or submit a scantling calculation (deep tank)

**Show/Hide Comment**

- [H] H Comment
- [C] C Comment
- [R] To be resubmitted
- [I] Information
- [O] Others

Color by Comment Type

Color by Element Type

Comment Text

Comment Color Bar

**Color**

- None
- Element Type
- Comment Type
- Approval Status
- Thickness
- Material

**Output**

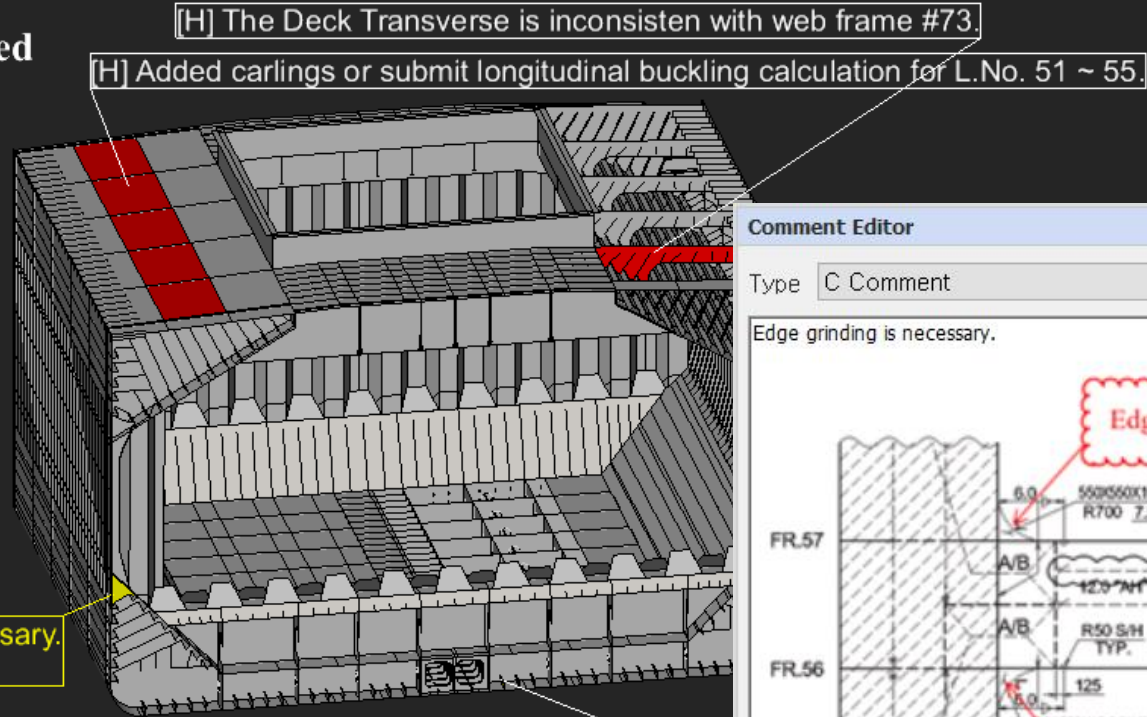
2: File Path= D:\WINDOWS\BACKGROUND\D-BULKER-OCX\_MidHold.3docx

3: STT File Save Done - D:\WINDOWS\BACKGROUND\NAPA-D-BULKER-OCX\_MidHold.stt

## Comment Color

- H Comment
- C Comment
- To be Resubmitted
- Information
- Others

D-BULKER-OCX\_MidHold.3docx



[H] The Deck Transverse is inconsisten with web frame #73.

[H] Added carlings or submit longitudinal buckling calculation for L.No. 51 ~ 55.

[C] Edge grinding is necessary.  
{Picture}

[C] 350x100x12/17 AH or submit a scantling calculation (deep tan

**Comment Editor** [X]

Type: C Comment

Edge grinding is necessary.

Save



# — Video Demo

- Conclusion
  - KR develops 3D model-based structural design approval system.
  - It includes basic functions for approval and viewing 3D model.
  - It supports 3D OCX Format.
  - KR collaborates with Korean shipyard to implement OCX interface.
  
- Future Works
  - Pilot test between Korean Register and Shipyard for 3d model-based approval.
  - Implementation of OCX Interface for \*SeaTrust-HullScan.
    - \* SeaTrust-HullScan: Korean Register S/W for the rule calculation



# — Thank you

—  
Korean Register  
Seok-ho Byun  
shbyun1@krs.co.kr