



**SSIWSC 2024**

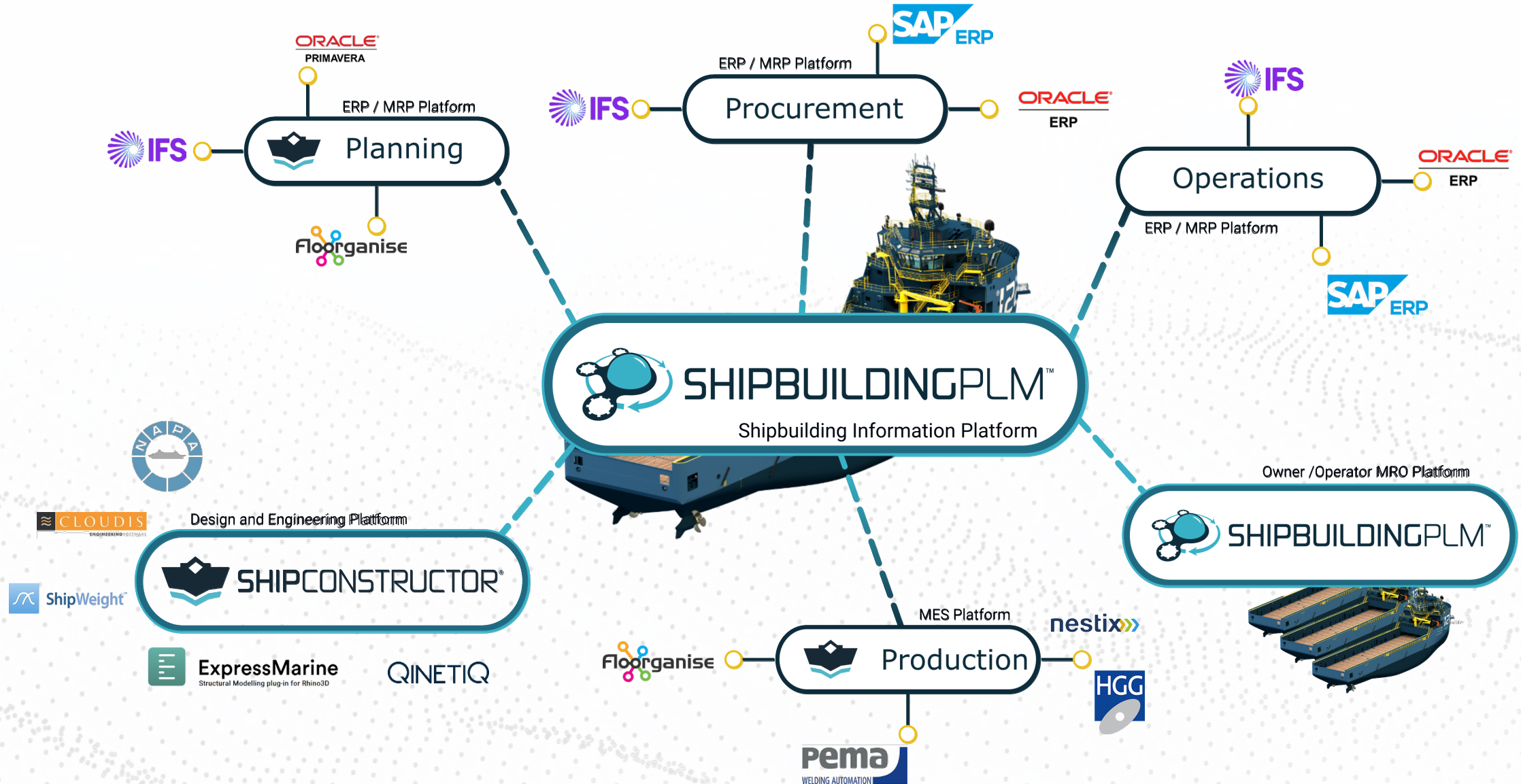
Design. Build. Maintain. Connect.

# Getting your Project Ready for ShipbuildingPLM

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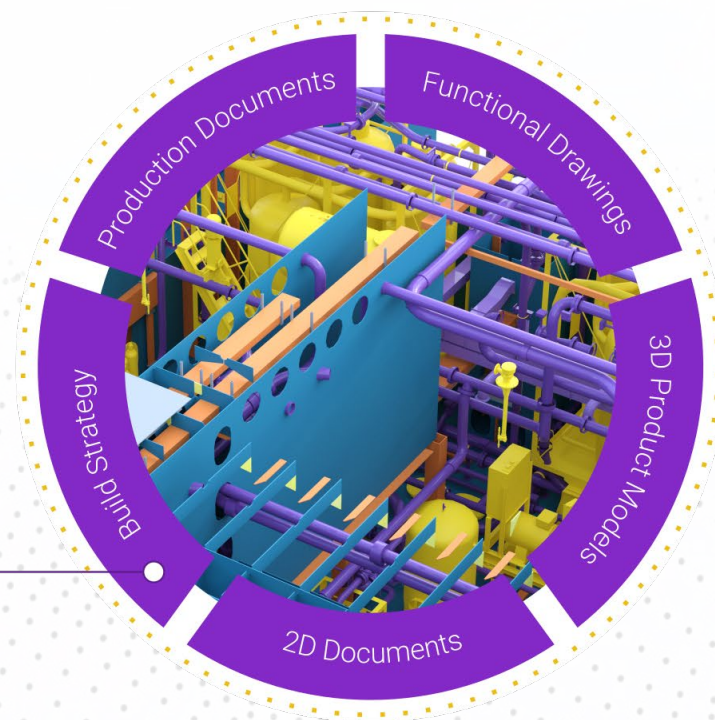


# An Open Digital Shipbuilding Platform



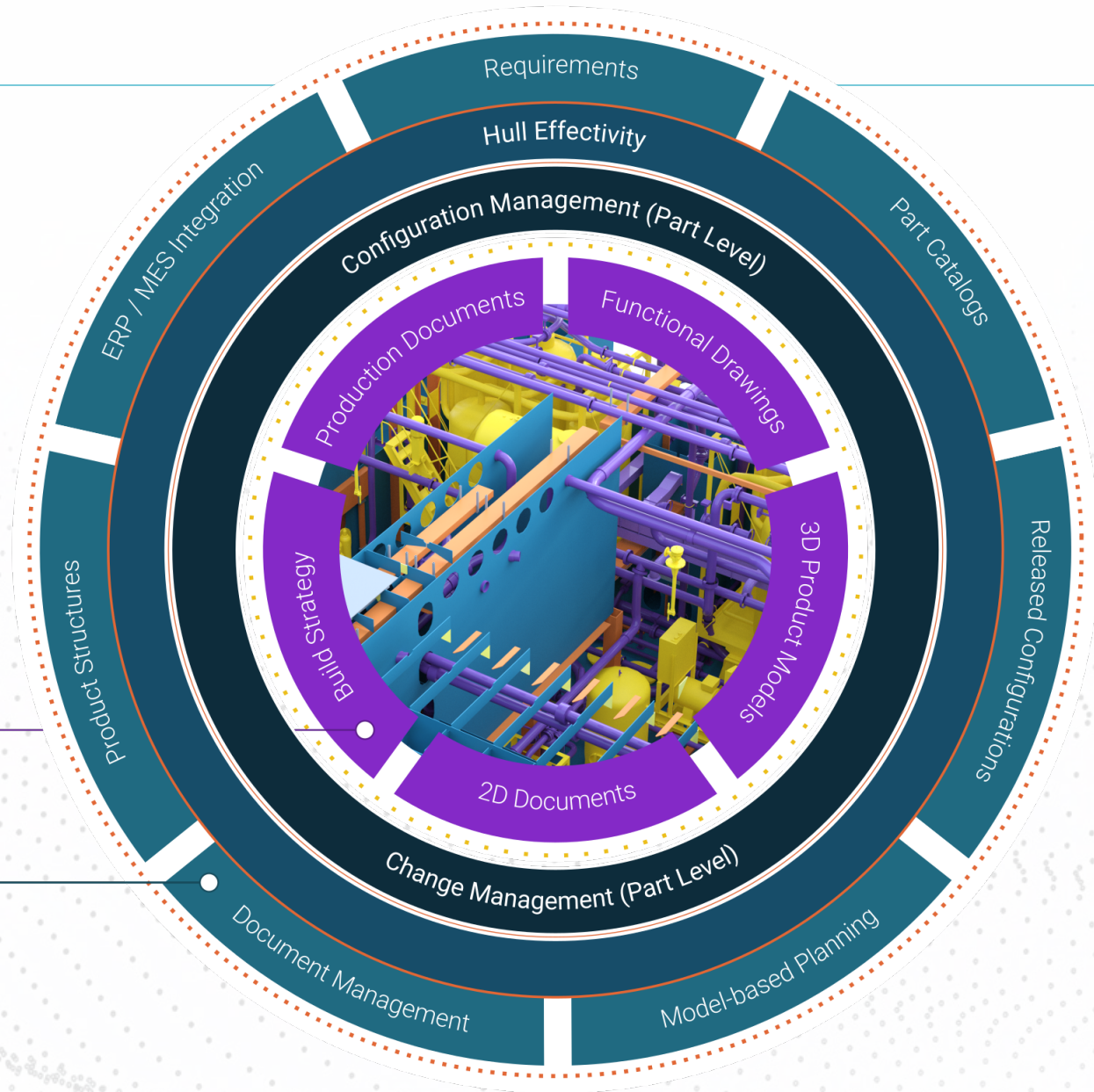


# Platform Scope



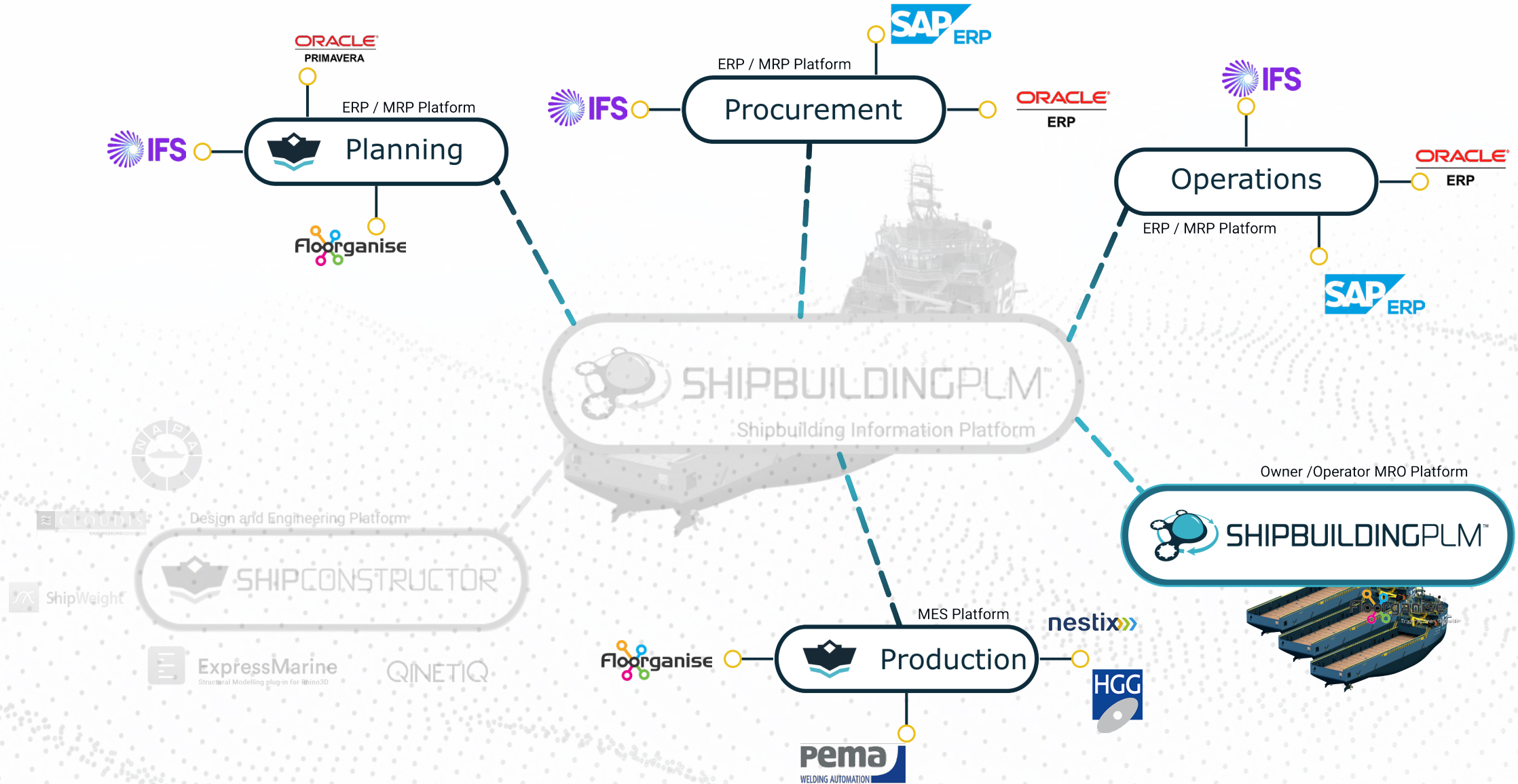
# Platform Scope

The world's first and only  
*shipbuilding-specific* PLM  
platform





# An Open Digital Shipbuilding Platform



# Downstream Considerations

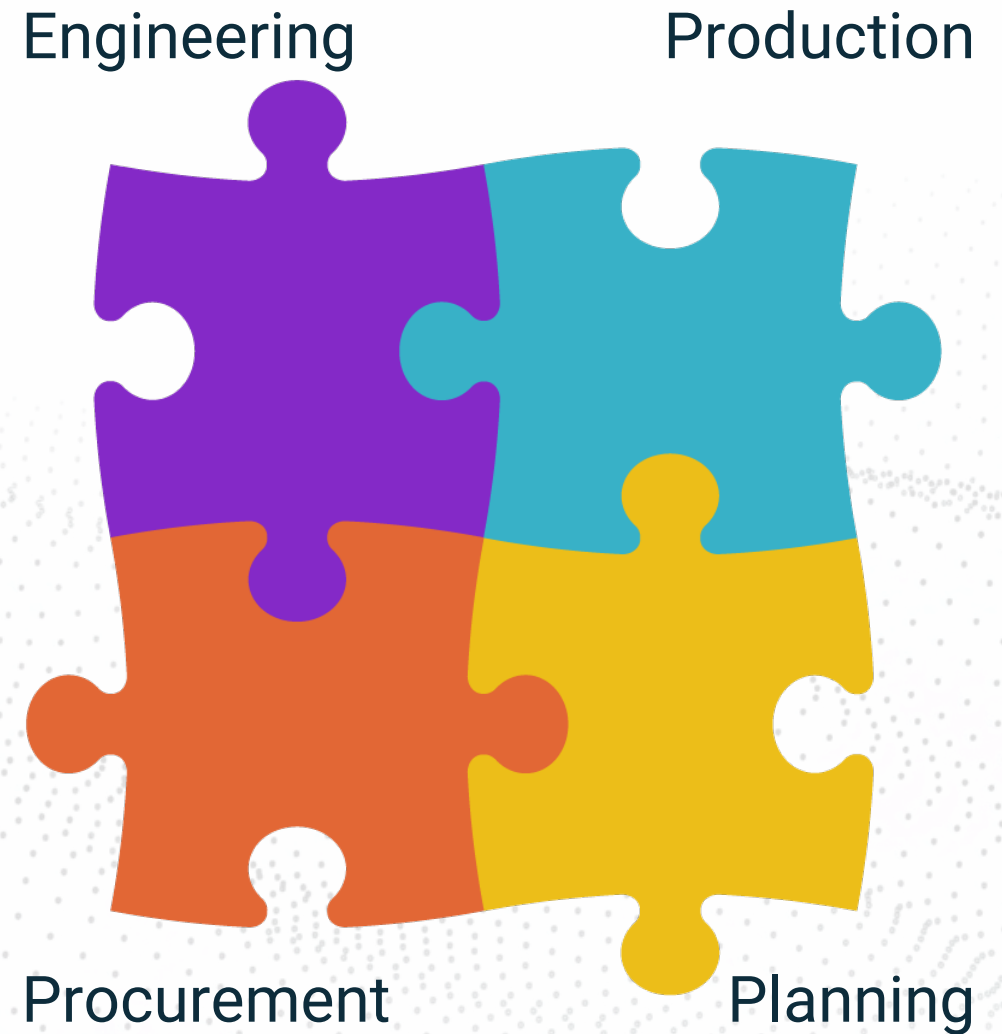
- Consider how each stakeholder downstream searches for information
- What search criteria do they need?
- What attributes do they need?
- What information do they need to see?
- How are work orders prepared?
- How granular does the information need to be?





# Compromise

- Engineering likely doesn't have the resources to fully support all downstream activities.
- Departments to coordinate how to find a balance between wants and needs.





# Tips and Strategies

Getting your ShipConstructor project ready



# Non-ShipConstructor Objects

3D Solids do not have

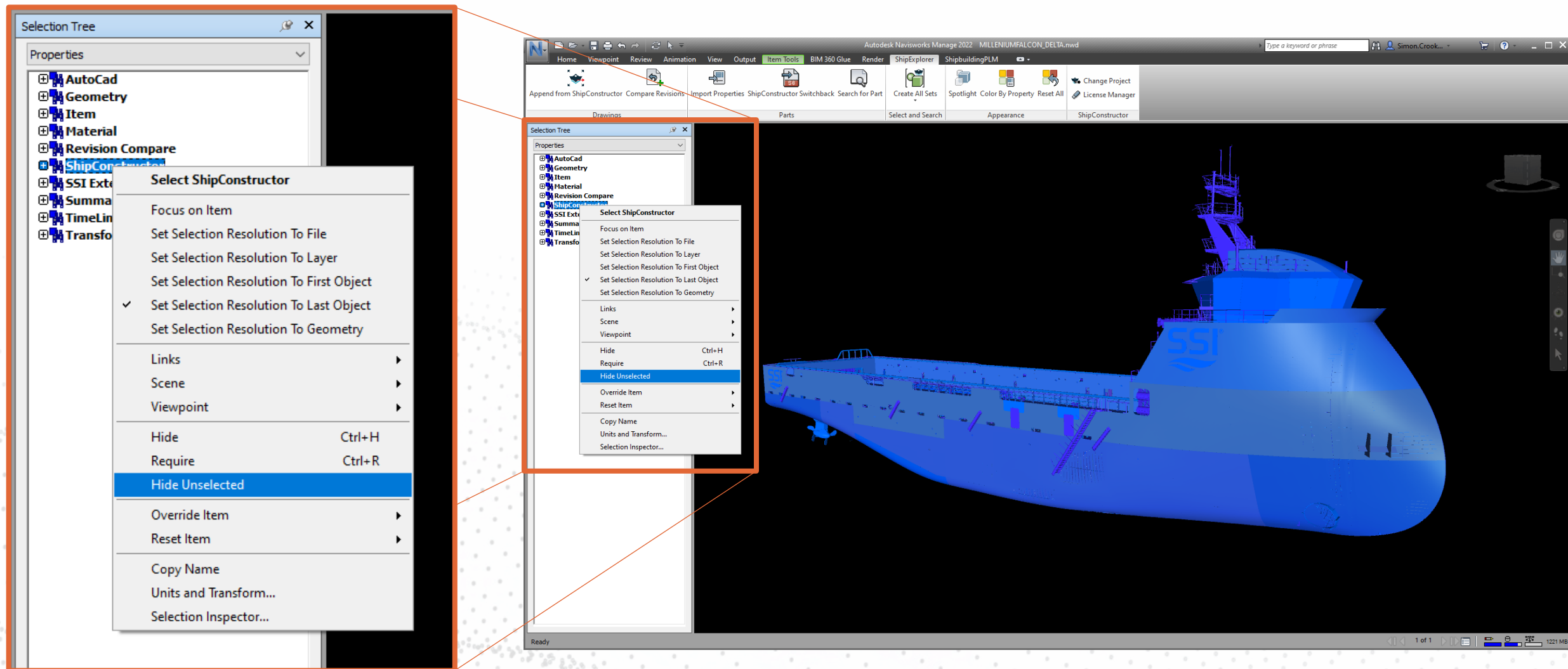
- 🌊 Intelligent properties
- 🌊 Weight and Centre of Gravity

There are different strategies for ensuring all objects are ShipConstructor parts....



**No 3D Solids!**

# How many non-ShipConstructor objects do you have?





# Cost / Benefit Considerations

## Design and Construction Digital Twin VS Sustainment Digital Twin

### Design and Build Digital Twin

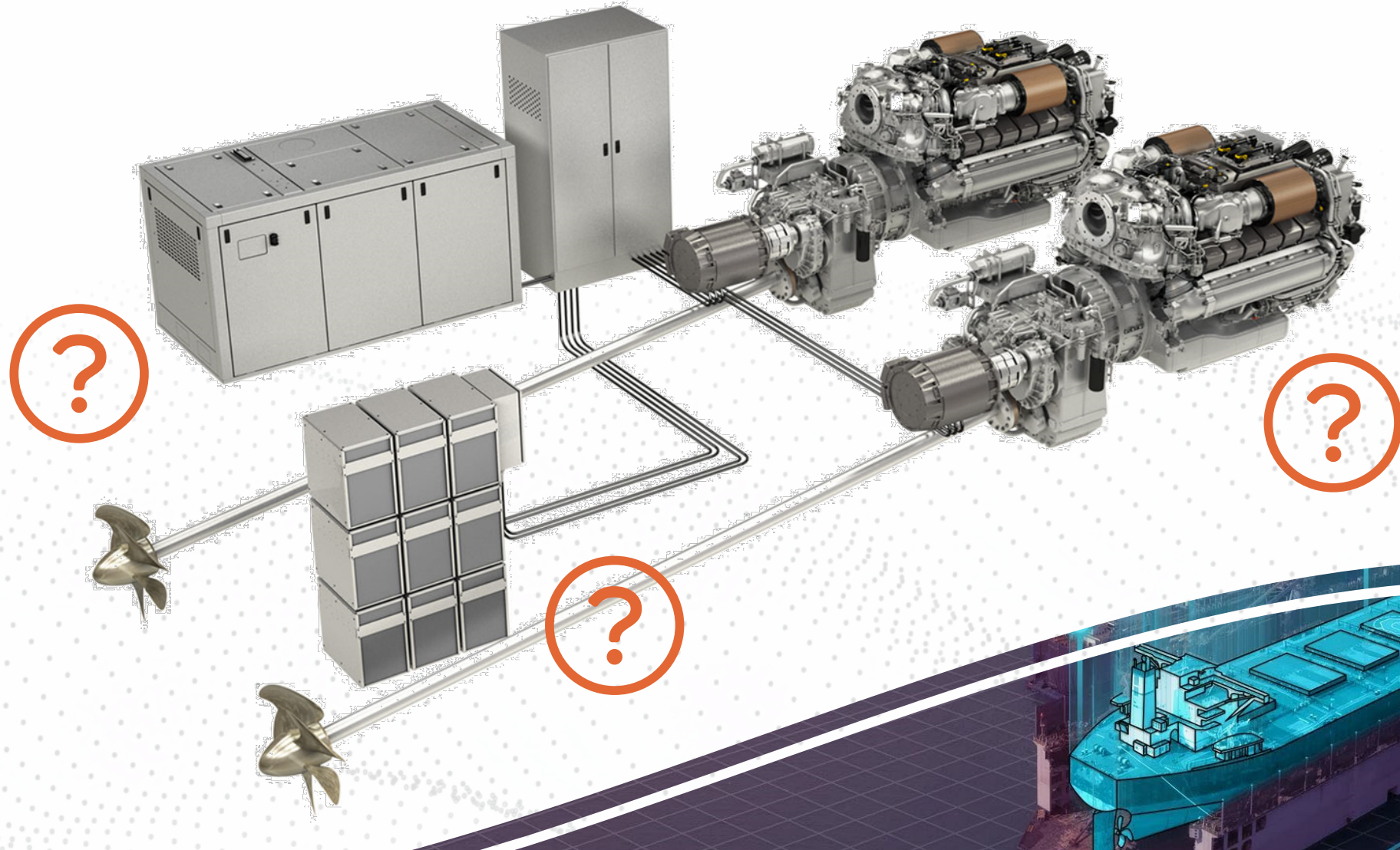
- Fabrication details of individual parts
- Assemblies
- Cut lists
- Nests
- Spools

VS

### In-Service Digital Twin

- Arrangements
- Class Drawings
- Ship Work Breakdown Structure (SWBS)
- Systems and Branches
- Individual components (valves, pumps, etc.)
- As-is models

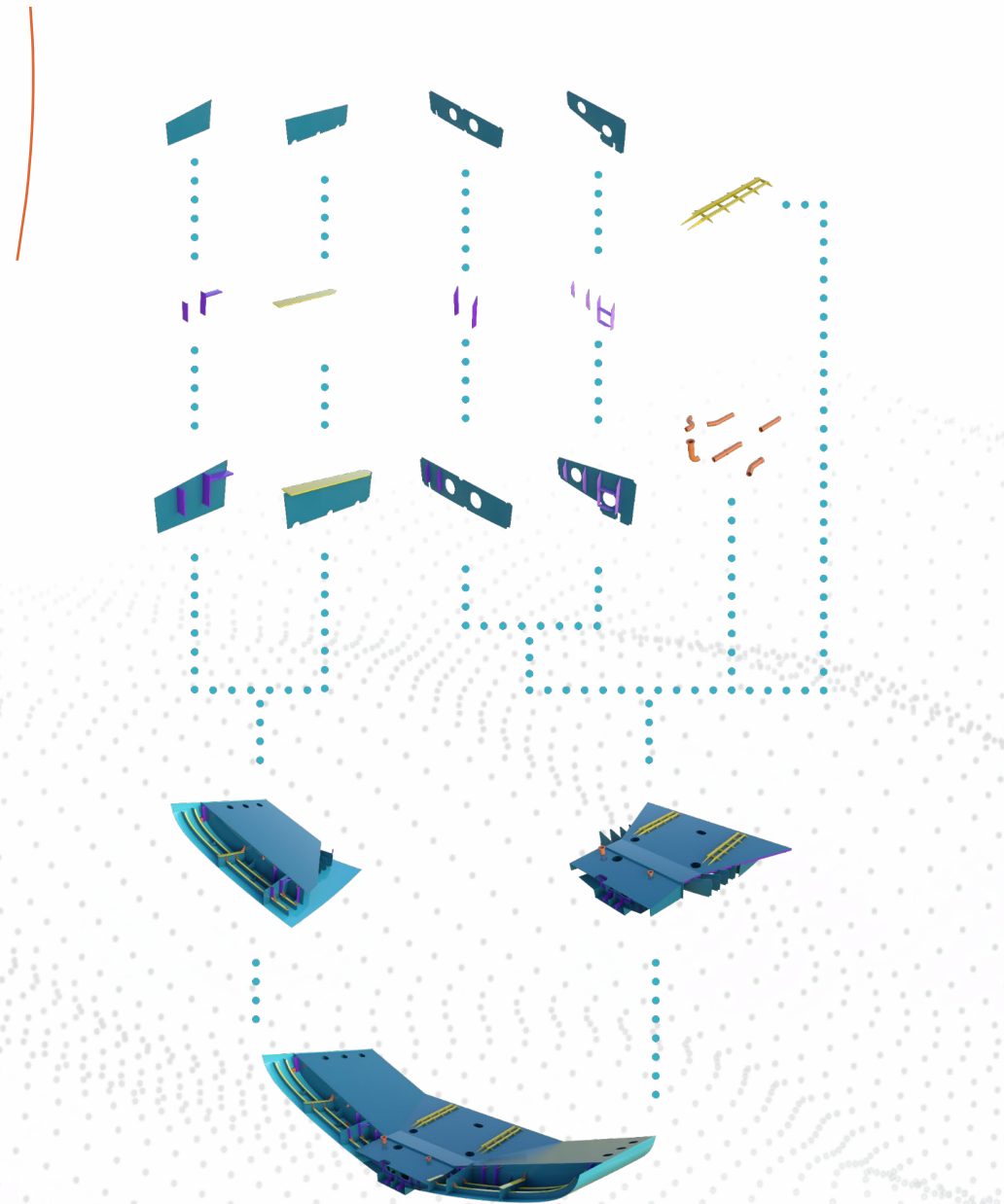
# What really needs to be converted?





# All parts should be assigned to the Build Strategy

- The Build Strategy (Primary Product Hierarchy) reflects how the ship is built.
- Every parts has a place in the build strategy.
- The Build Strategy drives drawing generation, reports, part names and visualizations.
- The same strategy is used throughout PLM for finding information.



# User Defined Attributes

## Parts

- Master Catalog Numbers
- Does the part require commission testing Y/N

## Part Instance

- Compartment
- Unique TAG number

## Assemblies

- Assembly is flat panel or curved plate
- Assembly is to be assembled on the ship



# Compartments

New FolderNew CompartmentNew VolumeDeletePick MinPick MaxPick ObjectSaveRefreshImport

Export	Name	Show	Min L	Min T	Min V	Max L	Max T	Max V
Enter F	Enter Filter Text	Enter	Enter Filter Tex	Enter Filter Te	Enter Filter Te	Enter Filter Tex	Enter Filter Tex	Enter Filter Tex
<input type="checkbox"/>	MILLENIUMFALCON_DELTA_23	<input type="checkbox"/>						
<input type="checkbox"/>	Compartments	<input type="checkbox"/>						
<input type="checkbox"/>	ZONE A	<input type="checkbox"/>						
<input type="checkbox"/>	ZONE B	<input type="checkbox"/>						
<input type="checkbox"/>	DECK 01	<input type="checkbox"/>						
<input type="checkbox"/>	DECK 02	<input type="checkbox"/>						
<input type="checkbox"/>	DECK 1	<input type="checkbox"/>						
<input type="checkbox"/>	1BA1	<input type="checkbox"/>	58450.0	5100.0	8010.0	63000.0	7700.0	10900.0
<input type="checkbox"/>	(60725,5700,9455)	<input type="checkbox"/>	58450.0	5100.0	8010.0	63000.0	6300.0	10900.0
<input type="checkbox"/>	(61425,7000,9455)	<input type="checkbox"/>	59850.0	6300.0	8010.0	63000.0	7700.0	10900.0
<input type="checkbox"/>	1BA2	<input type="checkbox"/>	58450.0	-10000.0	8010.0	63000.0	-5100.0	10900.0
<input type="checkbox"/>	1BA3	<input type="checkbox"/>	58450.0	7700.0	8010.0	63000.0	10000.0	10900.0
<input type="checkbox"/>	1BB1	<input type="checkbox"/>					5100.0	10900.0
<input type="checkbox"/>	1BB2	<input type="checkbox"/>					2100.0	10900.0
<input type="checkbox"/>	1BC1	<input type="checkbox"/>					7700.0	10900.0
<input type="checkbox"/>	1BC2	<input type="checkbox"/>					7700.0	10900.0
<input type="checkbox"/>	1BY0	<input type="checkbox"/>					0000.0	10900.0
<input type="checkbox"/>	1BZ0	<input type="checkbox"/>					8050.0	13800.0
<input type="checkbox"/>	DECK 3	<input type="checkbox"/>						

SCONPIPEBENT

Part Attributes

CG Pointx=30869.0000, y=-2610.0...

Compartments4DA0

Fill Ratio1.0000

Insulations<None>

Part CatalogNo Catalog

Part Name322-BD-8

Connected Parts

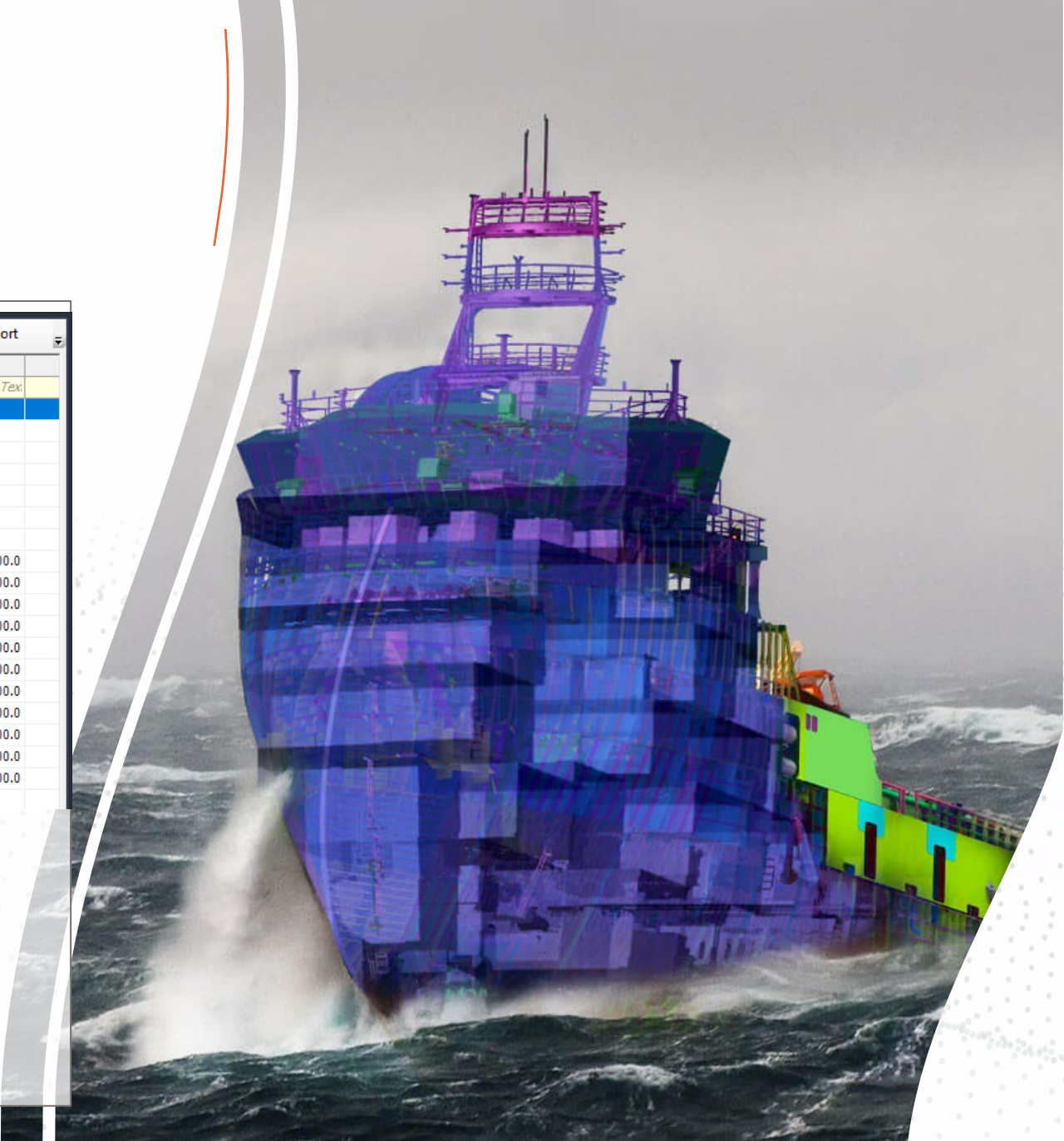
End 1 - Conn. 1...A885

End 2 - Conn. 1...A971

End 3 - Conn. 1...322-BD-2

Ends

End 1 Green0mm





# Drawing Generation

## Information Source

Create all drawing deliverables from the primary product hierarchy. (Build Strategy / PWBS – Primary Work Breakdown Structure)

3D visualizations and drawings share the same information source.

## Drawing Templates

Consistent information improves the PLM experience

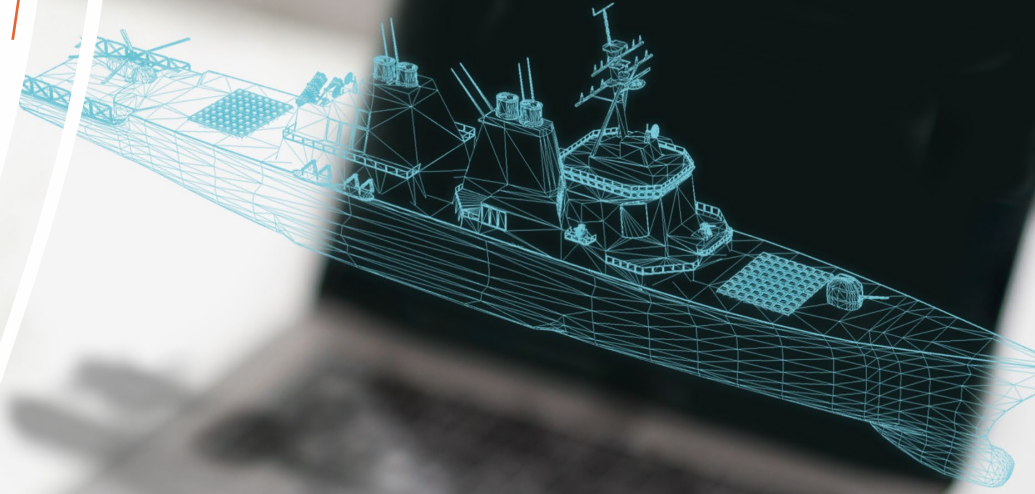
Create a template for each assembly stage, templates for each stage contain the information relevant at each stage. Pre-fabrication and installation carry different levels of information.

Populate title blocks and notes with database keywords

# Product Model Clean up

Run an automated clean-up operation to

- Improve drawing performance
- Remove M-Links (X-References)
- Remove PartViews
- Zoom Extents
- Standardize appearance
  - Shade styles
  - Display options
- Improve Thumbnails

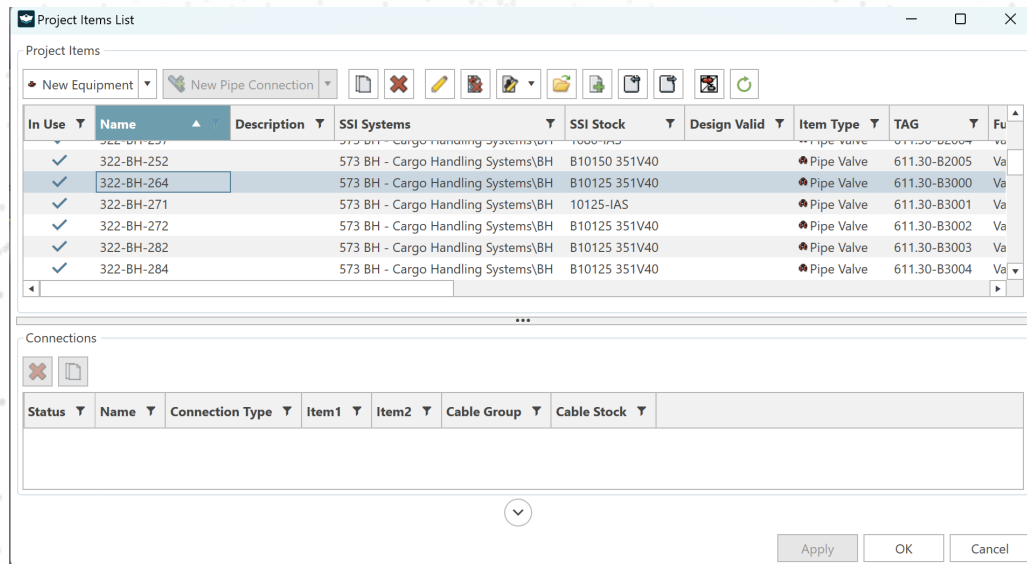




# Using ShipConstructor Modeling best practices

## Maintain the Digital Thread

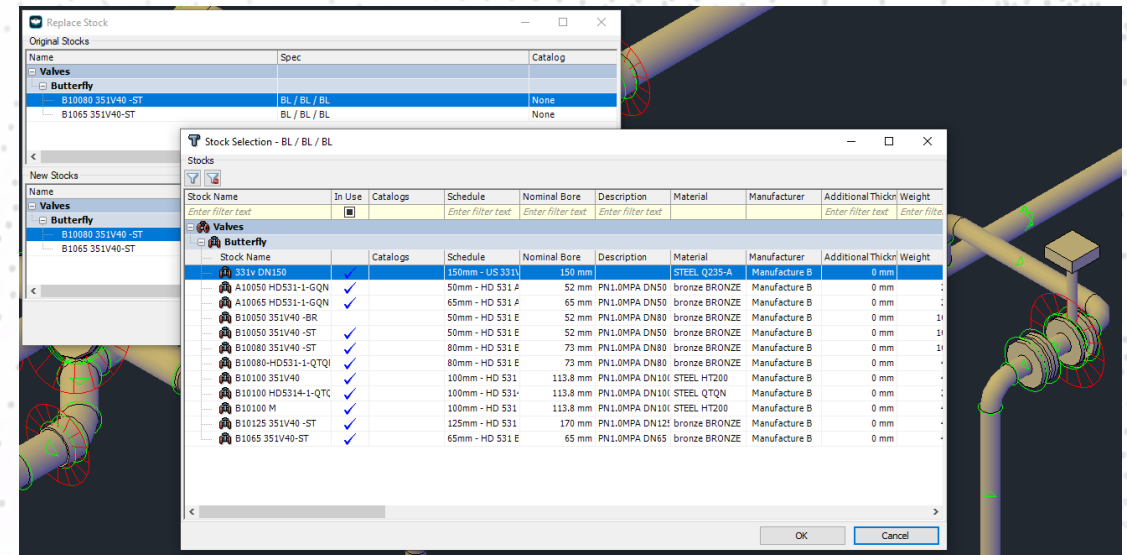
Ensure equipment and pipe parts are inserted from the PIL to associate them with the Functional part instance.



*Insert PIL Equipment Item (SCEQUIPPILINSERT)*

## Capture change

When changing a part, avoid the temptation to delete it and recreate. Modify or replace the part so the change is tracked.



*Replace Stocks (SCHEPREPLACE)*

# PLM Readiness Checklist

Check your organization is ready

1				03 = HIGH	
			effort has been factored into the implementation schedule		
24					
	PS_4		As part of the implementation scope, a clear training strategy has been agreed between SSI and the Shipyard for the following Shipyard staff. - End users - System Setup and Admin Users - Shipyard trainers (train the trainers)	0	Provide a link to document which contains the training strategy for the ShipbuildingPLM implementation effort.
25					
	PS_5		Shipyard SMEs needed for process definition and requirements capture have been identified and will be available during the ShipbuildingPLM implementation effort.	0	List of Shipyard SMEs allocated for the project and their expertise.
26					
	PS_6		Both Shipyard and SSI Project Organizational charts are defined and communicated, as well the required Steering Committee participants.	0	List / links to Shipyard and SSI project organizational charts and Steering Committee participants. Need to list: 1. Executive Sponsor 2. Executive Steering Committee 3. Design/Technical Steering Committee 4. Decision Maker for each Discipline
27					
28	HIGH-LEVEL PROJECT SCOPE AND SCHEDULE READINESS			0	TARGET SCORE = 12
29	PROJECT DATA READINESS				
	DA_1		The Shipyard is aware of SSI's ShipConstructor project guidelines for ShipbuildingPLM and has made the necessary adjustments, or planned within the project schedule the required LOE and resources to implement the required ShipConstructor project adjustments, so that the ShipConstructor data targeted for PLM use can be used effectively within ShipbuildingPLM	0	Document any required work by the Shipyard to implement necessary ShipConstructor project adjustments and possible schedule impacts.
30					
			Any legacy or 3rd party data that needs to be imported into ShipbuildingPLM as part of the implementation scope, has been mapped for import (e.g. Third Party CAD Model		Document all legacy and 3rd part data that will need to be imported into ShipbuildingPLM and the required work to prepare this data to be processed into ShipbuildingPLM





# Questions?

Thank you!