

DHI Vessel Hulls Catalogue

Data sheets for different vessels in
MIKE 21 Mooring Analysis





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The expert in **WATER ENVIRONMENTS**

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Data sheets for different vessels

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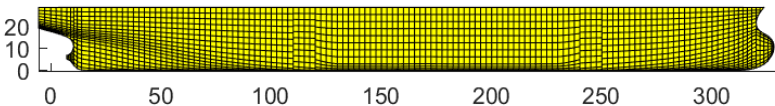
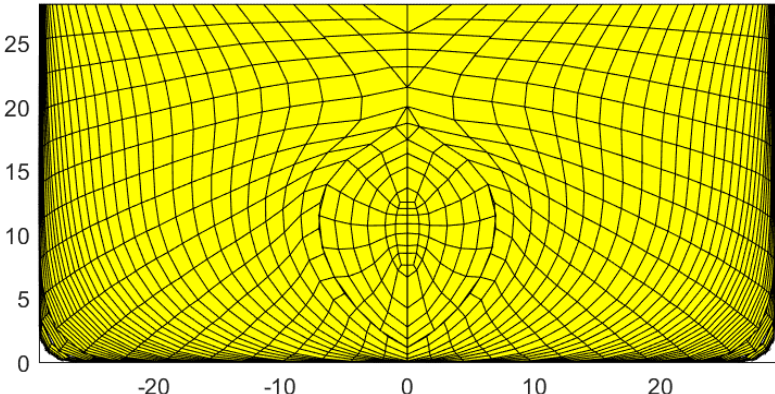
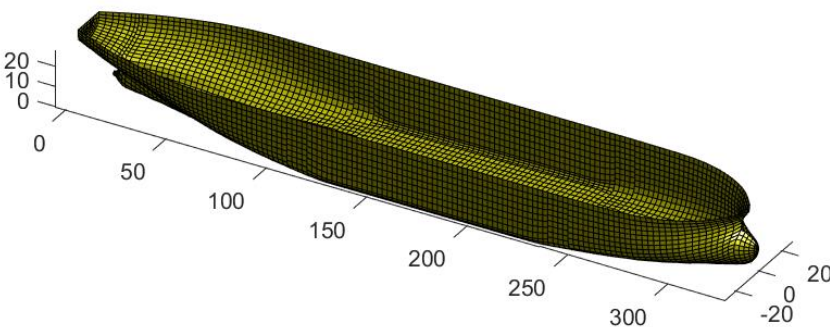
1 Introduction

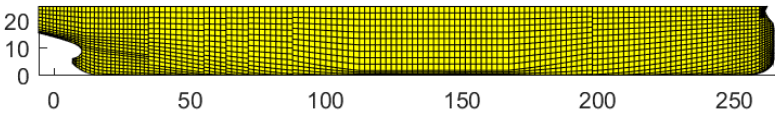
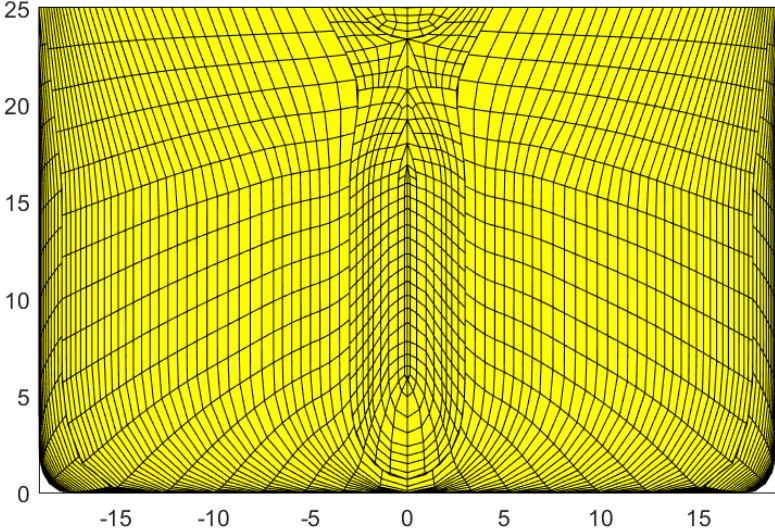
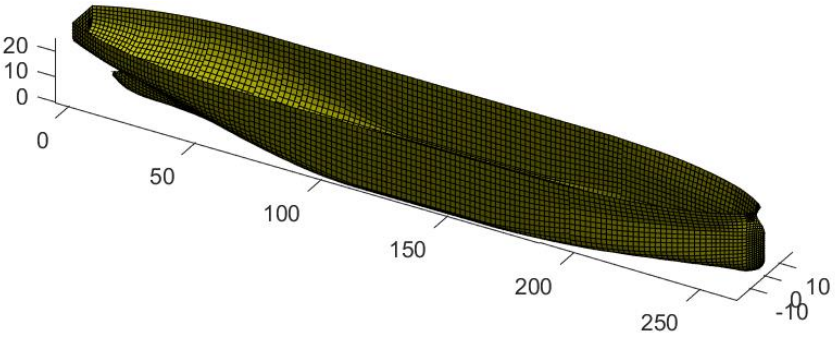
DHI provides a selection of 12 vessels of different sizes together with the installation of MIKE 21 Mooring Analysis (MA) for free. In addition, DHI obtains a comprehensive collection of additional vessels, which can be purchased from DHI and which cover different sizes and vessel classes.

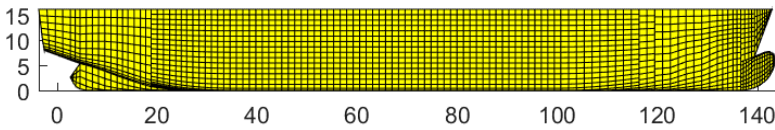
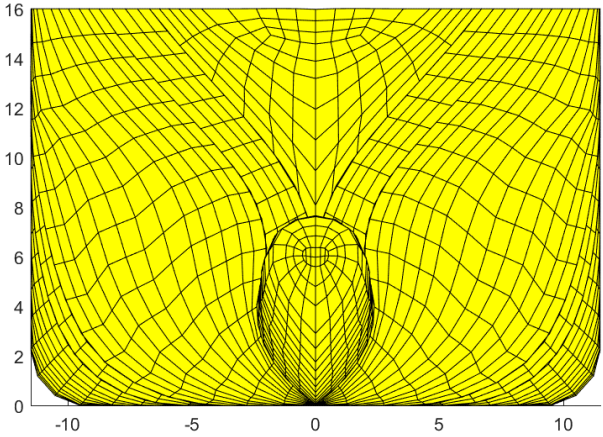
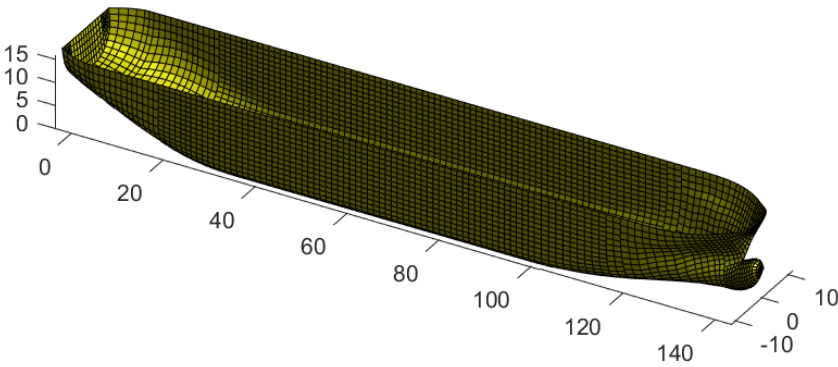
Chapter 2 in this document contains the data sheets of the free vessel hulls and Chapter 3 contains the data sheets for the vessel hulls that can be purchased.

2 Free Vessel Hulls

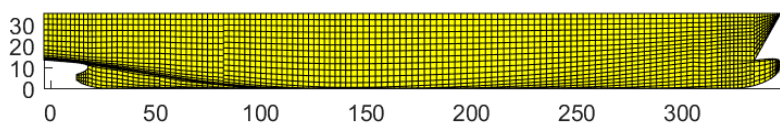
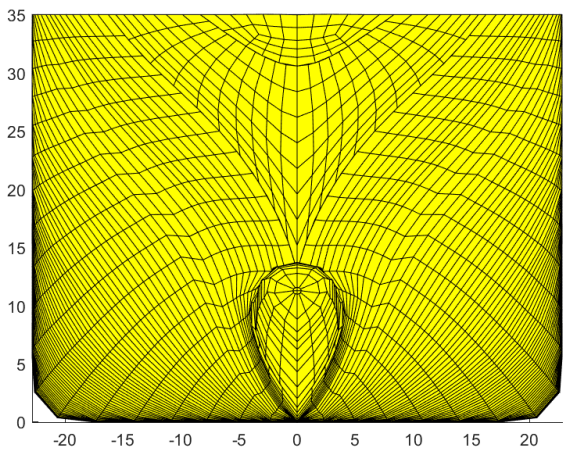
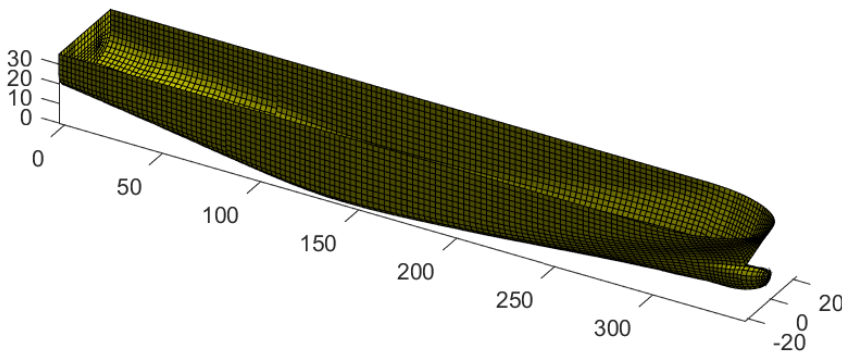
2.1 Bulk Carriers

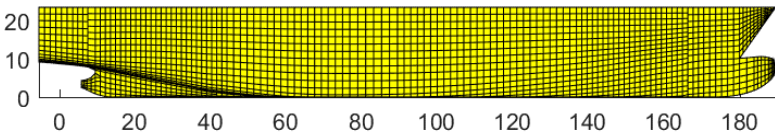
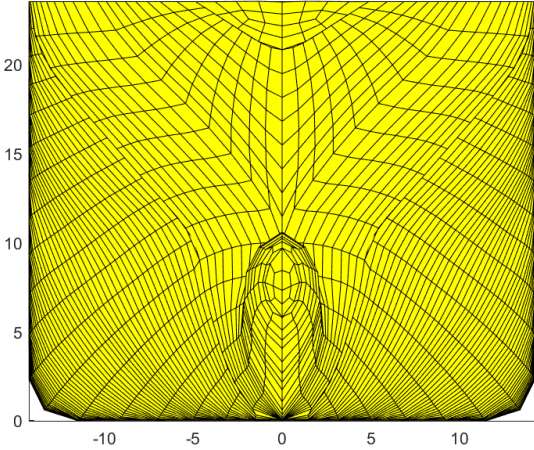
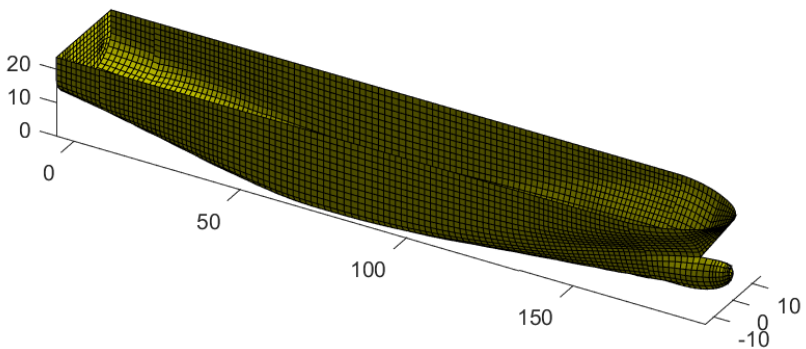
Characterisation of Vessel for Wave Response Analysis	
Vessel Characteristics	Bulk Carrier 1
Hull Name	Bulk Carrier 1
Type	Bulk Carrier, Conventional Bow
LOA	333.6m
Beam	58.1m
Max Height	28m
Longitudinal Profile	
Lateral Profile	
3D View	
Date	November 2016.

Characterisation of Vessel for Wave Response Analysis	
Vessel Characteristics	Bulk Carrier 2
Hull Name	Bulk Carrier 2
Type	Bulk Carrier, Cylindrical Bow
LOA	269.98m
Beam	38.01m
Max Height	25.02m
Longitudinal Profile	
Lateral Profile	
3D View	
Date	November 2016.

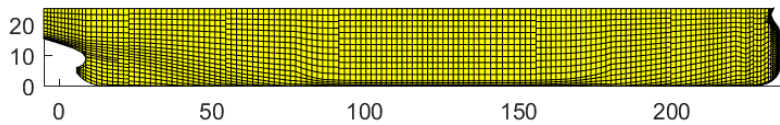
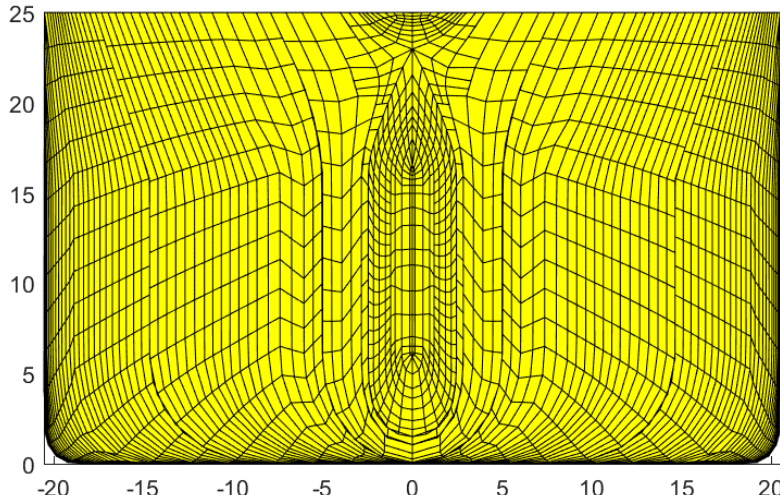
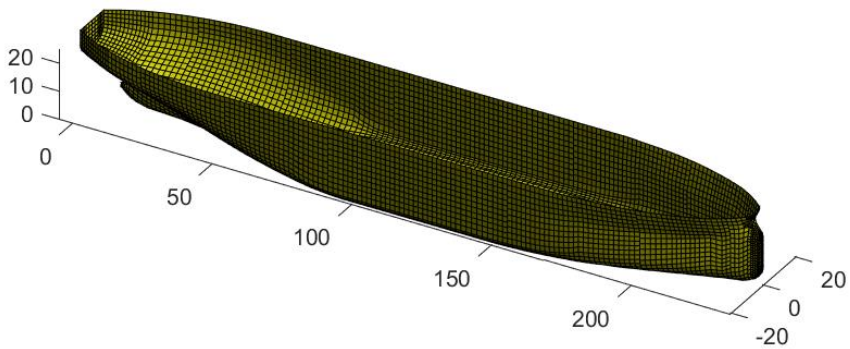
Characterisation of Vessel for Wave Response Analysis	
Vessel Characteristics	Bulk Carrier 3
Hull Name	Bulk Carrier 3
Type	Bulk Carrier, Conventional Bow
LOA	147m
Beam	23m
Max Height	16m
Longitudinal Profile	 A 2D wireframe plot showing the longitudinal profile of the vessel hull. The vertical axis represents height in meters, ranging from 0 to 15. The horizontal axis represents the longitudinal position in meters, ranging from 0 to 140. The plot shows the hull's shape from the bow to the stern, including the deck and bottom structure.
Lateral Profile	 A 2D wireframe plot showing the lateral profile of the vessel hull. The vertical axis represents height in meters, ranging from 0 to 16. The horizontal axis represents the lateral position in meters, ranging from -10 to 10. The plot shows the hull's shape from the starboard to the port side, including the deck and bottom structure.
3D View	 A 3D wireframe plot showing the full hull structure of the vessel. The vertical axis represents height in meters, ranging from 0 to 15. The horizontal axes represent the longitudinal and lateral positions in meters, ranging from 0 to 140 and -10 to 10 respectively. The plot shows the hull's shape from all angles, including the deck, bottom, and side structures.
Date	November 2016.

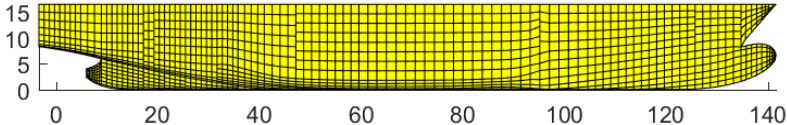
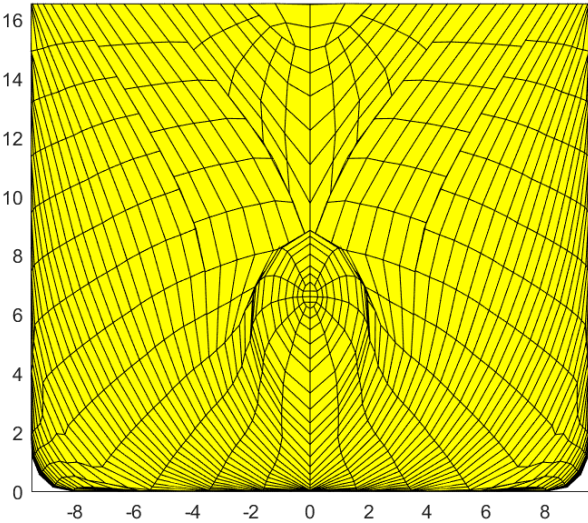
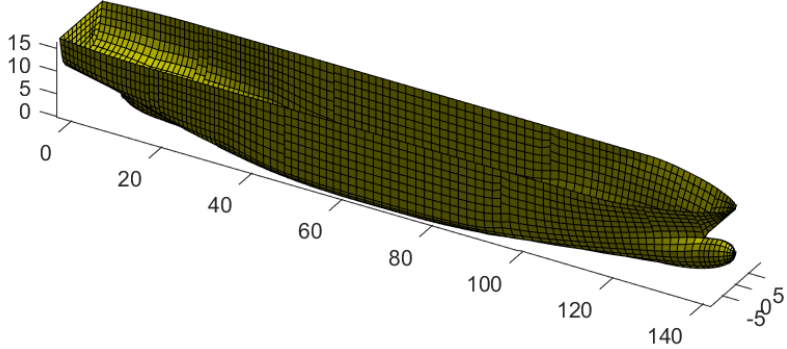
2.2 Container Carriers

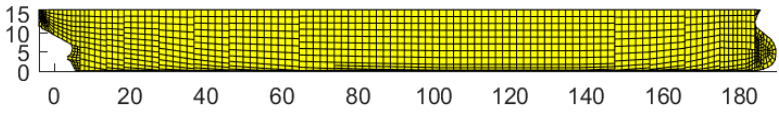
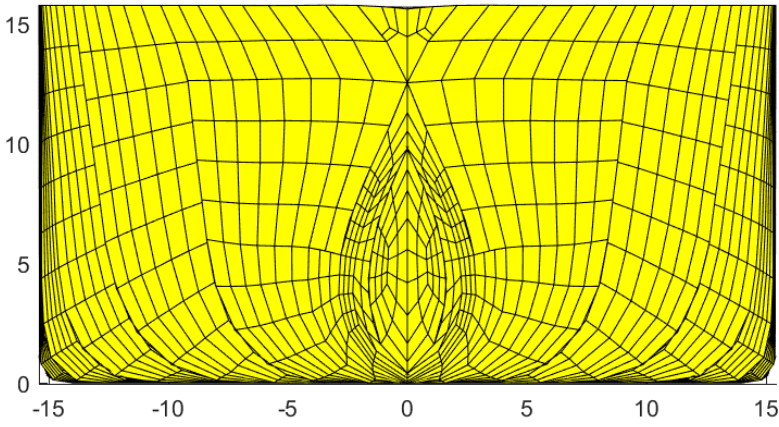
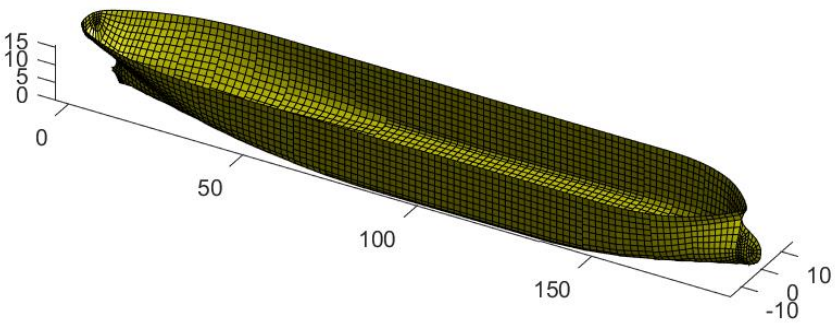
Characterisation of Vessel for Wave Response Analysis	
Vessel Characteristics	Container 1
Hull Name	Container 1
Type	Container
LOA	349.6m
Beam	45.6m
Moulded Depth	35.1m
Longitudinal Profile	
Lateral Profile	
3D View	
Date	November 2016.

Characterisation of Vessel for Wave Response Analysis	
Vessel Characteristics	Container 2
Hull Name	Container 2
Type	Container
LOA	195m
Beam	28.5m
Moulded Depth	23.5m
Longitudinal Profile	 A 2D line plot showing the longitudinal profile of the hull. The x-axis represents the length in meters, ranging from 0 to 180 with increments of 20. The y-axis represents the height in meters, ranging from 0 to 20 with increments of 10. The profile shows a flat bottom, a flat deck, and a vertical hull structure with a slight flare at the stern.
Lateral Profile	 A 2D line plot showing the lateral profile of the hull. The x-axis represents the width in meters, ranging from -10 to 10 with increments of 5. The y-axis represents the height in meters, ranging from 0 to 20 with increments of 5. The profile shows a flat bottom, a flat deck, and a vertical hull structure with a slight flare at the stern.
3D View	 A 3D wireframe model of the hull. The x-axis represents the length in meters, ranging from 0 to 150 with increments of 50. The y-axis represents the width in meters, ranging from -10 to 10 with increments of 10. The z-axis represents the height in meters, ranging from 0 to 20 with increments of 10. The model shows the hull structure in a perspective view.
Date	November 2016.

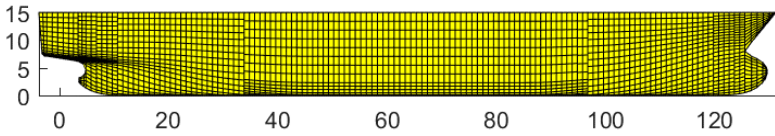
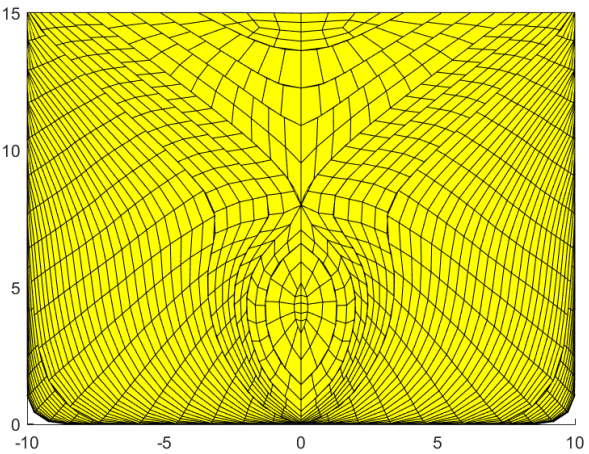
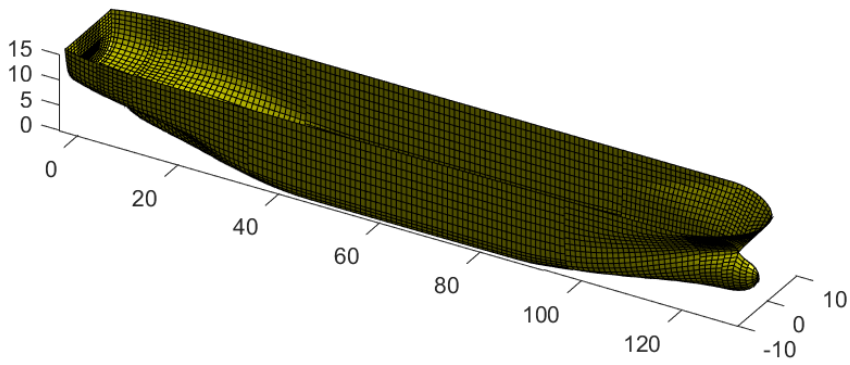
2.3 Tankers

Characterisation of Vessel for Wave Response Analysis	
Vessel Characteristics	Tanker 1
Hull Name	Tanker 1
Type	Tanker, Cylindrical Bow
LOA	239.1m
Beam	41.06m
Moulded Depth	25.02m
Longitudinal Profile	 A 2D line plot showing the longitudinal profile of the hull. The x-axis represents the length in meters, ranging from 0 to 200. The y-axis represents the height in meters, ranging from 0 to 20. The profile shows a smooth, curved hull shape with a slight rise at the bow and a slight dip at the stern.
Lateral Profile	 A 2D line plot showing the lateral profile of the hull. The x-axis represents the width in meters, ranging from -20 to 20. The y-axis represents the height in meters, ranging from 0 to 25. The profile shows a symmetrical, curved hull shape with a slight rise at the bow and a slight dip at the stern.
3D View	 A 3D perspective view of the hull. The x-axis represents the length in meters, ranging from 0 to 200. The y-axis represents the width in meters, ranging from -20 to 20. The z-axis represents the height in meters, ranging from 0 to 20. The hull is shown in a dark green color with a grid pattern.
Date	November 2016.

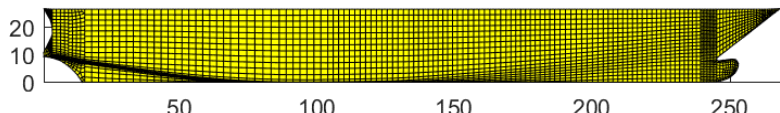
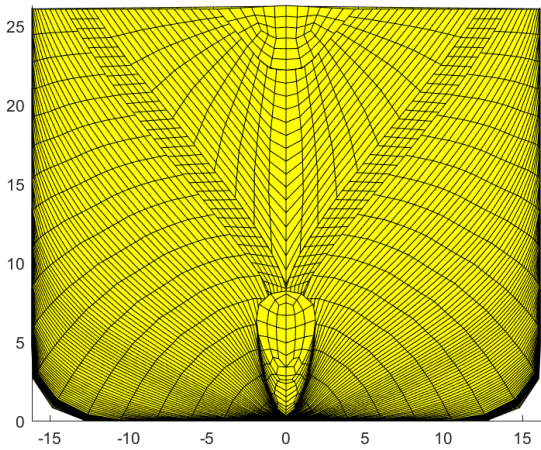
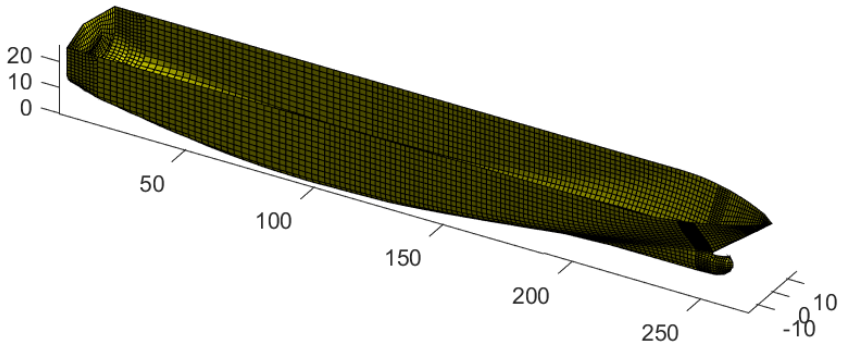
Characterisation of Vessel for Wave Response Analysis	
Vessel Characteristics	Tanker 2
Hull Name	Tanker 2
Type	Tanker, Conventional Bow
LOA	144.1m
Beam	19.01m
Moulded Depth	16.54m
Longitudinal Profile	 A 2D line plot showing the longitudinal profile of the hull. The vertical axis represents height in meters, ranging from 0 to 15. The horizontal axis represents distance in meters, ranging from 0 to 140. The profile shows a flat deck at approximately 16.5m, a hull rising to a depth of about 10m at the bow, and a stern with a small transom.
Lateral Profile	 A 2D line plot showing the lateral profile of the hull. The vertical axis represents height in meters, ranging from 0 to 16. The horizontal axis represents half-beam in meters, ranging from -8 to 8. The profile shows a flat deck at approximately 16.5m, a hull rising to a depth of about 10m at the bow, and a stern with a small transom.
3D View	 A 3D wireframe plot of the hull. The vertical axis represents height in meters, ranging from 0 to 15. The horizontal axis represents distance in meters, ranging from 0 to 140. The depth axis represents half-beam in meters, ranging from -5 to 5. The plot shows the full 3D shape of the hull, including the deck, hull, and stern.
Date	November 2016.

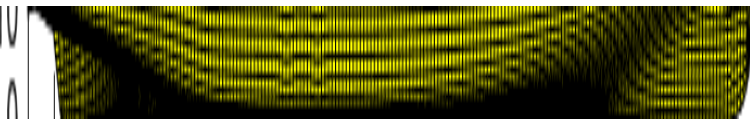
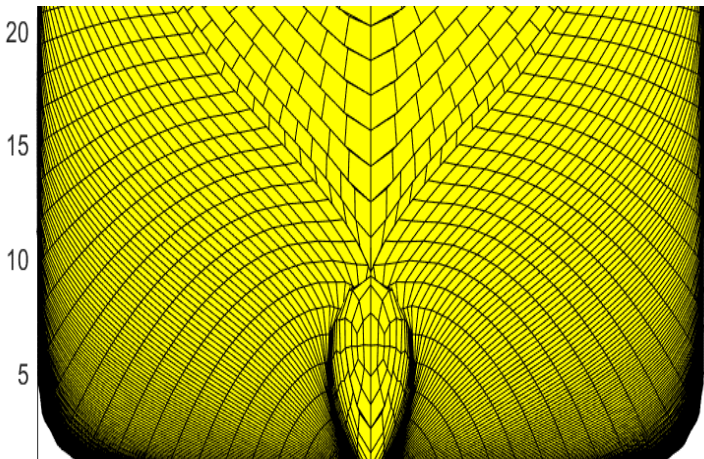
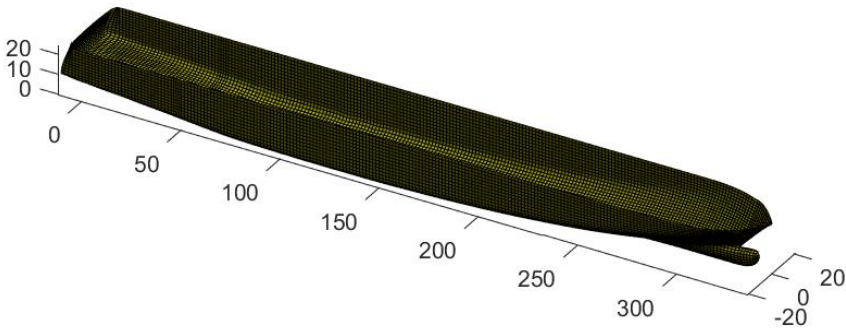
Characterisation of Vessel for Wave Response Analysis	
Vessel Characteristics	Tanker 3
Hull Name	Tanker 3
Type	Tanker, Conventional Bow
LOA	193.4m
Beam	30.8m
Moulded Depth	15.8m
Longitudinal Profile	 A 2D line plot showing the longitudinal profile of the hull. The x-axis represents the length in meters from 0 to 180, with major ticks every 20 units. The y-axis represents the height in meters from 0 to 15, with major ticks every 5 units. The profile shows a conventional hull shape with a flat bottom and a curved upper section.
Lateral Profile	 A 2D line plot showing the lateral profile of the hull. The x-axis represents the width in meters from -15 to 15, with major ticks every 5 units. The y-axis represents the height in meters from 0 to 15, with major ticks every 5 units. The profile shows a symmetrical hull shape with a flat bottom and a curved upper section.
3D View	 A 3D wireframe model of the hull. The x-axis represents the length in meters from 0 to 150, with major ticks every 50 units. The y-axis represents the width in meters from -10 to 10, with major ticks every 10 units. The z-axis represents the height in meters from 0 to 15, with major ticks every 5 units. The model shows the hull's geometry in three dimensions.
Date	November 2016.

2.4 Gas Carrier

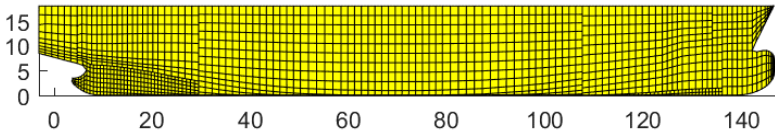
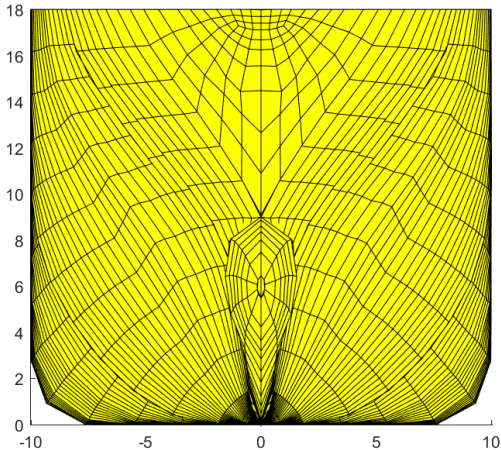
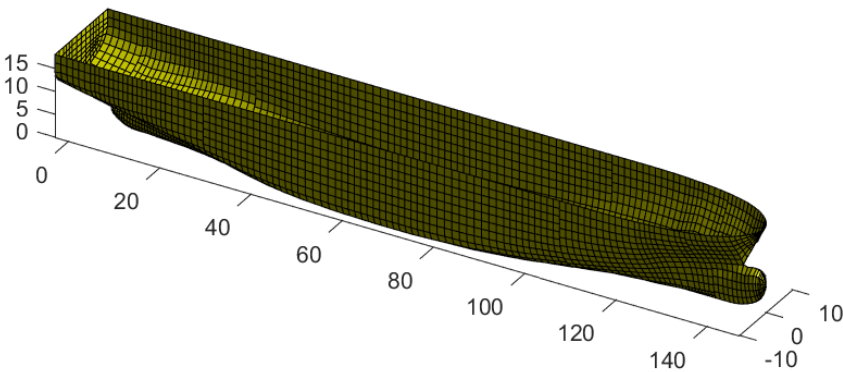
Characterisation of Vessel for Wave Response Analysis	
Vessel Characteristics	Gas Carrier 1
Hull Name	Gas Carrier 1
Type	Gas Carrier, LPG
LOA	134.8m
Beam	20m
Moulded Depth	15m
Longitudinal Profile	
Lateral Profile	
3D View	
Date	November 2016.

2.5 Passenger Vessels

Characterisation of Vessel for Wave Response Analysis	
Vessel Characteristics	Passenger Vessel 1
Hull Name	Passenger Vessel 1
Type	Passenger Vessel
LOA	267.4m
Beam	32.3m
Moulded Depth	26.3m
Longitudinal Profile	
Lateral Profile	
3D View	
Date	November 2016.

Characterisation of Vessel for Wave Response Analysis	
Vessel Characteristics	Passenger Vessel 2
Hull Name	Passenger Vessel 2
Type	Passenger Vessel
LOA	347.8m
Beam	41.6m
Moulded Depth	24.7m
Longitudinal Profile	
Lateral Profile	
3D View	
Date	November 2016.

2.6 General Cargo Vessel

Characterisation of Vessel for Wave Response Analysis	
Vessel Characteristics	General Cargo 1
Hull Name	General Cargo 1
Type	General Cargo
LOA	150m
Beam	20m
Moulded Depth	18m
Longitudinal Profile	
Lateral Profile	
3D View	
Date	November 2016.

3 Vessel Hulls for Purchase

3.1 Bulk Carriers

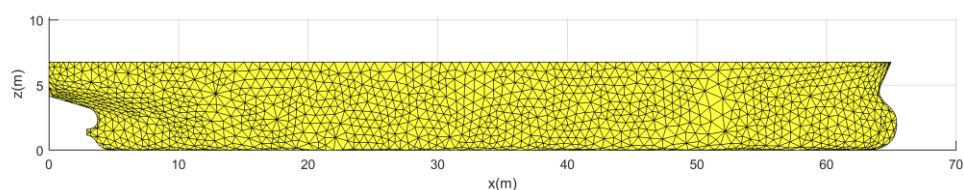
This section of Bulk Carrier represents the vessel characteristics for wave response analyses for 11 bulk carriers. The hulls represent modern ship design.

All bulkers are generated generically. They are adjusted to fit the main dimensions of the individual new buildings. The geometries are not representing a specific actual vessel.

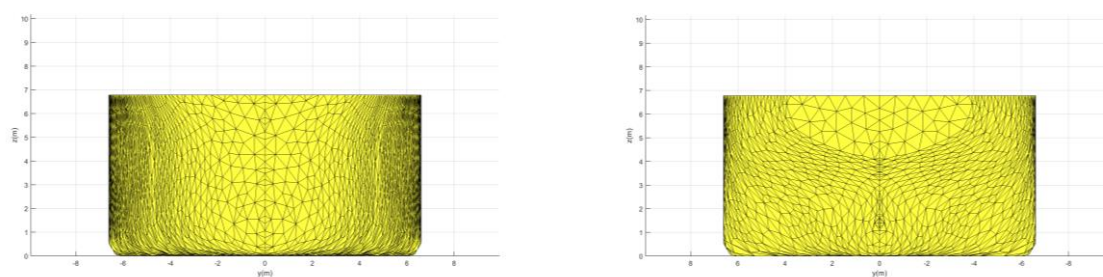
The hydrostatic characteristics such as the longitudinal Center of Buoyancy (LCB) and block coefficients (C_B) have been selected based on /1/ and /2/, respectively.

Vessel ID	Bul-01b
Hull file name	Bul-01_Bulker_2000t.hull
Vessel type	Bulk carrier
Length over all (LOA) [m]	68.8
Length between perpendiculars (LPP) [m]	63.0
Breadth [m]	13.2
Design draught [m]	4.5
Height [m]	6.0
Capacity (TEU) [-]	2000
Hydrostatics for design draught	
Volume [m ³]	2975
Longitudinal Center of Buoyancy (LCB) [m]	33.8
Vertical Center of Buoyancy (VCB) [m]	2.36
Longitudinal Center of Floatation (LCF) [m]	31.55
IT	9502.6
IL	204697
Block coefficient c_B [-]	0.79

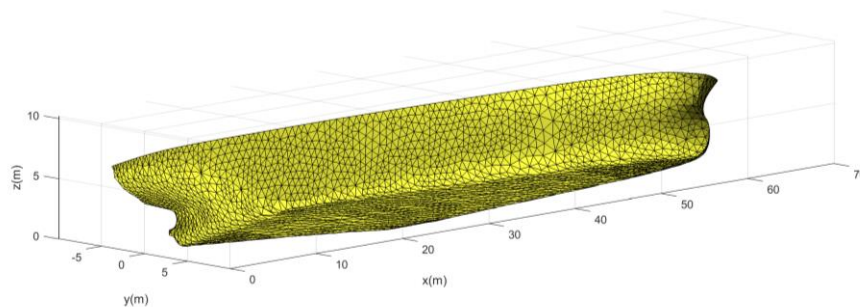
Longitudinal profile



Lateral profile



3D view

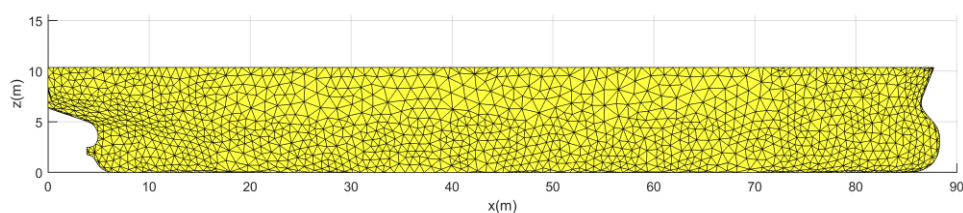


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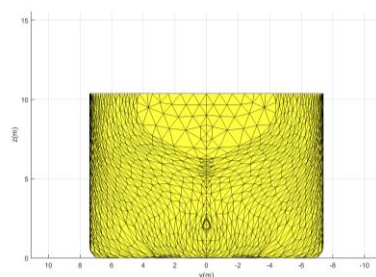
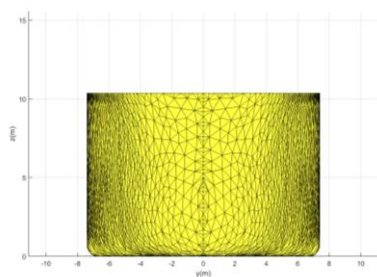
February 2017

Vessel ID	Bul-02
Hull file name	Bul-02_Bulker_5000t.hull
Vessel type	Bulk carrier
Length over all (LOA) [m]	90.0
Length between perpendiculars (LPP) [m]	85.0
Breadth [m]	14.8
Design draught [m]	6.8
Height [m]	10.4
Capacity (TEU) [-]	5000
Hydrostatics for design draught	
Volume [m ³]	6452
Longitudinal Center of Buoyancy (LCB) [m]	43.7
Vertical Center of Buoyancy (VCB) [m]	3.53
Longitudinal Center of Floatation (LCF) [m]	40.34
Transversal moment of inertia of waterplane area IT [m ⁴]	15820.3
Longitudinal moment of inertia of waterplane area IL [m ⁴]	519502
Block coefficient c_B [-]	0.76

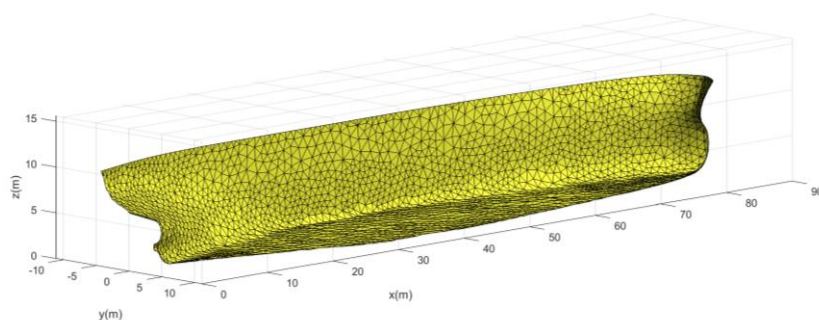
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

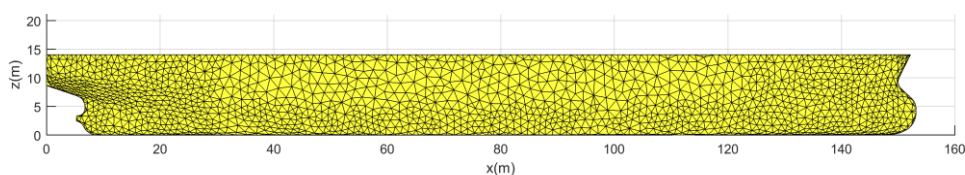


Date

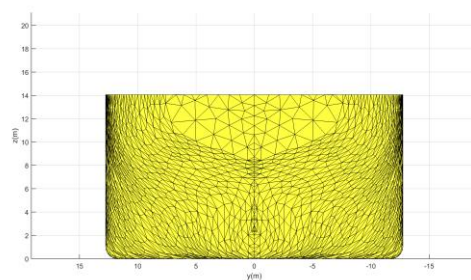
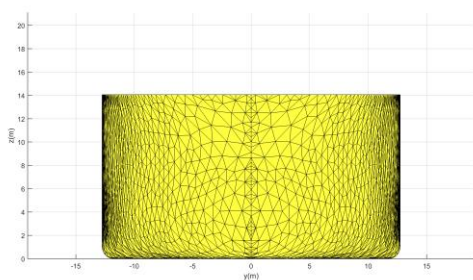
February 2017

Vessel ID	Bul-03
Hull file name	Bul-03_Bulker_20000t.hull
Vessel type	Bulk carrier
Length over all (LOA) [m]	157.0
Length between perpendiculars (LPP) [m]	147.4
Breadth [m]	25.5
Design draught [m]	9.2
Height [m]	14.0
Capacity (TEU) [-]	20000
Hydrostatics for Design Draught	
Volume [m ³]	28016
Longitudinal Center of Buoyancy (LCB) [m]	76.7
Vertical Center of Buoyancy (VCB) [m]	4.76
Longitudinal Center of Floatation (LCF) [m]	71.29
Transversal moment of inertia of waterplane area IT [m ⁴]	158895
Longitudinal moment of inertia of waterplane area IL [m ⁴]	5147130
Block coefficient c_B [-]	0.81

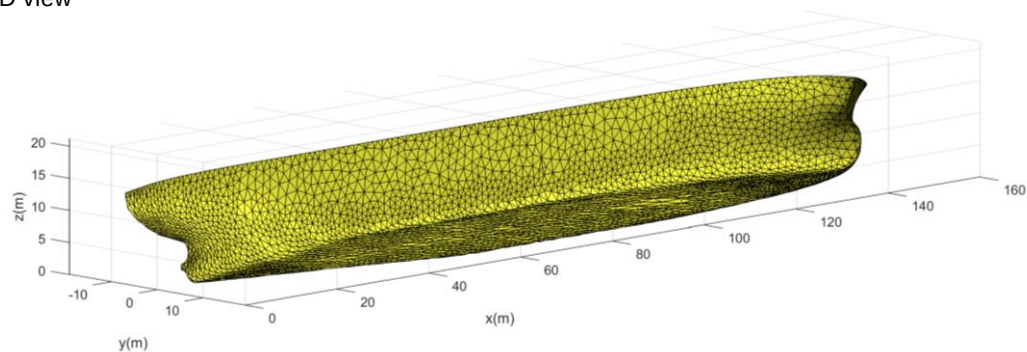
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

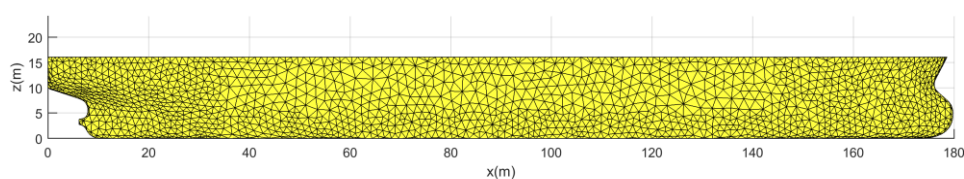


Date

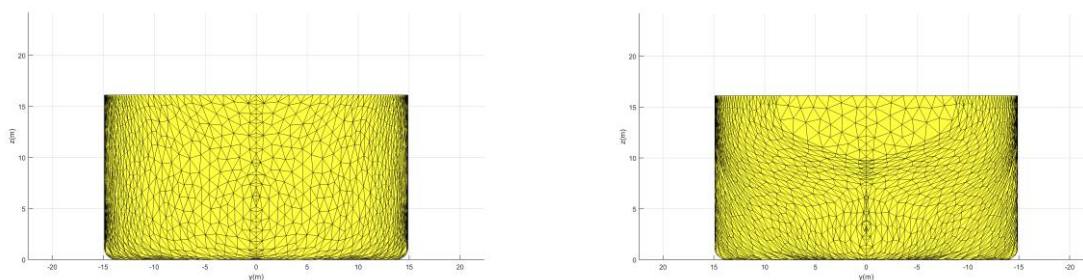
February 2017

Vessel ID	Bul-04
Hull file name	Bul-04_Bulker_37300t.hull
Vessel type	Bulk carrier, Large Handy
Length over all (LOA) [m]	180.0
Length between perpendiculars (LPP) [m]	173.0
Breadth [m]	29.8
Design draught [m]	10.6
Height [m]	16.1
Capacity (TEU) [-]	37300
Hydrostatics for Design Draught	
Volume [m ³]	45146
Longitudinal Center of Buoyancy (LCB) [m]	90.8
Vertical Center of Buoyancy (VCB) [m]	5.44
Longitudinal Center of Floatation (LCF) [m]	84.65
Transversal moment of inertia of waterplane area IT [m ⁴]	310244
Longitudinal moment of inertia of waterplane area IL [m ⁴]	10048600
Block coefficient c_B [-]	0.83

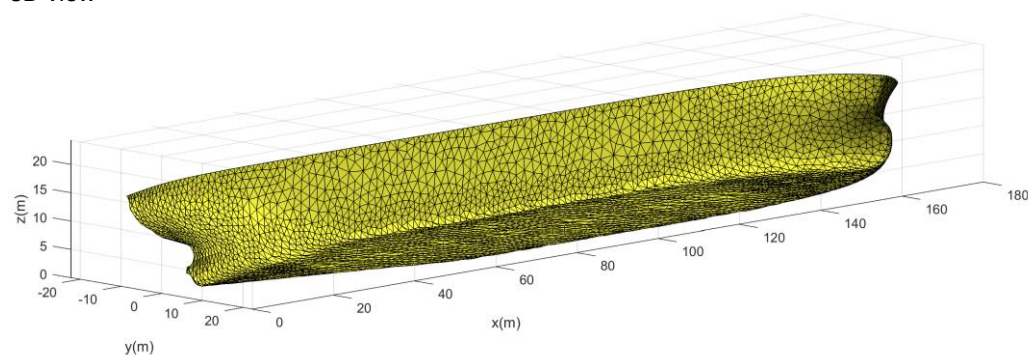
Longitudinal profile



Lateral profile (left: bow, right: aft)



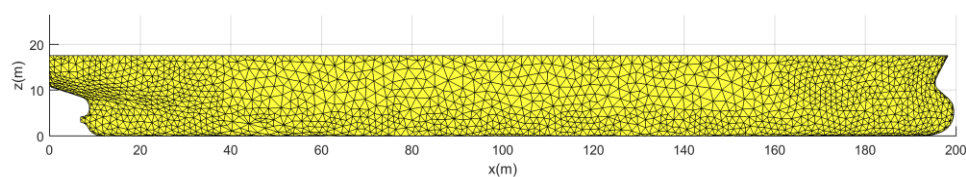
3D view



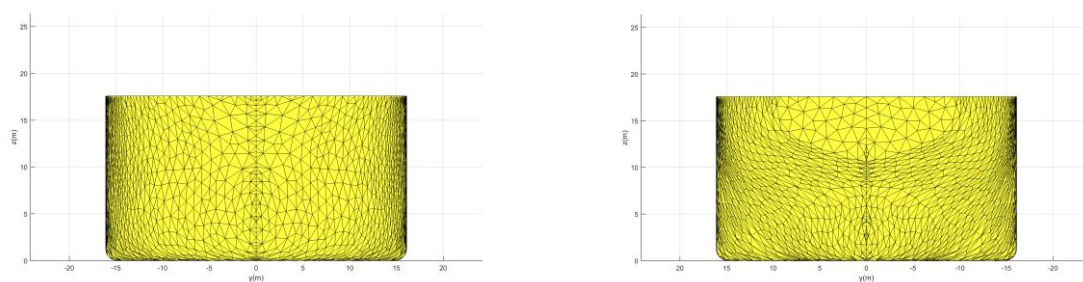
Date	February 2017
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Vessel ID	Bul-05
Hull file name	Bul-05_Bulker_49300t.hull
Vessel type	Bulk carrier
Length over all (LOA) [m]	199.9
Length between perpendiculars (LPP) [m]	192.0
Breadth [m]	32.2
Design draught [m]	11.5
Height [m]	17.6
Capacity (TEU) [-]	49350
Hydrostatics for Design Draught	
Volume [m ³]	59015
Longitudinal Center of Buoyancy (LCB) [m]	101.3
Vertical Center of Buoyancy (VCB) [m]	5.93
Longitudinal Center of Floatation (LCF) [m]	94.22
Transversal moment of inertia of waterplane area IT [m ⁴]	436330
Longitudinal moment of inertia of waterplane area IL [m ⁴]	14910000
Block coefficient c_B [-]	0.83

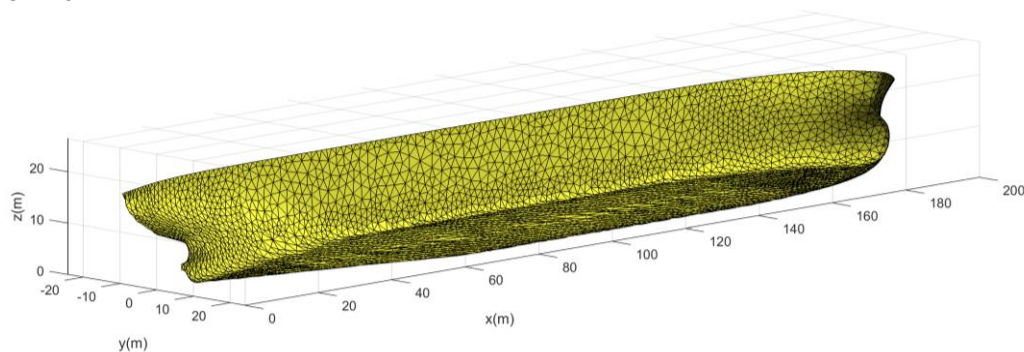
Longitudinal profile



Lateral profile (left: bow, right: aft)



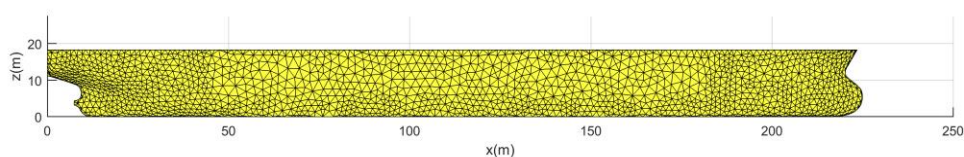
3D view



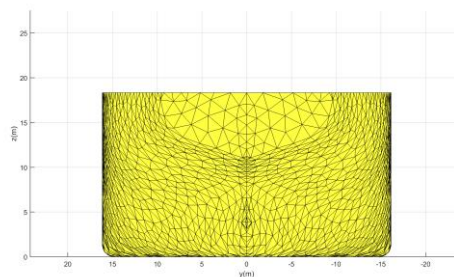
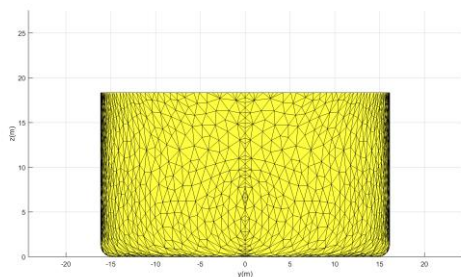
Date	February 2017
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Vessel ID	Bul-06
Hull file name	Bul-06_Bulker_74000t.hull
Vessel type	Bulk carrier, PanaMax
Length over all (LOA) [m]	225.0
Length between perpendiculars (LPP) [m]	216.0
Breadth [m]	32.3
Design draught [m]	13.9
Height [m]	18.3
Capacity (TEU) [-]	74382
Hydrostatics for Design Draught	
Volume [m ³]	84960
Longitudinal Center of Buoyancy (LCB) [m]	111.1
Vertical Center of Buoyancy (VCB) [m]	7.13
Longitudinal Center of Floatation (LCF) [m]	104.71
Transversal moment of inertia of waterplane area IT [m ⁴]	526820
Longitudinal moment of inertia of waterplane area IL [m ⁴]	23325500
Block coefficient c_B [-]	0.88

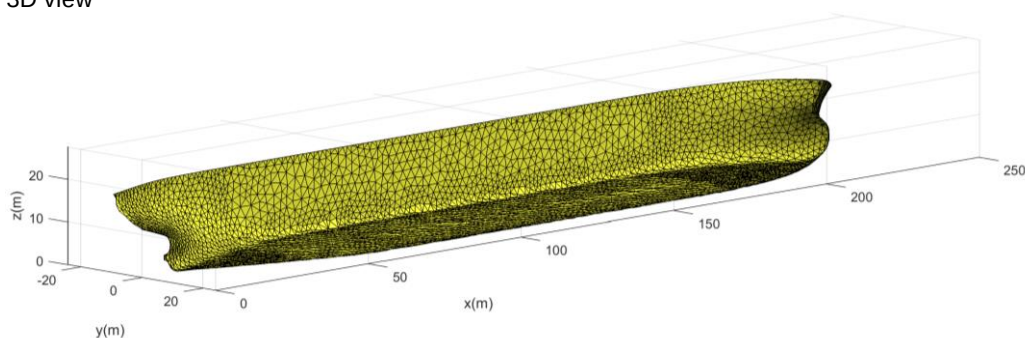
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

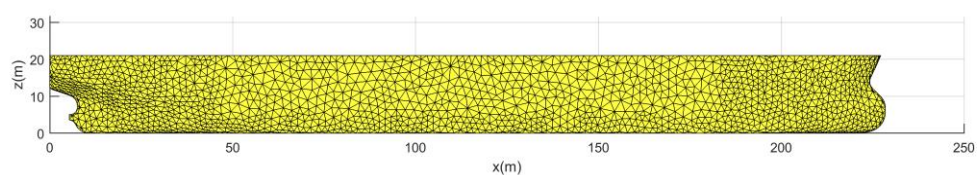


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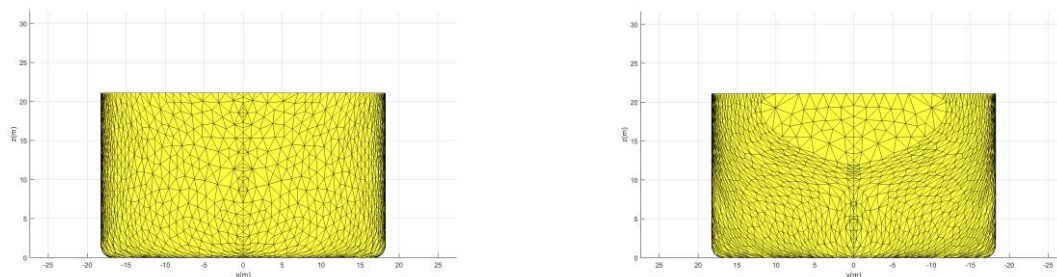
February 2017

Vessel ID	Bul-07
Hull file name	Bul-07_Bulker_84000t.hull
Vessel type	Bulk carrier, Kamsarmax
Length over all (LOA) [m]	228.5
Length between perpendiculars (LPP) [m]	223.0
Breadth [m]	36.5
Design draught [m]	13.8
Height [m]	21.0
Capacity (TEU) [-]	84000
Hydrostatics for Design Draught	
Volume [m ³]	95479
Longitudinal Center of Buoyancy (LCB) [m]	117.6
Vertical Center of Buoyancy (VCB) [m]	7.08
Longitudinal Center of Floatation (LCF) [m]	110.42
Transversal moment of inertia of waterplane area I_T [m ⁴]	761024
Longitudinal moment of inertia of waterplane area I_L [m ⁴]	26920900
Block coefficient c_B [-]	0.85

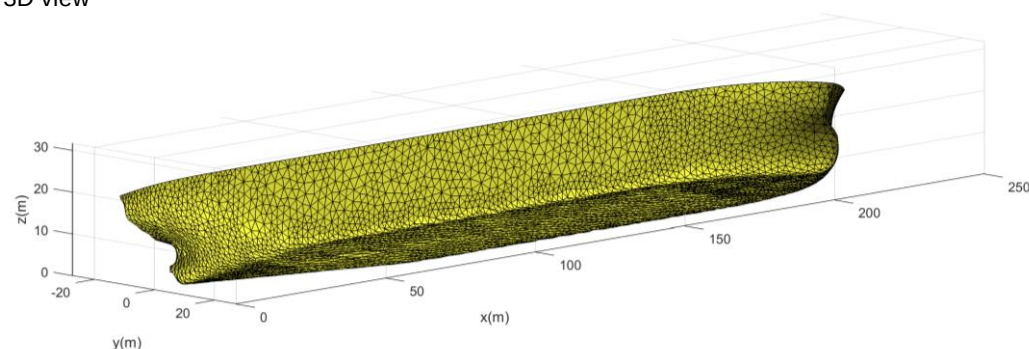
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

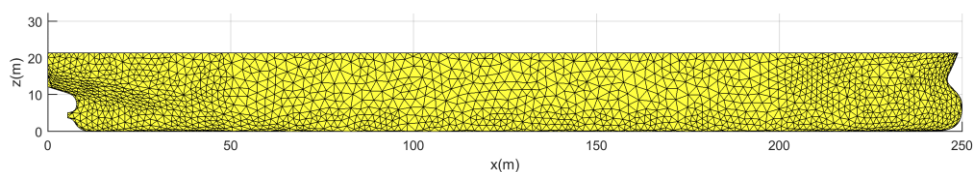


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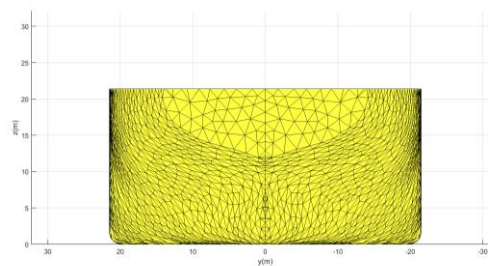
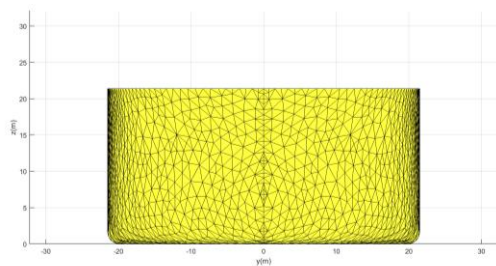
February 2017

Vessel ID	Bul-08
Hull file name	Bul-08_Bulker_105000t.hull
Vessel type	Bulk carrier, Mini Capesize
Length over all (LOA) [m]	250.0
Length between perpendiculars (LPP) [m]	245.0
Breadth [m]	43.0
Design draught [m]	14.0
Height [m]	21.4
Capacity (TEU) [-]	105000
Hydrostatics for Design Draught	
Volume [m ³]	124632
Longitudinal Center of Buoyancy (LCB) [m]	129.2
Vertical Center of Buoyancy (VCB) [m]	7.19
Longitudinal Center of Floatation (LCF) [m]	121.32
Transversal moment of inertia of waterplane area IT [m ⁴]	1356300
Longitudinal moment of inertia of waterplane area IL [m ⁴]	41519400
Block coefficient c_B [-]	0.85

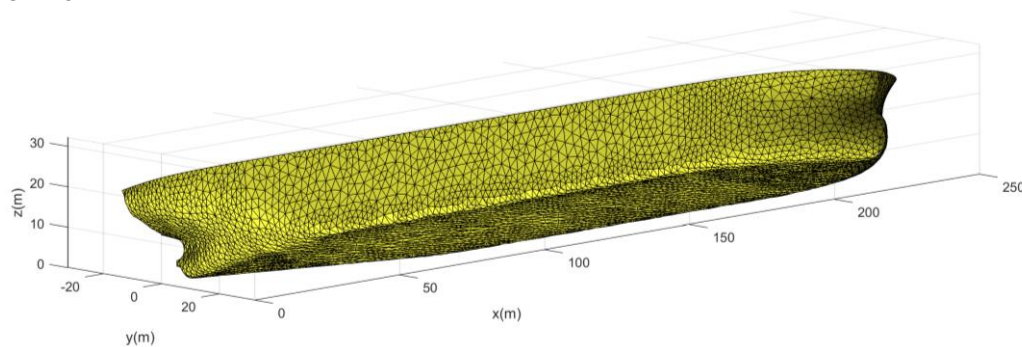
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

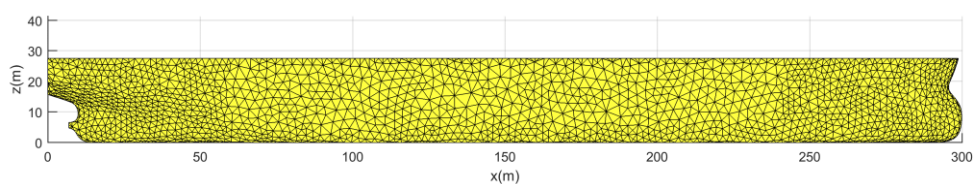


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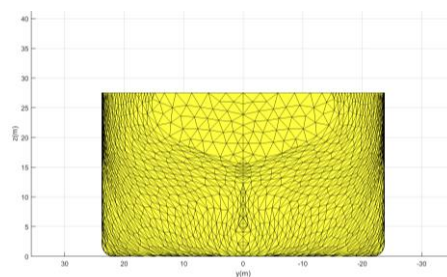
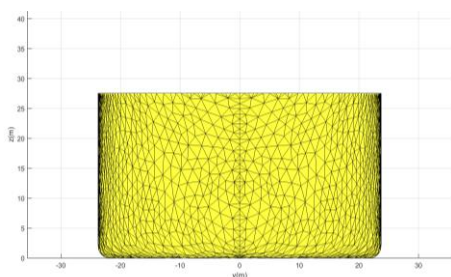
February 2017

Vessel ID	Bul-09
Hull file name	Bul-09_Bulker_187000t.hull
Vessel type	Bulk carrier, Capesize
Length over all (LOA) [m]	299.9
Length between perpendiculars (LPP) [m]	294.0
Breadth [m]	47.5
Design draught [m]	18.0
Height [m]	27.5
Capacity (TEU) [-]	187882
Hydrostatics for Design Draught	
Volume [m ³]	213904
Longitudinal Center of Buoyancy (LCB) [m]	155.1
Vertical Center of Buoyancy (VCB) [m]	9.25
Longitudinal Center of Floatation (LCF) [m]	145.74
Transversal moment of inertia of waterplane area IT [m ⁴]	2211730
Longitudinal moment of inertia of waterplane area IL [m ⁴]	80084700
Block coefficient c_B [-]	0.85

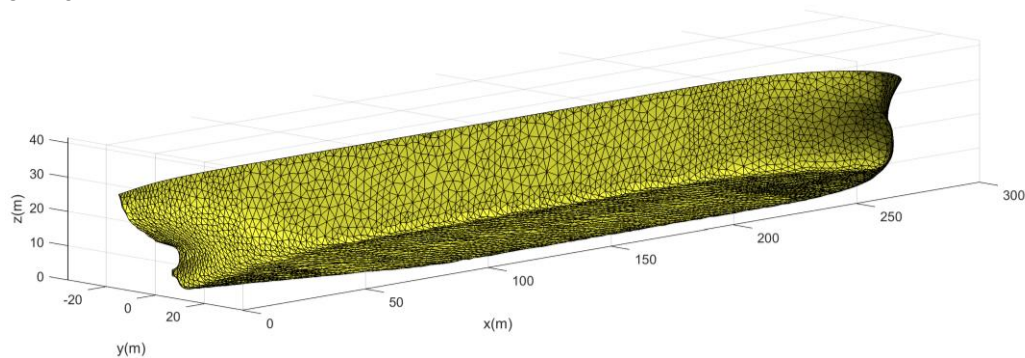
Longitudinal profile



Lateral profile (left: bow, right: aft)



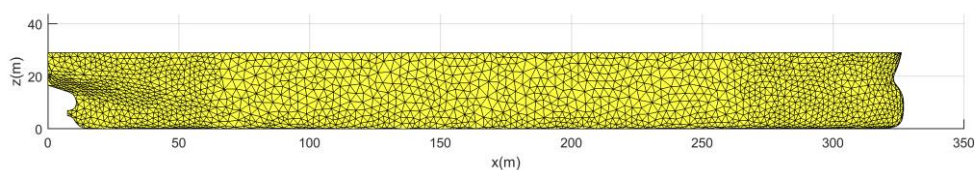
3D view



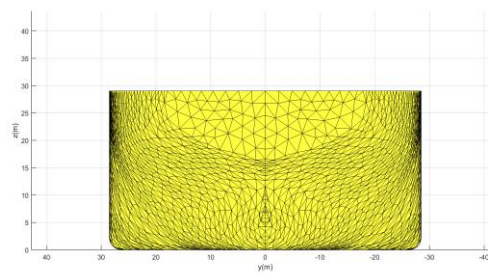
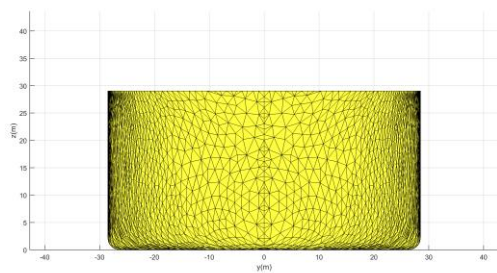
Date	February 2017
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Vessel ID	Bul-10
Hull file name	Bul-10_Bulker_250000t.hull
Vessel type	Bulk carrier, Capesize
Length over all (LOA) [m]	327.0
Length between perpendiculars (LPP) [m]	321.5
Breadth [m]	57.0
Design draught [m]	19.0
Height [m]	29.0
Capacity (TEU) [-]	250000
Hydrostatics for Design Draught	
Volume [m ³]	282080
Longitudinal Center of Buoyancy (LCB) [m]	167.1
Vertical Center of Buoyancy (VCB) [m]	9.81
Longitudinal Center of Floatation (LCF) [m]	156.05
Transversal moment of inertia of waterplane area IT [m ⁴]	3862650
Longitudinal moment of inertia of waterplane area IL [m ⁴]	117593000
Block coefficient c_B [-]	0.81

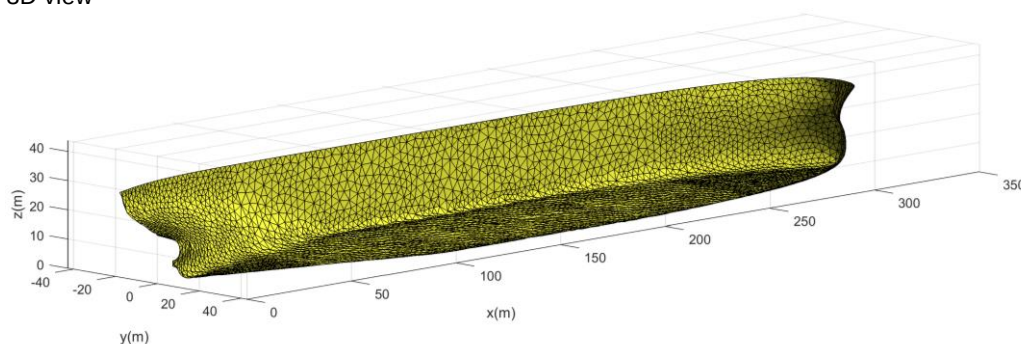
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

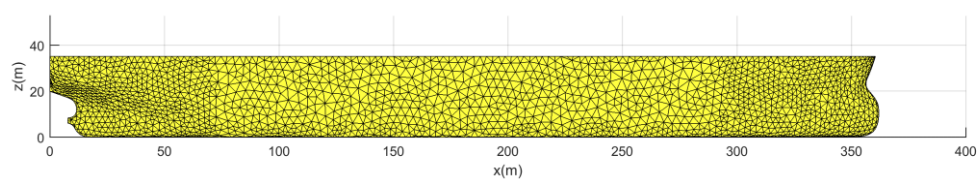


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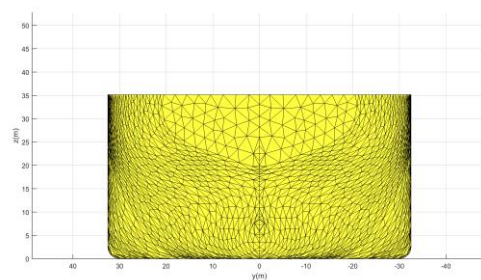
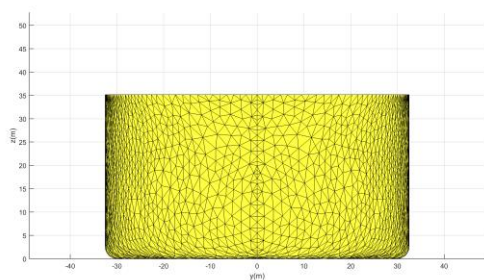
February 2017

Vessel ID	Bul-11
Hull file name	Bul-11_Bulker_400000t.hull
Vessel type	Bulk carrier, Capesize
Length over all (LOA) [m]	362.0
Length between perpendiculars (LPP) [m]	355.0
Breadth [m]	65.0
Design draught [m]	23.0
Height [m]	35.0
Capacity (TEU) [-]	400000
Hydrostatics for Design Draught	
Volume [m ³]	440522
Longitudinal Center of Buoyancy (LCB) [m]	187.2
Vertical Center of Buoyancy (VCB) [m]	11.85
Longitudinal Center of Floatation (LCF) [m]	174.98
Transversal moment of inertia of waterplane area IT [m ⁴]	6631150
Longitudinal moment of inertia of waterplane area IL [m ⁴]	187351000
Block coefficient c_B [-]	0.83

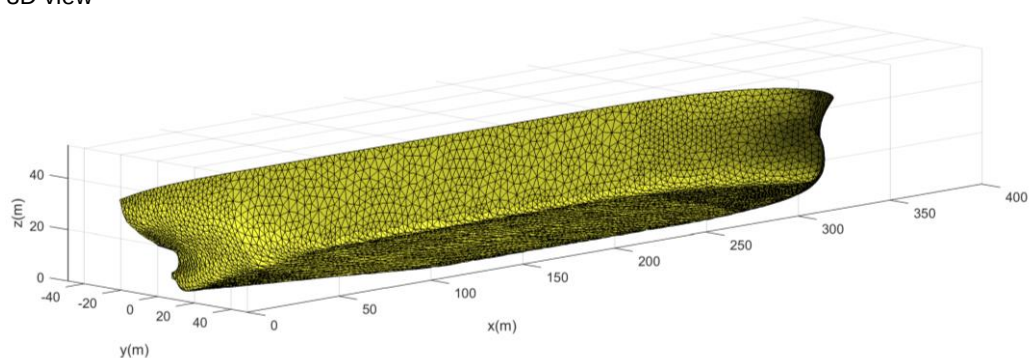
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view



Date

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3.2 Container Carriers

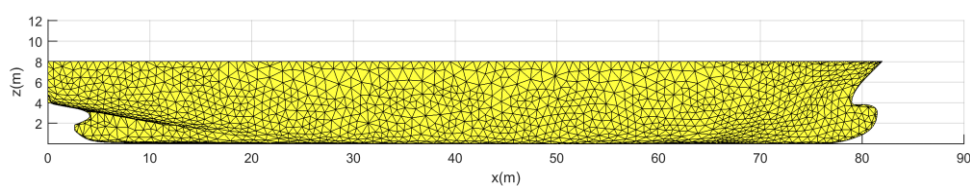
This section represents the vessel characteristics for wave response analyses for 13 single screw container carriers of different size. They are clustered based on global scheduled container vessel new building projects within the next years and represent a variety of many container carrier ship types.

All container vessel geometries are generated generically based on the main dimensions chosen.

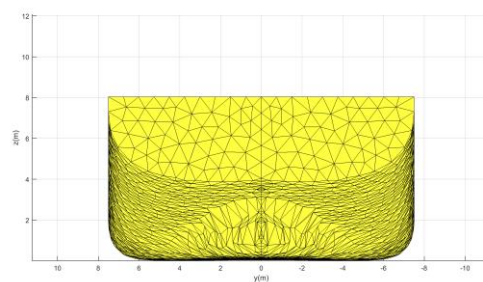
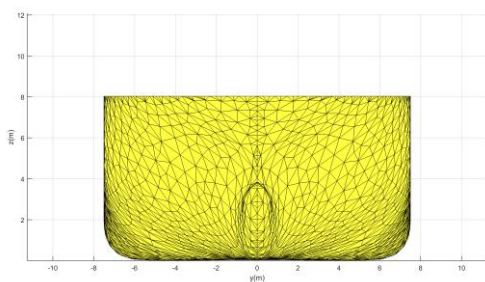
The hydrostatic characteristics such as the longitudinal Center of Buoyancy (LCB) and block coefficients (C_B) have been selected based on $/1/$ and $/3/$, respectively.

Vessel ID	Con-01
Hull file name	Con-01_Panelfile_160TEU.hull
Vessel type	Container carrier, Small Feeder
Length over all (LOA) [m]	82.0
Length between perpendiculars (LPP) [m]	78.9
Breadth [m]	15.0
Design draught [m]	4.0
Height [m]	8.0
Capacity (TEU) [-]	160
Hydrostatics for Design Draught	
Volume [m ³]	3454
Longitudinal Center of Buoyancy (LCB) [m]	40.2
Vertical Center of Buoyancy (VCB) [m]	2.19
Longitudinal Center of Floatation (LCF) [m]	37.56
Transversal moment of inertia of waterplane area IT [m ⁴]	18445
Longitudinal moment of inertia of waterplane area IL [m ⁴]	463373
Block coefficient c_B [-]	0.73

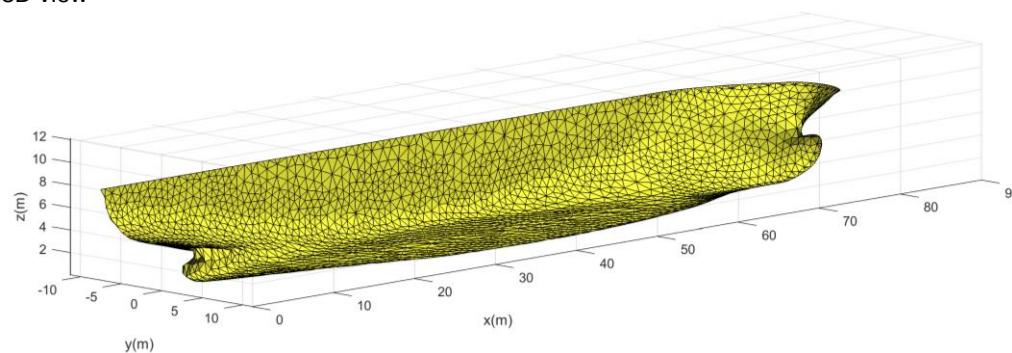
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

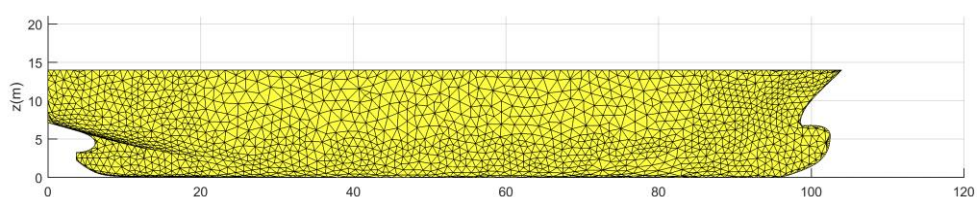


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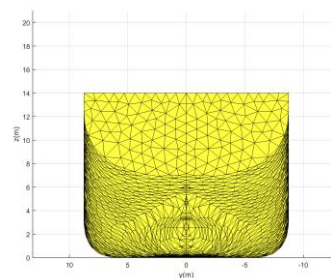
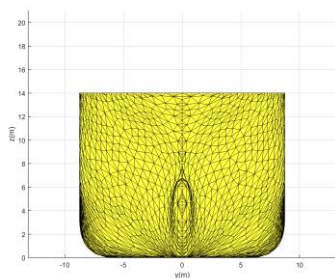
February 2017

Vessel ID	Con-02
Hull file name	Con-02_Panelfile_250TEU.hull
Vessel type	Container carrier, Small Feeder
Length over all (LOA) [m]	104.0
Length between perpendiculars (LPP) [m]	98.0
Breadth [m]	17.5
Design draught [m]	7.2
Height [m]	14.0
Capacity (TEU) [-]	278
Hydrostatics for Design Draught	
Volume [m ³]	8822
Longitudinal Center of Buoyancy (LCB) [m]	49.5
Vertical Center of Buoyancy (VCB) [m]	3.92
Longitudinal Center of Floatation (LCF) [m]	46.50
Transversal moment of inertia of waterplane area IT [m ⁴]	35985
Longitudinal moment of inertia of waterplane area IL [m ⁴]	1020000
Block coefficient c_B [-]	0.72

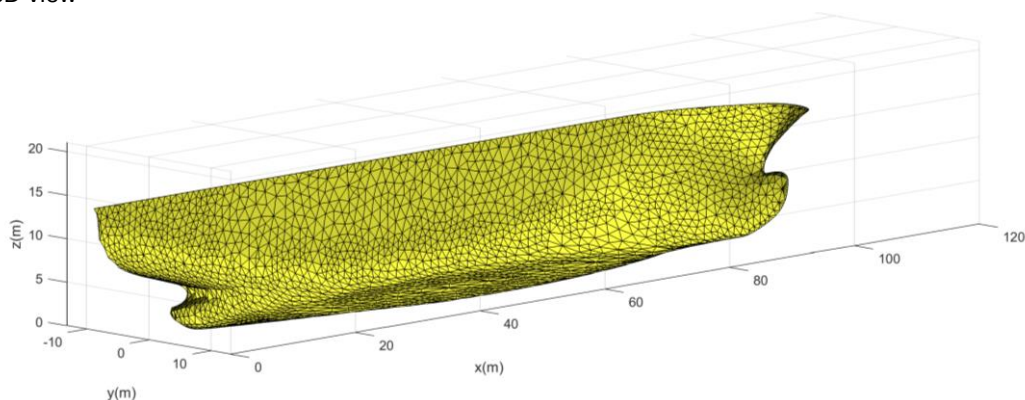
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

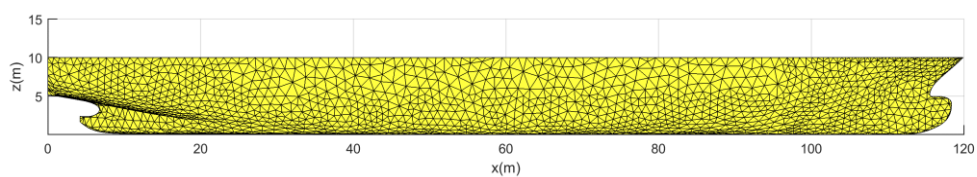


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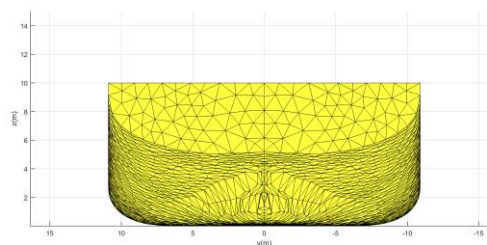
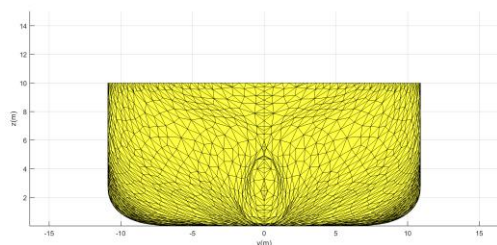
February 2017

Vessel ID	Con-03
Hull file name	Con-03_Panelfile_500TEU.hull
Vessel type	Container carrier, Small Feeder
Length over all (LOA) [m]	119.9
Length between perpendiculars (LPP) [m]	115.0
Breadth [m]	21.8
Design draught [m]	5.2
Height [m]	10.0
Capacity (TEU) [-]	558
Hydrostatics for Design Draught	
Volume [m ³]	9259
Longitudinal Center of Buoyancy (LCB) [m]	57.5
Vertical Center of Buoyancy (VCB) [m]	2.87
Longitudinal Center of Floatation (LCF) [m]	54.33
Transversal moment of inertia of waterplane area IT [m ⁴]	81157.1
Longitudinal moment of inertia of waterplane area IL [m ⁴]	2020000
Block coefficient c_B [-]	0.71

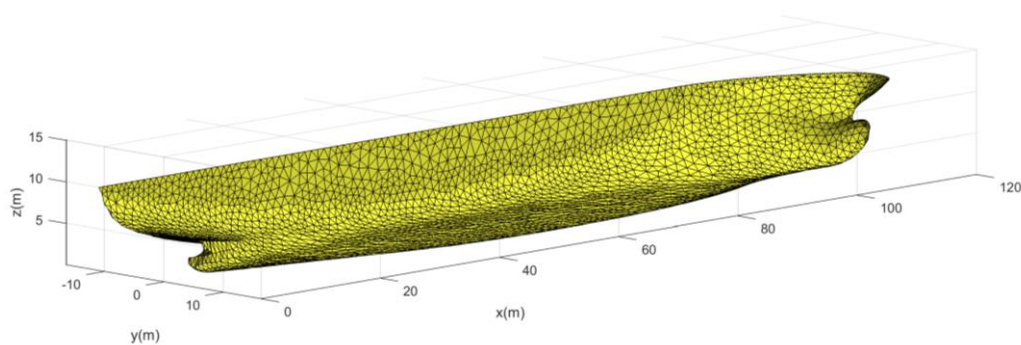
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

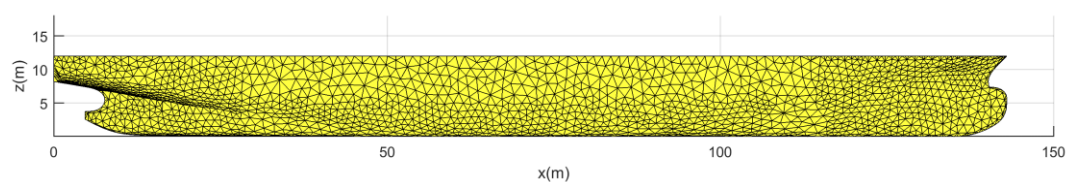


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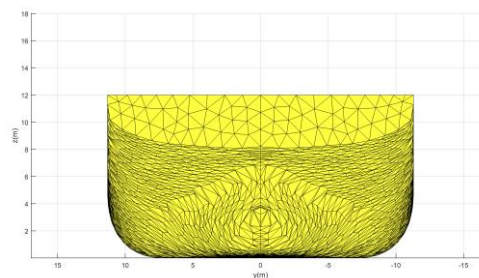
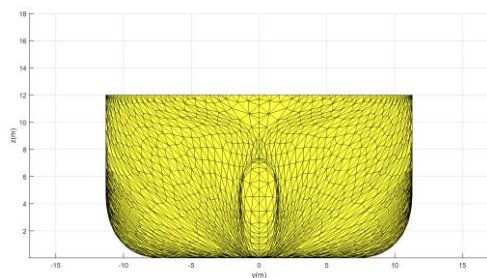
February 2017

Vessel ID	Con-04
Hull file name	Con-04_Panelfile_1000TEU.hull
Vessel type	Container carrier, Regional Feeder
Length over all (LOA) [m]	143.0
Length between perpendiculars (LPP) [m]	140.0
Breadth [m]	22.6
Design draught [m]	8.2
Height [m]	12.0
Capacity (TEU) [-]	1020
Hydrostatics for Design Draught	
Volume [m ³]	17503
Longitudinal Center of Buoyancy (LCB) [m]	69.4
Vertical Center of Buoyancy (VCB) [m]	4.57
Longitudinal Center of Floatation (LCF) [m]	65.19
Transversal moment of inertia of waterplane area IT [m ⁴]	109447
Longitudinal moment of inertia of waterplane area IL [m ⁴]	3680000
Block coefficient C_B [-]	0.67

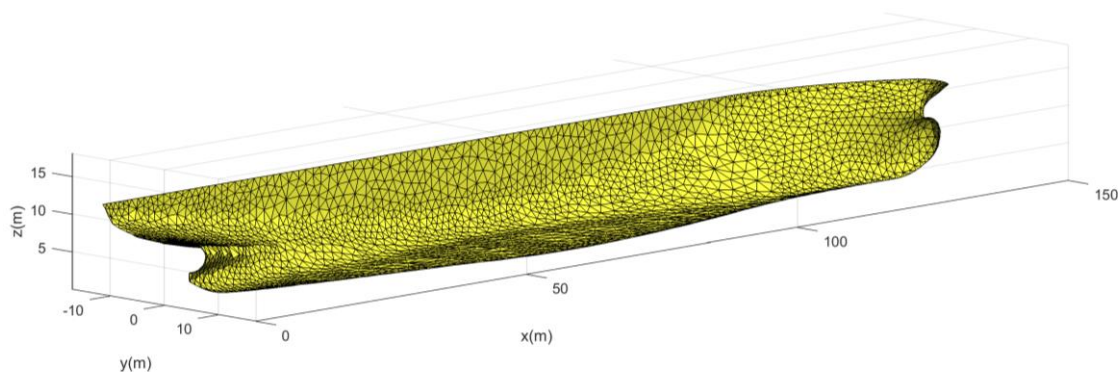
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

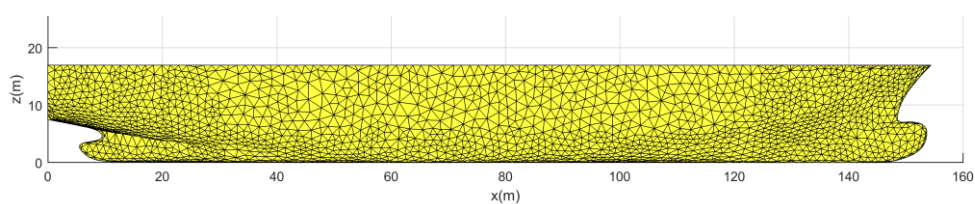


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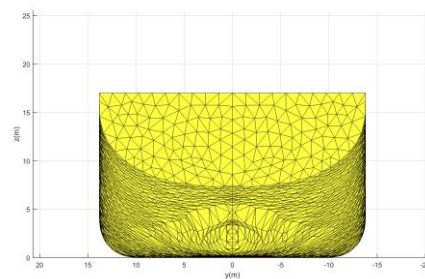
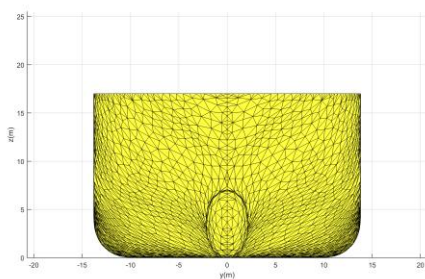
February 2017

Vessel ID	Con-05
Hull file name	Con-05_Panelfile_1400TEU.hull
Vessel type	Container carrier, Regional Feeder
Length over all (LOA) [m]	153.7
Length between perpendiculars (LPP) [m]	148.0
Breadth [m]	27.6
Design draught [m]	7.4
Height [m]	17.0
Capacity (TEU) [-]	1400
Hydrostatics for Design Draught	
Volume [m ³]	20208
Longitudinal Center of Buoyancy (LCB) [m]	73.3
Vertical Center of Buoyancy (VCB) [m]	4.11
Longitudinal Center of Floatation (LCF) [m]	70.75
Transversal moment of inertia of waterplane area IT [m ⁴]	198747
Longitudinal moment of inertia of waterplane area IL [m ⁴]	4980000
Block coefficient c_B [-]	0.67

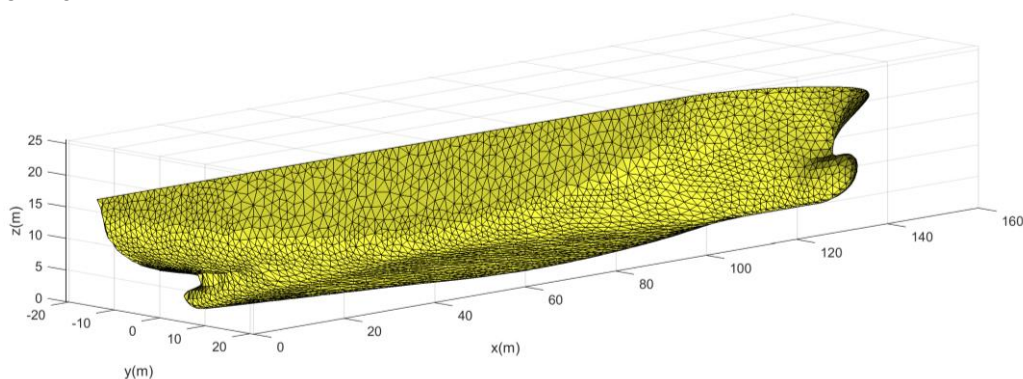
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

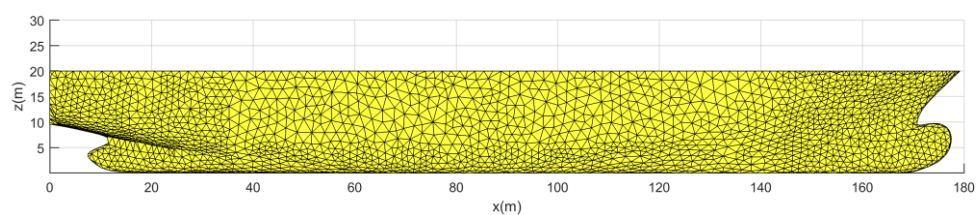


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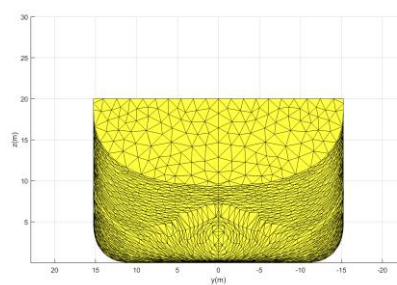
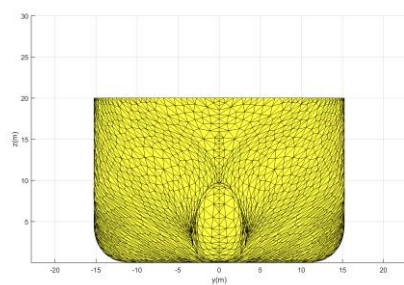
February 2017

Vessel ID	Con-06
Hull file name	Con-06_Panelfile_1900TEU.hull
Vessel type	Container carrier
Length over all (LOA) [m]	177.5
Length between perpendiculars (LPP) [m]	169.0
Breadth [m]	30.5
Design draught [m]	9.5
Height [m]	20.0
Capacity (TEU) [-]	1924
Hydrostatics for Design Draught	
Volume [m ³]	31836
Longitudinal Center of Buoyancy (LCB) [m]	82.2
Vertical Center of Buoyancy (VCB) [m]	5.35
Longitudinal Center of Floatation (LCF) [m]	78.98
Transversal moment of inertia of waterplane area IT [m ⁴]	305336
Longitudinal moment of inertia of waterplane area IL [m ⁴]	8130000
Block coefficient c_B [-]	0.65

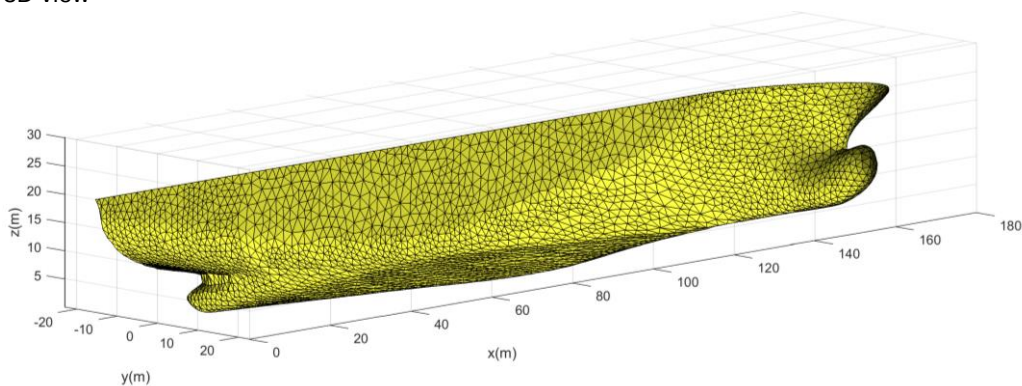
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

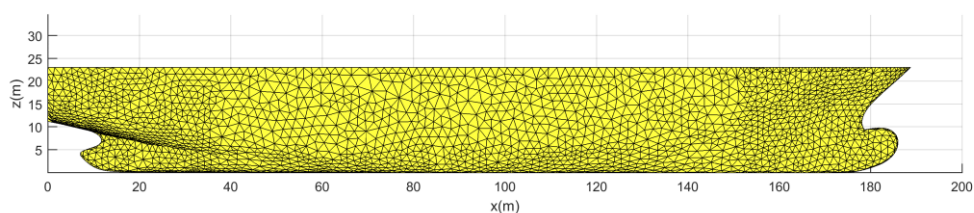


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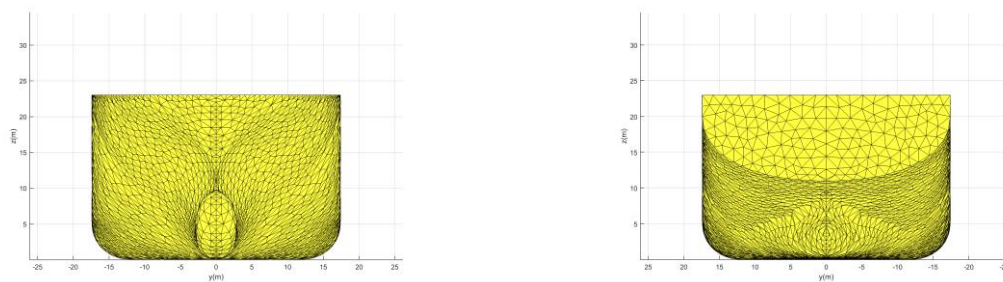
February 2017

Vessel ID	Con-07
Hull file name	Con-07_Panelfile_2700TEU.hull
Vessel type	Container carrier, Feedermax
Length over all (LOA) [m]	186.0
Length between perpendiculars (LPP) [m]	177.0
Breadth [m]	34.8
Design draught [m]	11.0
Height [m]	23.0
Capacity (TEU) [-]	2708
Hydrostatics for Design Draught	
Volume [m ³]	43513
Longitudinal Center of Buoyancy (LCB) [m]	86.4
Vertical Center of Buoyancy (VCB) [m]	6.16
Longitudinal Center of Floatation (LCF) [m]	82.12
Transversal moment of inertia of waterplane area IT [m ⁴]	460418
Longitudinal moment of inertia of waterplane area IL [m ⁴]	10000000
Block coefficient C_B [-]	0.64

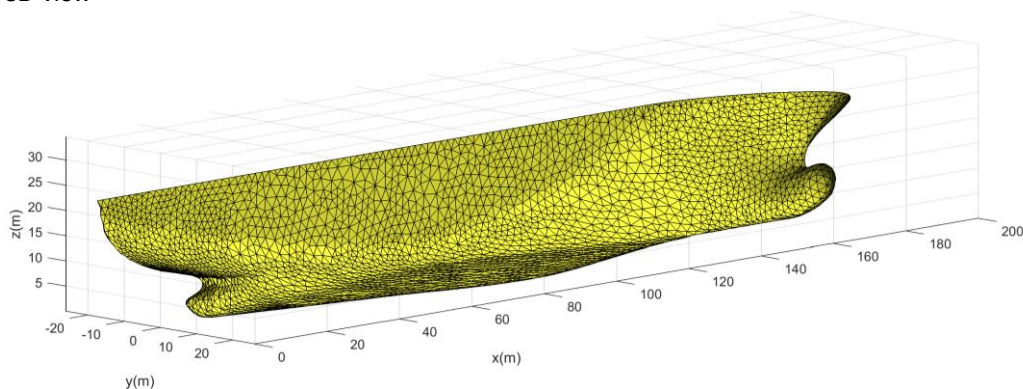
Longitudinal profile



Lateral profile (left: bow, right: aft)



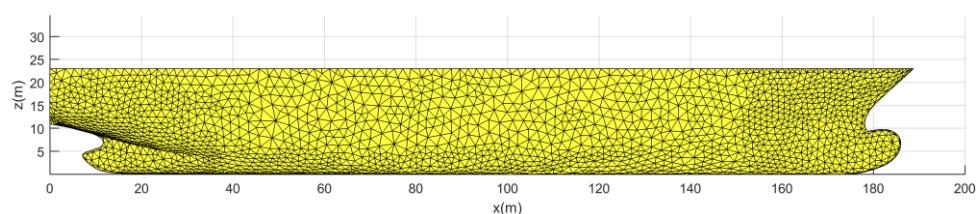
3D view



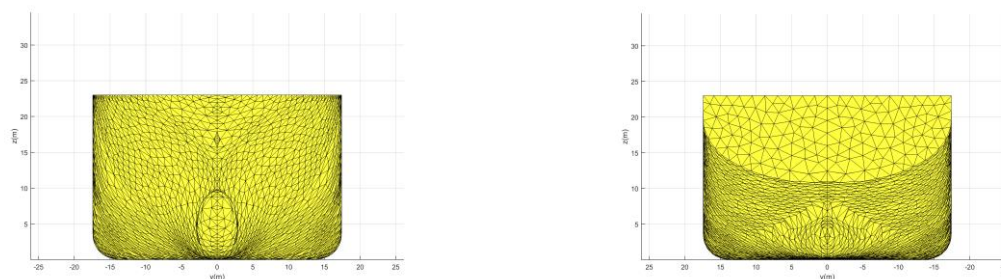
Date	February 2017
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Vessel ID	Con-07b
Hull file name	Con-07b_Panelfile_2700TEU_b.hull
Vessel type	Container carrier, Feedermax
Length over all (LOA) [m]	186.0
Length between perpendiculars (LPP) [m]	177.0
Breadth [m]	34.8
Design draught [m]	11.0
Height [m]	23.0
Capacity (TEU) [-]	2708
Hydrostatics for Design Draught	
Volume [m ³]	45945
Longitudinal Center of Buoyancy (LCB) [m]	87.5
Vertical Center of Buoyancy (VCB) [m]	6.09
Longitudinal Center of Floatation (LCF) [m]	82.79
Transversal moment of inertia of waterplane area IT [m ⁴]	476543
Longitudinal moment of inertia of waterplane area IL [m ⁴]	10700000
Block coefficient C_B [-]	0.68

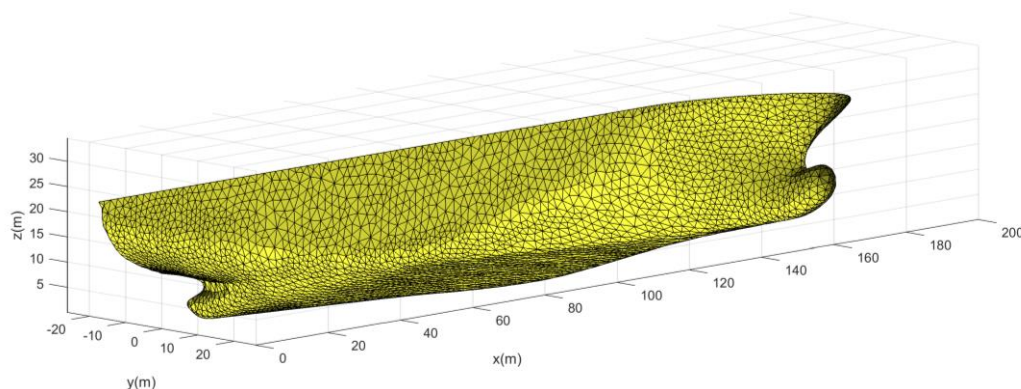
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

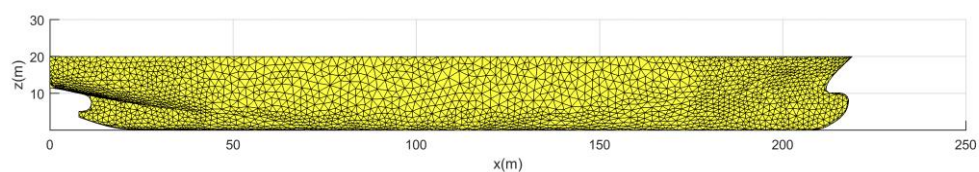


Date

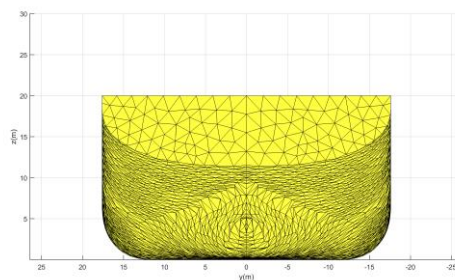
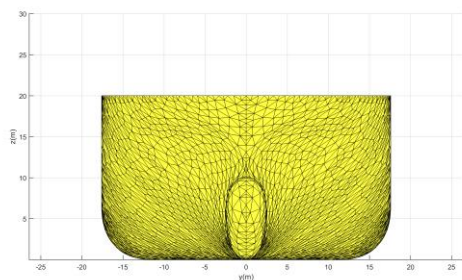
December 2017

Vessel ID	Con-08
Hull file name	Con-08_panelfile_3300TEU.hull
Vessel type	Container carrier, Baby Post-Panamax
Length over all (LOA) [m]	219.0
Length between perpendiculars (LPP) [m]	210.0
Breadth [m]	35.2
Design draught [m]	11.0
Height [m]	20.0
Capacity (TEU) [-]	3300
Hydrostatics for Design Draught	
Volume [m ³]	53297
Longitudinal Center of Buoyancy (LCB) [m]	102.9
Vertical Center of Buoyancy (VCB) [m]	6.17
Longitudinal Center of Floatation (LCF) [m]	99.05
Transversal moment of inertia of waterplane area IT [m ⁴]	594374
Longitudinal moment of inertia of waterplane area IL [m ⁴]	18100000
Block coefficient c_B [-]	0.66

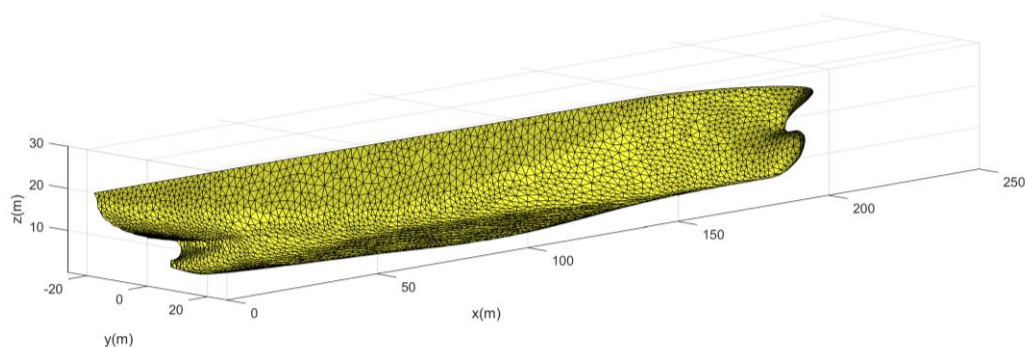
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

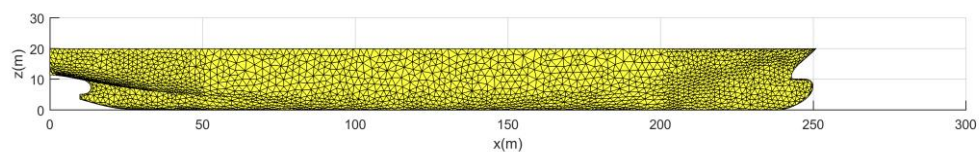


Date

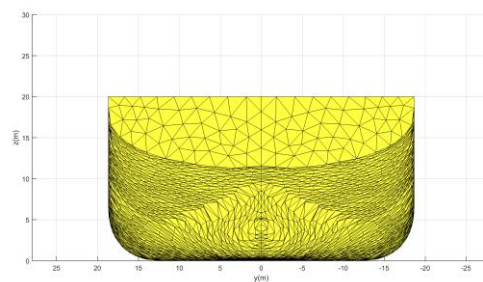
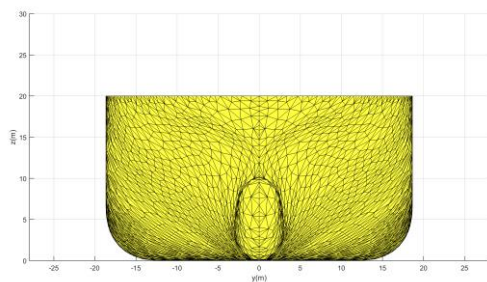
February 2017

Vessel ID	Con-09
Hull file name	Con-09_Panelfile_4700TEU.hull
Vessel type	Container carrier, Baby Post-Panamax
Length over all (LOA) [m]	251.0
Length between perpendiculars (LPP) [m]	240.0
Breadth [m]	37.3
Design draught [m]	11.0
Height [m]	20.0
Capacity (TEU) [-]	4700
Hydrostatics for Design Draught	
Volume [m ³]	65968
Longitudinal Center of Buoyancy (LCB) [m]	118.8
Vertical Center of Buoyancy (VCB) [m]	6.14
Longitudinal Center of Floatation (LCF) [m]	113.67
Transversal moment of inertia of waterplane area IT [m ⁴]	819234
Longitudinal moment of inertia of waterplane area IL [m ⁴]	29300000
Block coefficient c_B [-]	0.67

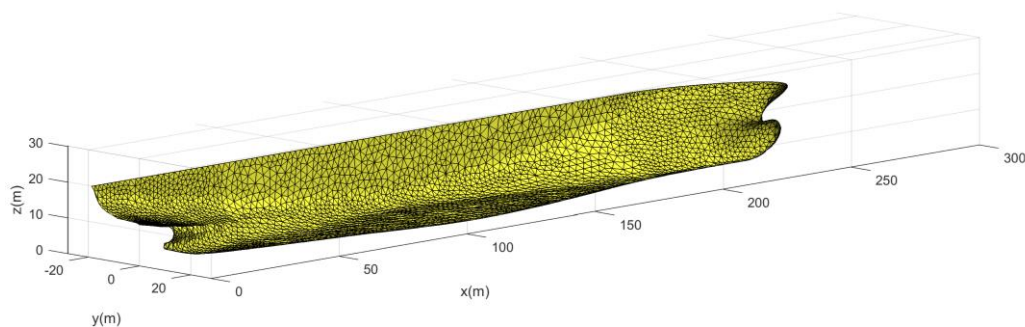
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

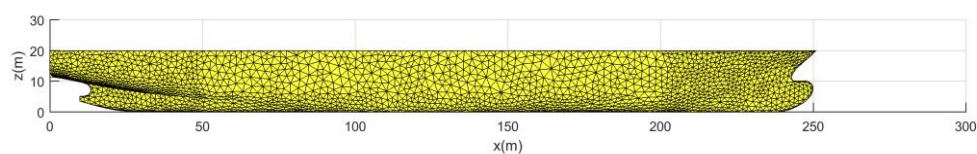


Date

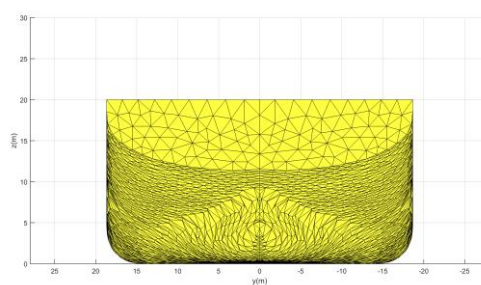
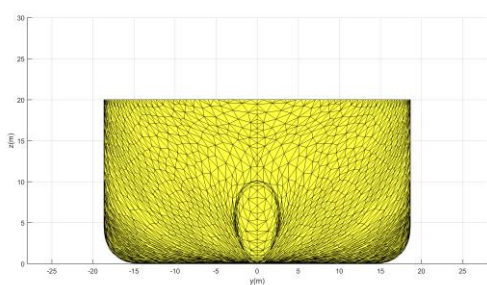
February 2017

Vessel ID	Con-09b
Hull file name	Con-09_Panelfile_4700TEU.hull
Vessel type	Container carrier, Baby Post-Panamax
Length over all (LOA) [m]	251.0
Length between perpendiculars (LPP) [m]	240.0
Breadth [m]	37.3
Design draught [m]	11.0
Height [m]	20.0
Capacity (TEU) [-]	4700
Hydrostatics for Design Draught	
Volume [m ³]	69011
Longitudinal Center of Buoyancy (LCB) [m]	120.0
Vertical Center of Buoyancy (VCB) [m]	6.08
Longitudinal Center of Floatation (LCF) [m]	114.38
Transversal moment of inertia of waterplane area IT [m ⁴]	833778
Longitudinal moment of inertia of waterplane area IL [m ⁴]	30900000
Block coefficient c_B [-]	0.70

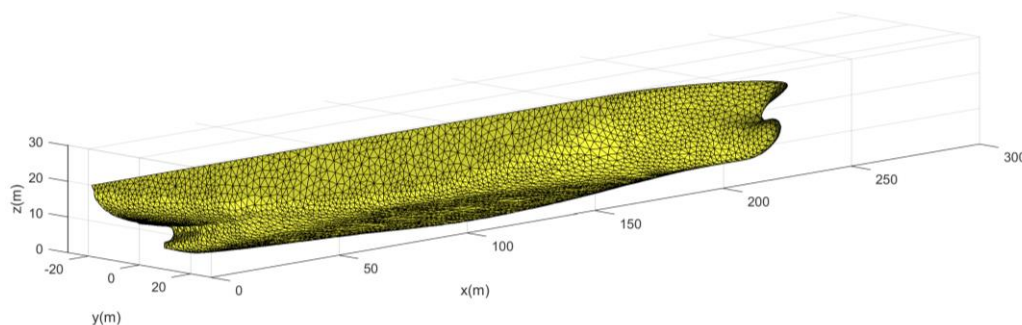
Longitudinal profile



Lateral profile (left: bow, right: aft)



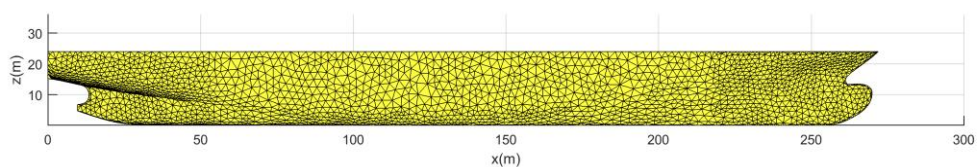
3D view



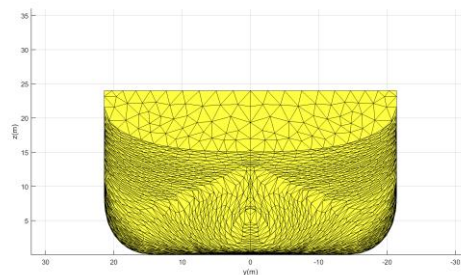
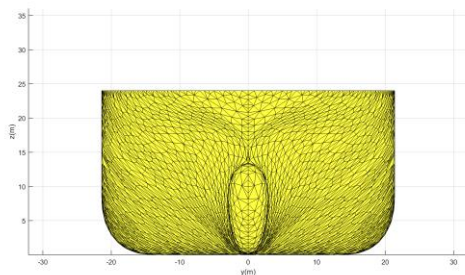
Date	December 2017
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Vessel ID	Con-10
Hull file name	Con-10_Panelfile_6900TEU.hull
Vessel type	Container carrier, Post-Panamax
Length over all (LOA) [m]	270.0
Length between perpendiculars (LPP) [m]	259.0
Breadth [m]	42.8
Design draught [m]	14.5
Height [m]	24.0
Capacity (TEU) [-]	6865
Hydrostatics for Design Draught	
Volume [m ³]	103003
Longitudinal Center of Buoyancy (LCB) [m]	126.0
Vertical Center of Buoyancy (VCB) [m]	8.18
Longitudinal Center of Floatation (LCF) [m]	121.25
Transversal moment of inertia of waterplane area IT [m ⁴]	1320000
Longitudinal moment of inertia of waterplane area IL [m ⁴]	41400000
Block coefficient c_B [-]	0.64

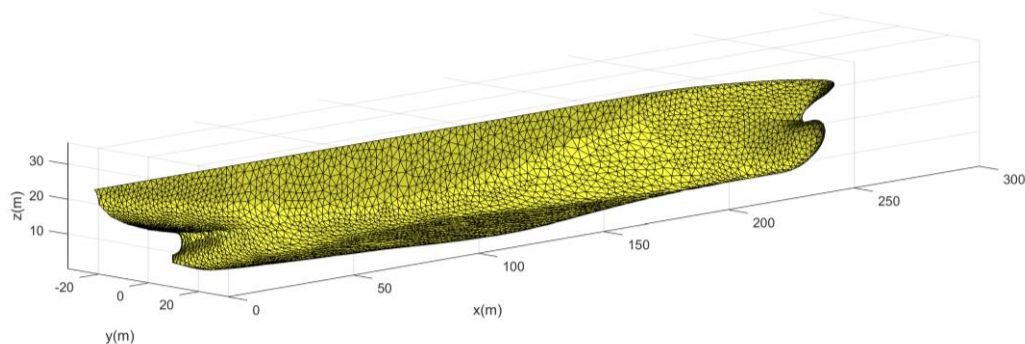
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

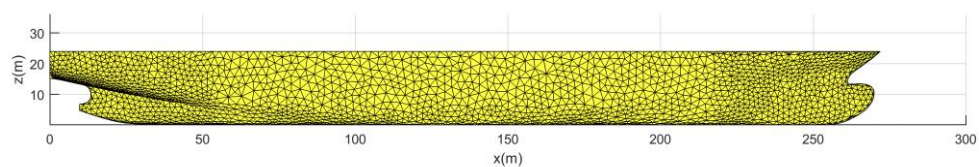


Date

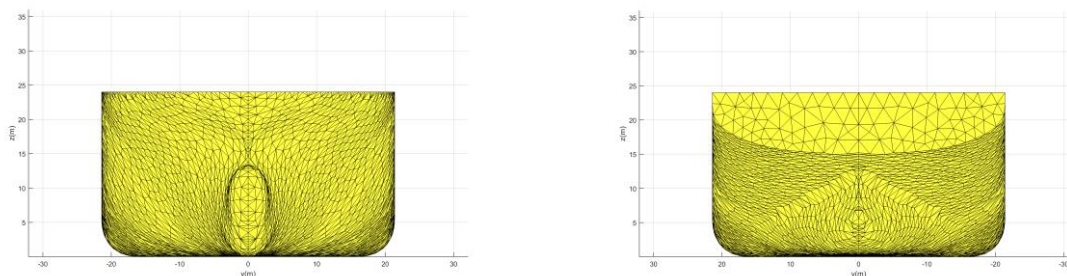
February 2017

Vessel ID	Con-10b
Hull file name	Con-10b_Panelfile_6900TEU_b.hull
Vessel type	Container carrier, Post-Panamax
Length over all (LOA) [m]	270.0
Length between perpendiculars (LPP) [m]	259.0
Breadth [m]	42.8
Design draught [m]	14.5
Height [m]	24.0
Capacity (TEU) [-]	6865
Hydrostatics for Design Draught	
Volume [m ³]	111805
Longitudinal Center of Buoyancy (LCB) [m]	129.0
Vertical Center of Buoyancy (VCB) [m]	7.96
Longitudinal Center of Floatation (LCF) [m]	121.32
Transversal moment of inertia of waterplane area IT [m ⁴]	1330000
Longitudinal moment of inertia of waterplane area IL [m ⁴]	42300000
Block coefficient C_B [-]	0.70

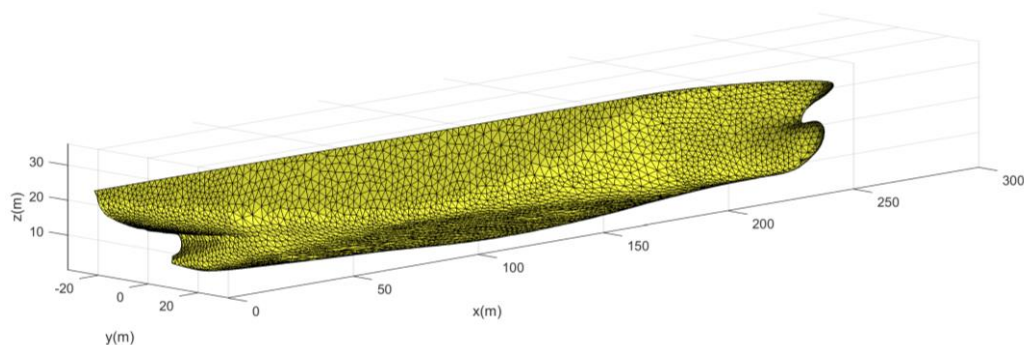
Longitudinal profile



Lateral profile (left: bow, right: aft)



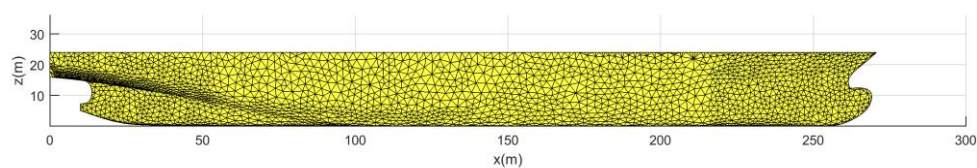
3D view



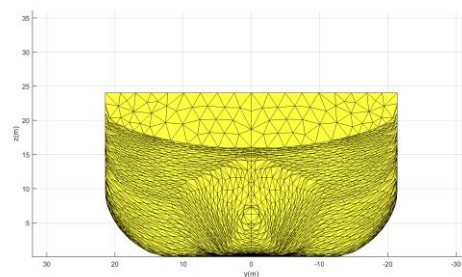
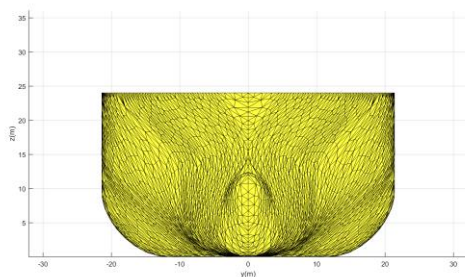
Date	December 2017
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Vessel ID	Con-10c
Hull file name	Con-10c_Panelfile_6900TEU_c.hull
Vessel type	Container carrier, Post-Panamax
Length over all (LOA) [m]	270.0
Length between perpendiculars (LPP) [m]	259.0
Breadth [m]	42.8
Design draught [m]	14.5
Height [m]	24.0
Capacity (TEU) [-]	6865
Hydrostatics for Design Draught	
Volume [m ³]	90240
Longitudinal Center of Buoyancy (LCB) [m]	127.2
Vertical Center of Buoyancy (VCB) [m]	8.22
Longitudinal Center of Floatation (LCF) [m]	117.91
Transversal moment of inertia of waterplane area IT [m ⁴]	1070000
Longitudinal moment of inertia of waterplane area IL [m ⁴]	29600000
Block coefficient c_B [-]	0.56

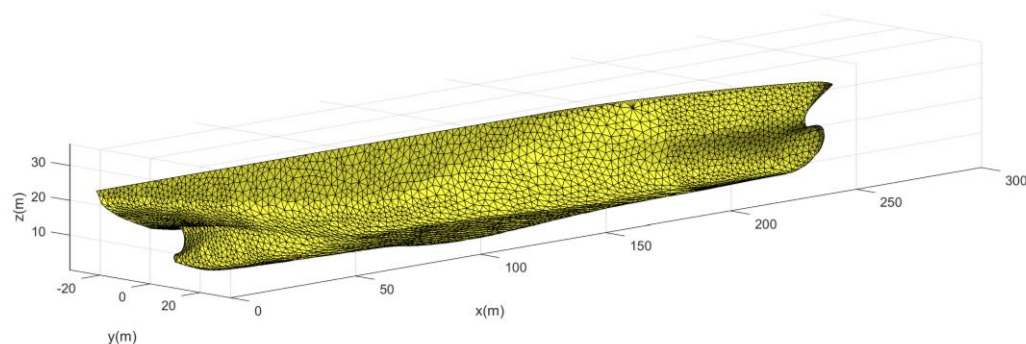
Longitudinal profile



Lateral profile (left: bow, right: aft)



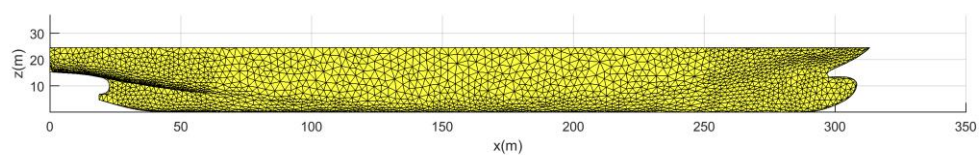
3D view



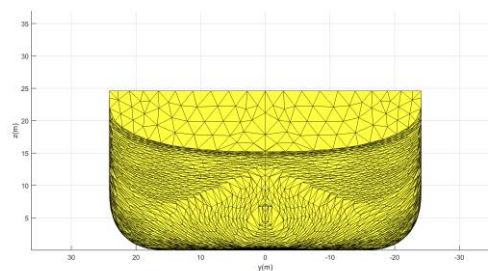
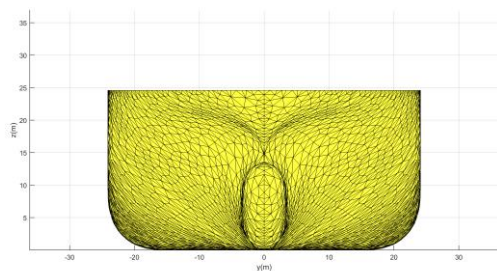
Date	December 2017
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Vessel ID	Con-11
Hull file name	Con-11_Panelfile_10800TEU.hull
Vessel type	Container carrier, ULCS
Length over all (LOA) [m]	314.4
Length between perpendiculars (LPP) [m]	286.4
Breadth [m]	48.2
Design draught [m]	14.6
Height [m]	24.6
Capacity (TEU) [-]	10800
Hydrostatics for Design Draught	
Volume [m ³]	134854
Longitudinal Center of Buoyancy (LCB) [m]	141.7
Vertical Center of Buoyancy (VCB) [m]	8.18
Longitudinal Center of Floatation (LCF) [m]	134.78
Transversal moment of inertia of waterplane area IT [m ⁴]	2150000
Longitudinal moment of inertia of waterplane area IL [m ⁴]	61600000
Block coefficient c_B [-]	0.67

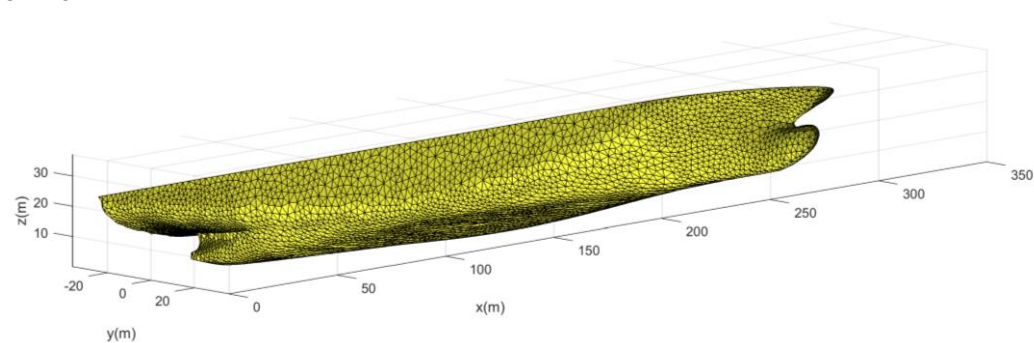
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

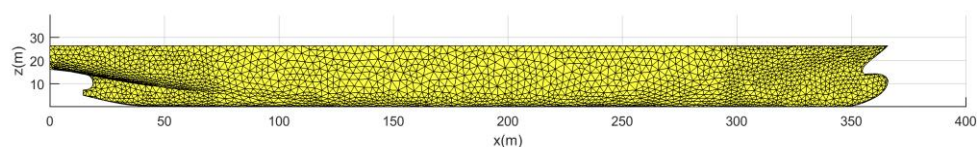


Date

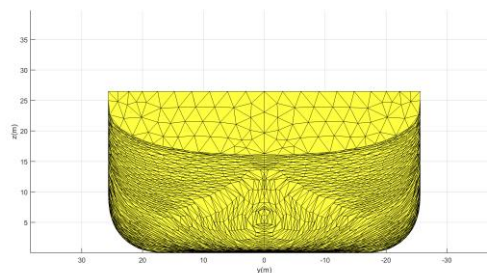
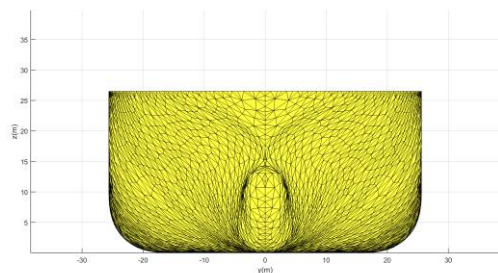
February 2017

Vessel ID	Con-12
Hull file name	Con-12_Panelfile_14500TEU.hull
Vessel type	Container carrier, ULCS
Length over all (LOA) [m]	366.0
Length between perpendiculars (LPP) [m]	350.5
Breadth [m]	51.2
Design draught [m]	15.5
Height [m]	26.5
Capacity (TEU) [-]	14500
Hydrostatics for Design Draught	
Volume [m ³]	189119
Longitudinal Center of Buoyancy (LCB) [m]	174.3
Vertical Center of Buoyancy (VCB) [m]	8.60
Longitudinal Center of Floatation (LCF) [m]	164.71
Transversal moment of inertia of waterplane area IT [m ⁴]	3080000
Longitudinal moment of inertia of waterplane area IL [m ⁴]	122000000
Block coefficient c_B [-]	0.68

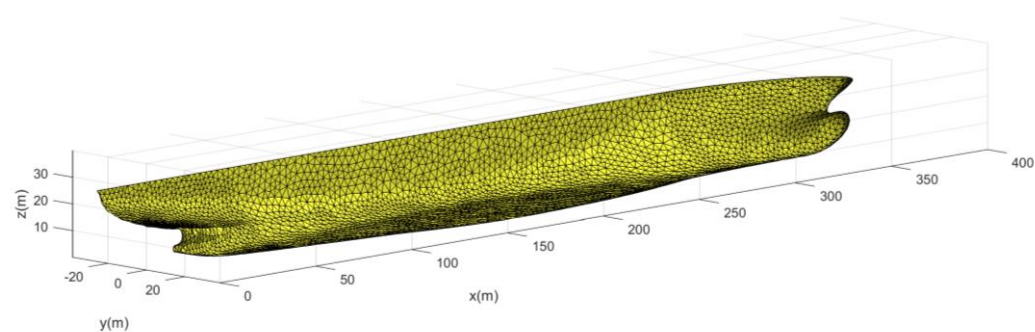
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

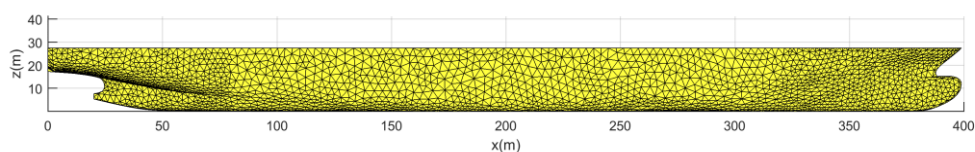


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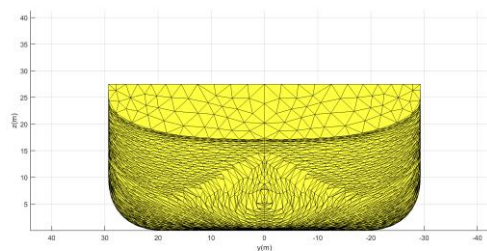
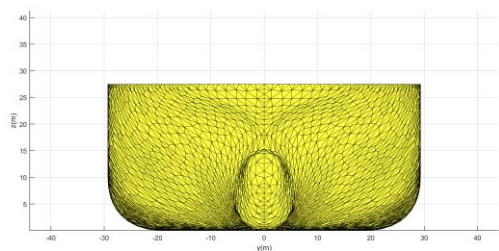
February 2017

Vessel ID	Con-13
Hull file name	Con-13_Panelfile_20000TEU.hull
Vessel type	Container carrier, ULCS
Length over all (LOA) [m]	399.0
Length between perpendiculars (LPP) [m]	378.5
Breadth [m]	58.6
Design draught [m]	16.5
Height [m]	27.5
Capacity (TEU) [-]	19630
Hydrostatics for Design Draught	
Volume [m ³]	252455
Longitudinal Center of Buoyancy (LCB) [m]	188.7
Vertical Center of Buoyancy (VCB) [m]	9.18
Longitudinal Center of Floatation (LCF) [m]	178.78
Transversal moment of inertia of waterplane area IT [m ⁴]	5140000
Longitudinal moment of inertia of waterplane area IL [m ⁴]	186000000
Block coefficient c_B [-]	0.69

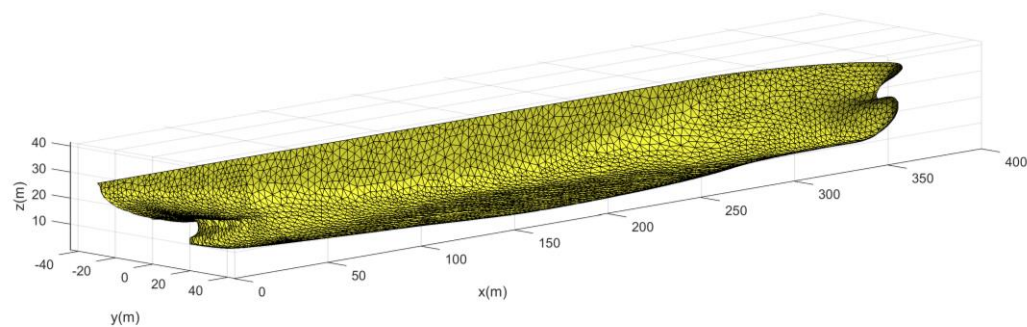
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

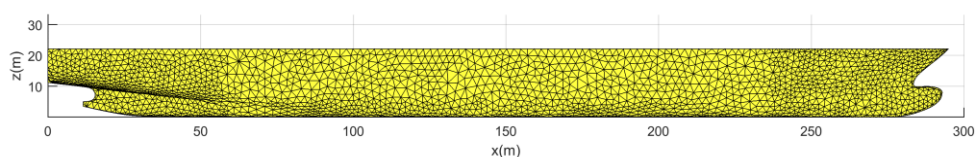


Date

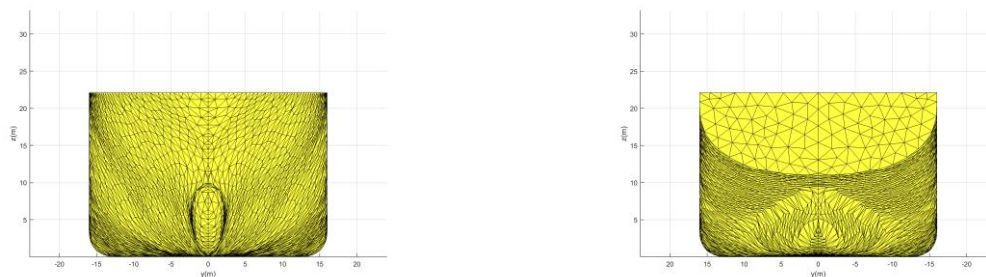
February 2017

Vessel ID	Con-14
Hull file name	Con-14_Panelfile_5040TEU.hull
Vessel type	Container carrier, Panamax
Length over all (LOA) [m]	294.0
Length between perpendiculars (LPP) [m]	280.0
Breadth [m]	32.0
Design draught [m]	10.7
Height [m]	22.1
Capacity (TEU) [-]	5040
Hydrostatics for Design Draught	
Volume [m ³]	65063
Longitudinal Center of Buoyancy (LCB) [m]	139.3
Vertical Center of Buoyancy (VCB) [m]	5.87
Longitudinal Center of Floatation (LCF) [m]	132.0
Transversal moment of inertia of waterplane area IT [m ⁴]	573000
Longitudinal moment of inertia of waterplane area IL [m ⁴]	38400000
Block coefficient C_B [-]	0.68

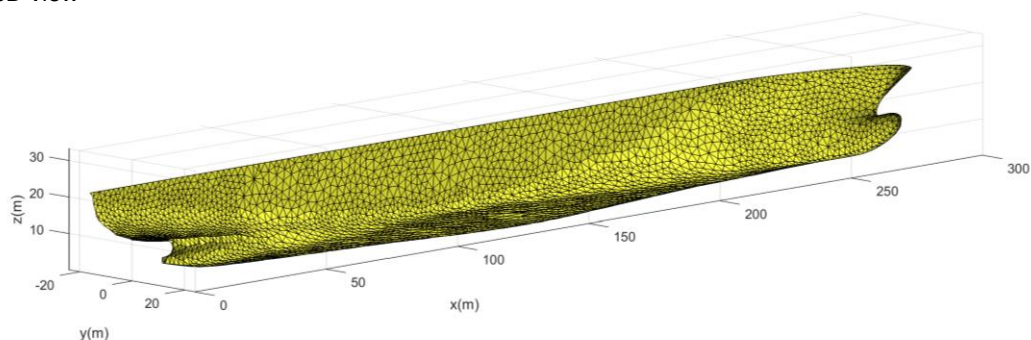
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

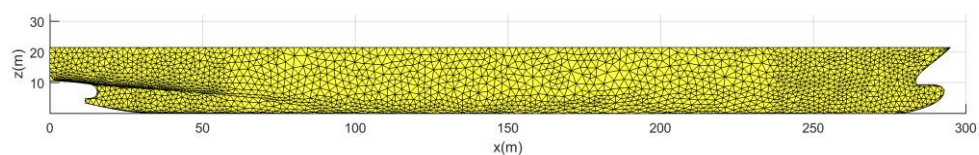


Date

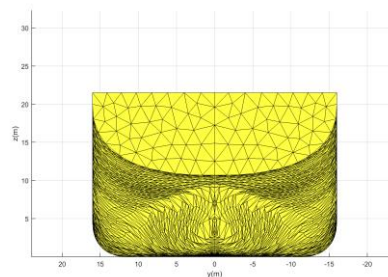
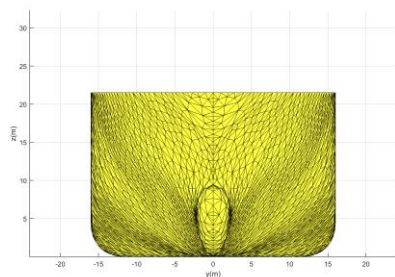
December 2017

Vessel ID	Con-14b
Hull file name	Con-14b_Panelfile_5040TEU.hull
Vessel type	Container carrier, ULCS
Length over all (LOA) [m]	294.0
Length between perpendiculars (LPP) [m]	280.0
Breadth [m]	32.0
Design draught [m]	10.2
Height [m]	21.5
Capacity (TEU) [-]	5040
Hydrostatics for Design Draught	
Volume [m ³]	57664
Longitudinal Center of Buoyancy (LCB) [m]	138.0
Vertical Center of Buoyancy (VCB) [m]	5.68
Longitudinal Center of Floatation (LCF) [m]	133.23
Transversal moment of inertia of waterplane area IT [m ⁴]	547000
Longitudinal moment of inertia of waterplane area IL [m ⁴]	35800000
Block coefficient c_B [-]	0.63

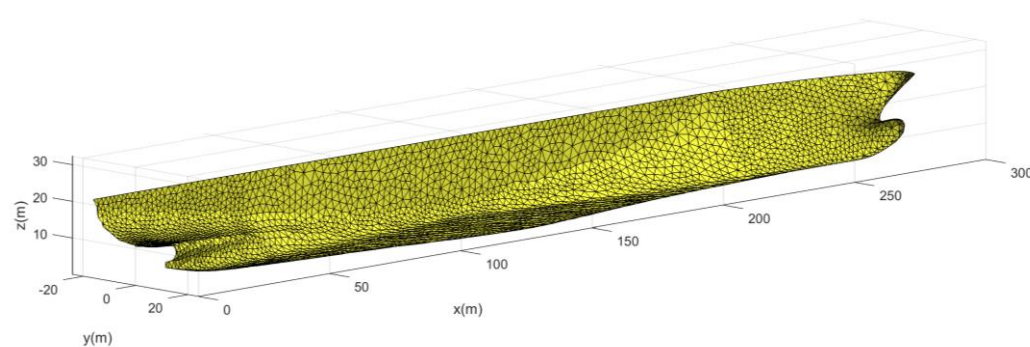
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view



Date

December 2017

3.3 Cruise Ships

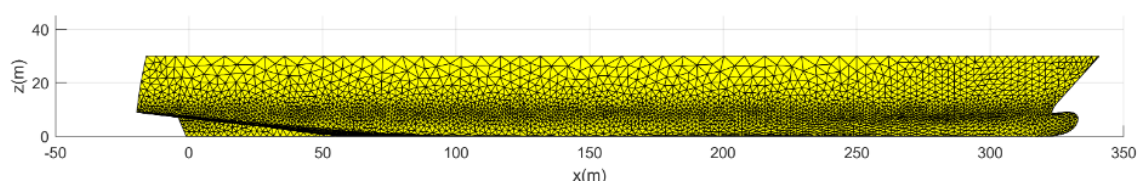
This section represents the vessel characteristics for wave response analyses for the two largest classes in operation.

All cruise hulls are generated generically. They are adjusted to fit the main dimensions of the actual classes in operation. The corresponding FORCE Technology project with project number 119-30960 was initiated.

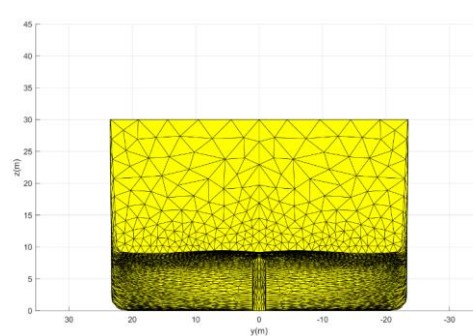
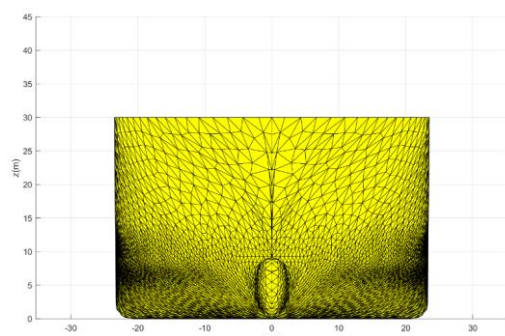
The displacement was selected to cover the most probable range. LCB has been selected based on inhouse data.

Vessel ID	CR-01
Hull file name	01Cruise.hull
Vessel type	Oasis class
Length over all (LOA) [m]	356.8
Length between perpendiculars (LPP) [m]	323.1
Breadth [m]	47.0
Design draught [m]	9.3
Height [m]	30.0
Capacity (TEU) [-]	
Hydrostatics for Design Draught	
Volume [m ³]	106194
Longitudinal Center of Buoyancy (LCB) [m]	148.6
Vertical Center of Buoyancy (VCB) [m]	5.16
Longitudinal Center of Floatation (LCF) [m]	138.13
Transversal moment of inertia of waterplane area IT [m ⁴]	2.468·10 ⁶
Longitudinal moment of inertia of waterplane area IL [m ⁴]	121.966·10 ⁶
Block coefficient c _B [-]	0.40

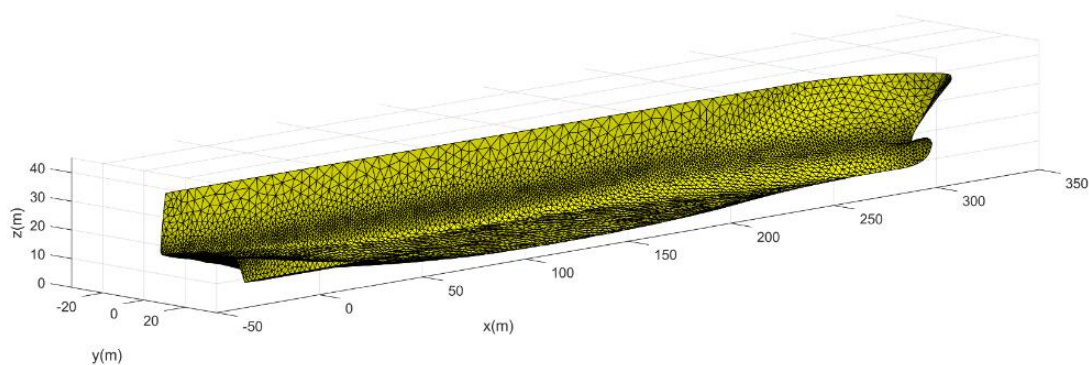
Longitudinal profile



Lateral profile (left: bow, right: aft)



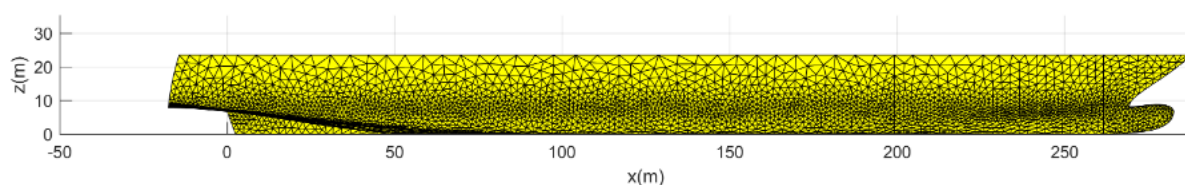
3D view



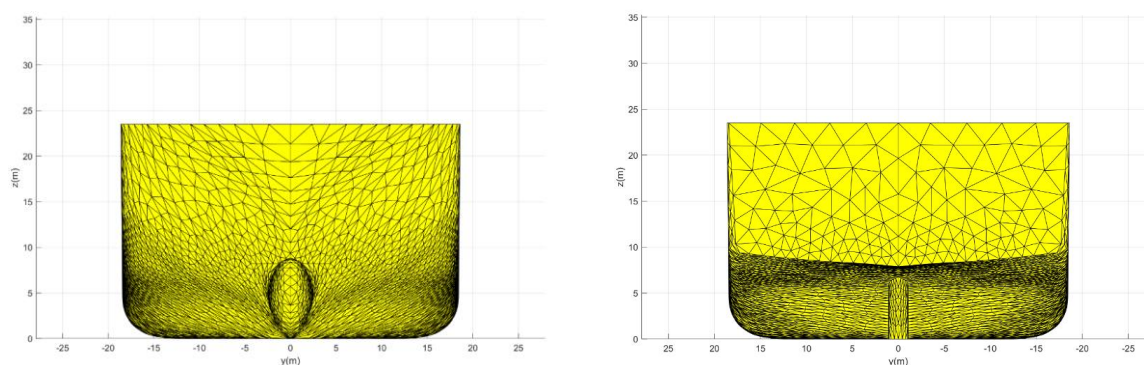
Date	April 2021
Vessel ID	CR-02

Hull file name	02Cruise.hull
Vessel type	Dream class
Length over all (LOA) [m]	302.1
Length between perpendiculars (LPP) [m]	269.2
Breadth [m]	37.2
Design draught [m]	8.2
Height [m]	23.5
Capacity (TEU) [-]	
Hydrostatics for Design Draught	
Volume [m ³]	61225
Longitudinal Center of Buoyancy (LCB) [m]	130.0
Vertical Center of Buoyancy (VCB) [m]	5.59
Longitudinal Center of Floatation (LCF) [m]	118.99
Transversal moment of inertia of waterplane area IT [m ⁴]	1.041·10 ⁶
Longitudinal moment of inertia of waterplane area IL [m ⁴]	57.481·10 ⁶
Block coefficient c _B [-]	

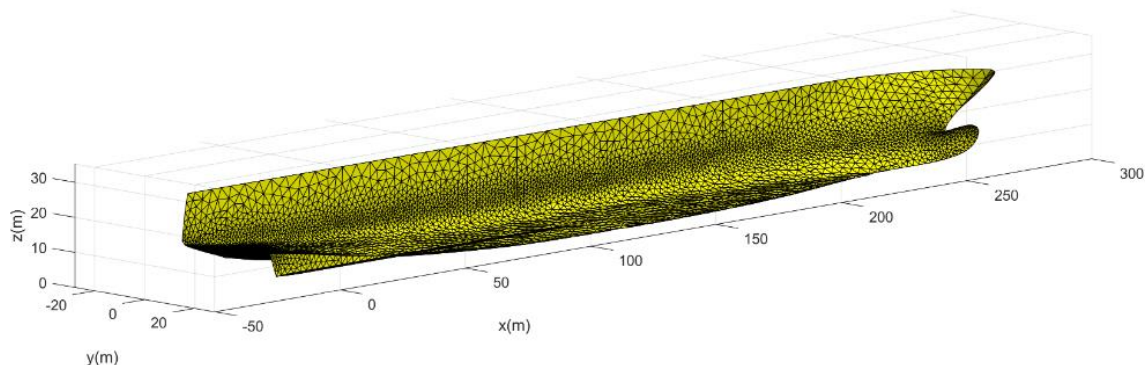
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view



Date	April 2021
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3.4 LNG Carriers

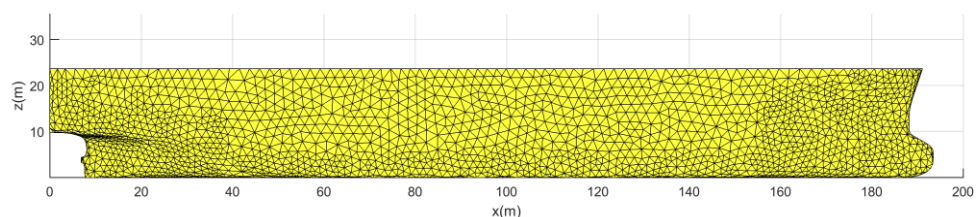
This section represents the vessel characteristics for wave response analyses for 7 single screw LNG carrier new buildings of the next years.

All vessels are generated generically. They are adjusted to fit the main dimensions of the individual new buildings.

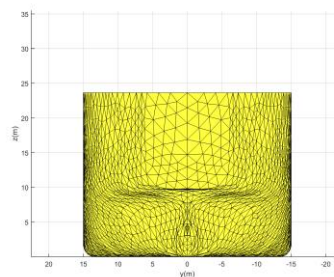
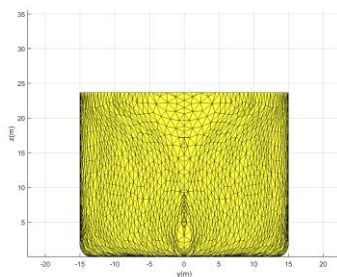
The hydrostatic characteristics such as the longitudinal Center of Buoyancy (LCB) and block coefficients (cB) have been selected based on /1/ and /2/, respectively.

Vessel ID	LNG-01
Hull file name	LNG-01.hull
Vessel type	LNG Tanker
Length over all (LOA) [m]	195.2
Length between perpendiculars (LPP) [m]	184.8
Breadth [m]	30.0
Design draught [m]	10.3
Height [m]	23.5
Hydrostatics for Design Draught	
Volume [m ³]	44873
Longitudinal Center of Buoyancy (LCB) [m]	92.4
Vertical Center of Buoyancy (VCB) [m]	5.33
Longitudinal Center of Floatation (LCF) [m]	85.86
Transversal moment of inertia of waterplane area IT [m ⁴]	316000
Longitudinal moment of inertia of waterplane area IL [m ⁴]	10800000
Block coefficient C_B [-]	0.79

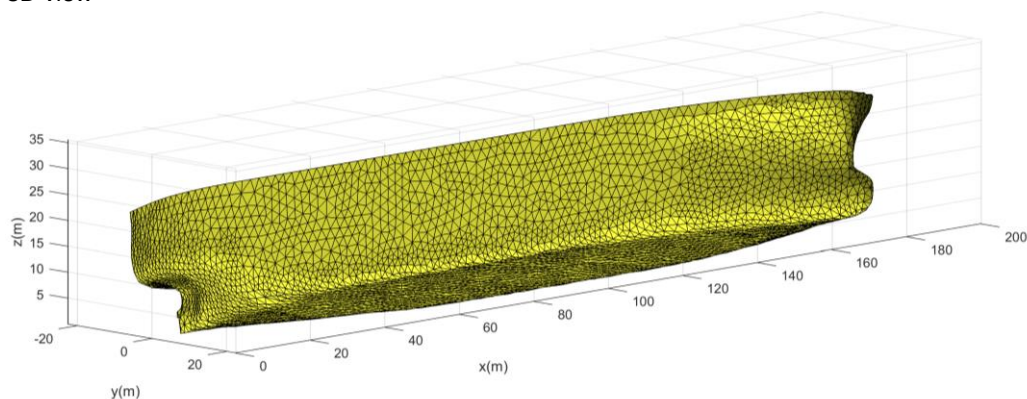
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

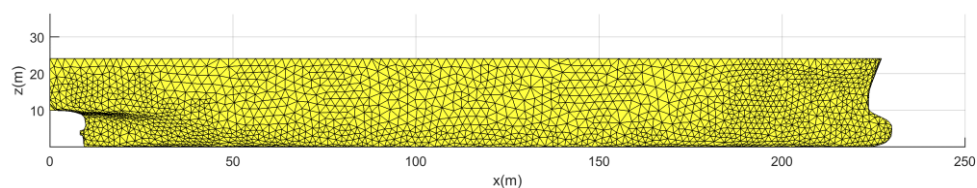


Date

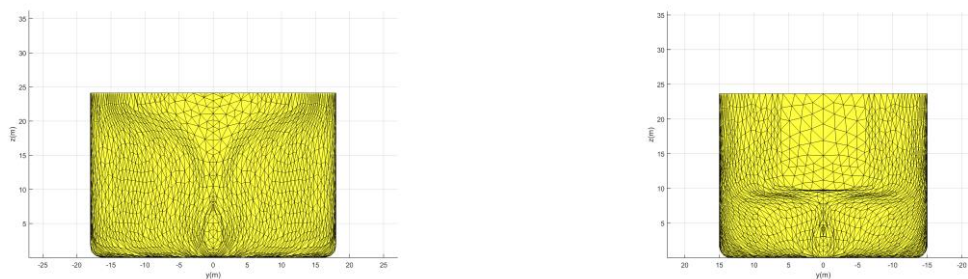
January 2018

Vessel ID	LNG-02
Hull file name	LNG-02.hull
Vessel type	LNG Tanker
Length over all (LOA) [m]	230.0
Length between perpendiculars (LPP) [m]	219.7
Breadth [m]	36.0
Design draught [m]	10.5
Height [m]	24.0
Hydrostatics for Design Draught	
Volume [m ³]	64292
Longitudinal Center of Buoyancy (LCB) [m]	110.0
Vertical Center of Buoyancy (VCB) [m]	5.44
Longitudinal Center of Floatation (LCF) [m]	101.56
Transversal moment of inertia of waterplane area IT [m ⁴]	640000
Longitudinal moment of inertia of waterplane area IL [m ⁴]	21300000
Block coefficient C_B [-]	0.77

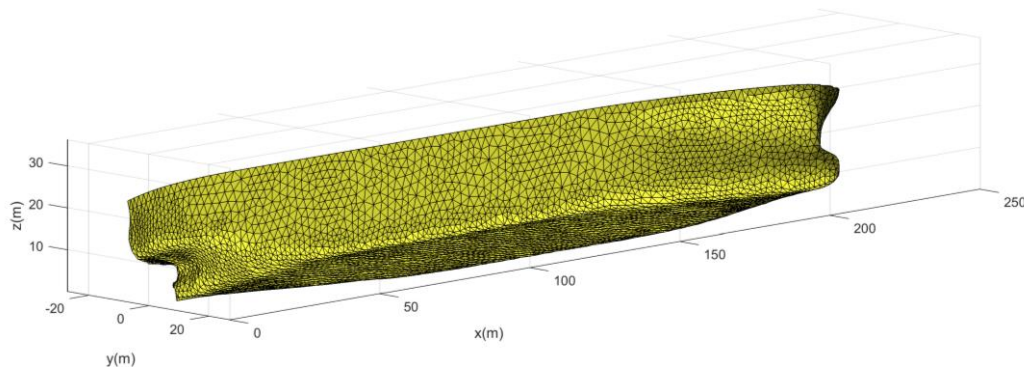
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

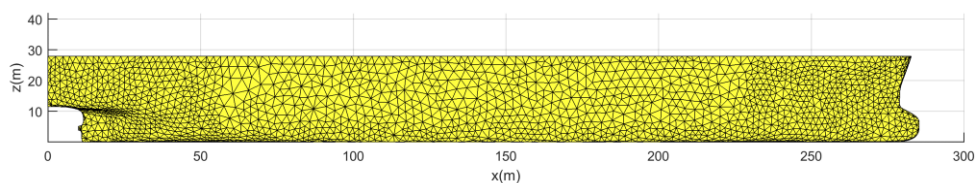


Date

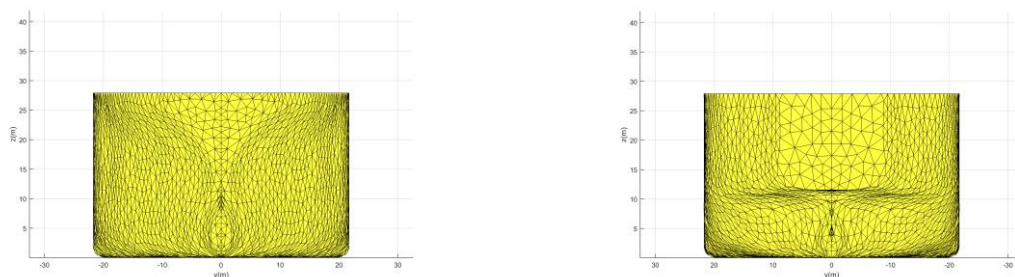
January 2018

Vessel ID	LNG-03
Hull file name	LNG-03.hull
Vessel type	LNG Tanker
Length over all (LOA) [m]	285.4
Length between perpendiculars (LPP) [m]	274.0
Breadth [m]	43.4
Design draught [m]	12.2
Height [m]	28.0
Hydrostatics for Design Draught	
Volume [m ³]	115717
Longitudinal Center of Buoyancy (LCB) [m]	135.9
Vertical Center of Buoyancy (VCB) [m]	6.26
Longitudinal Center of Floatation (LCF) [m]	127.24
Transversal moment of inertia of waterplane area IT [m ⁴]	1440000
Longitudinal moment of inertia of waterplane area IL [m ⁴]	51900000
Block coefficient C_B [-]	0.80

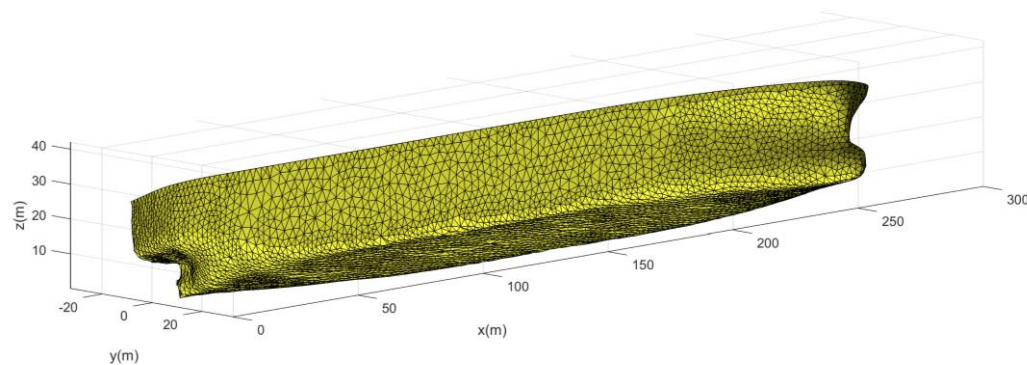
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

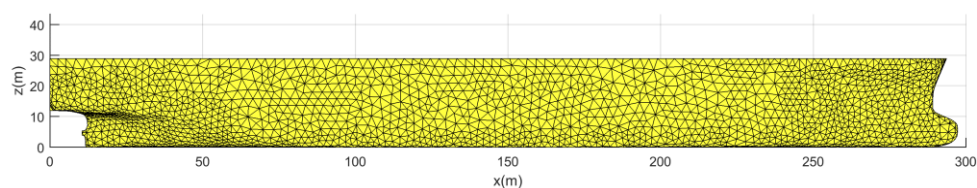


Date

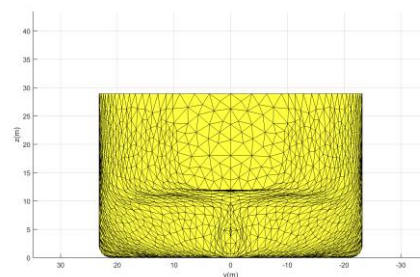
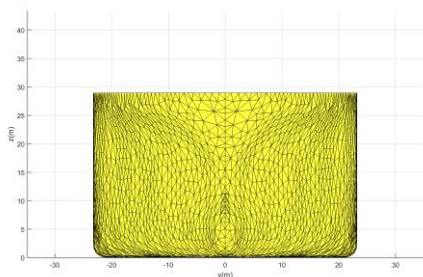
January 2018

Vessel ID	LNG-04
Hull file name	LNG-04.hull
Vessel type	LNG Tanker
Length over all (LOA) [m]	297.3
Length between perpendiculars (LPP) [m]	284.0
Breadth [m]	46.4
Design draught [m]	12.6
Height [m]	29.0
Hydrostatics for Design Draught	
Volume [m ³]	131623
Longitudinal Center of Buoyancy (LCB) [m]	141.2
Vertical Center of Buoyancy (VCB) [m]	6.50
Longitudinal Center of Floatation (LCF) [m]	131.74
Transversal moment of inertia of waterplane area IT [m ⁴]	1810000
Longitudinal moment of inertia of waterplane area IL [m ⁴]	60700000
Block coefficient C_B [-]	0.79

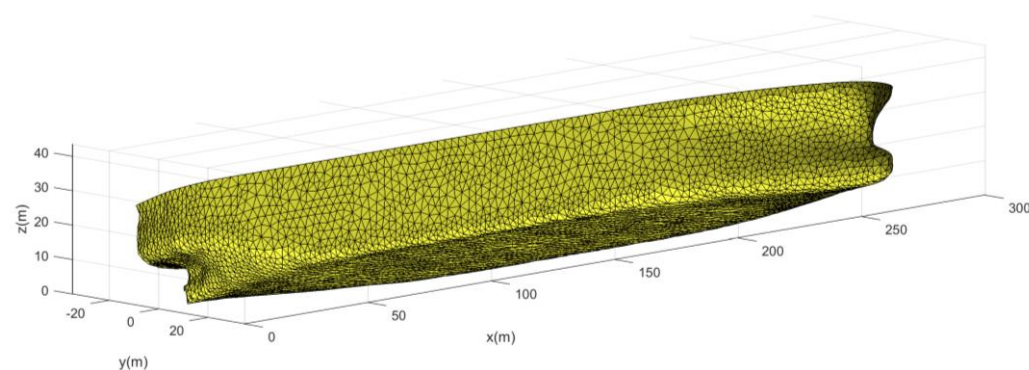
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

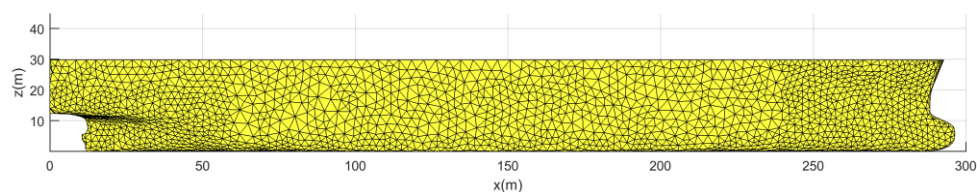


Date

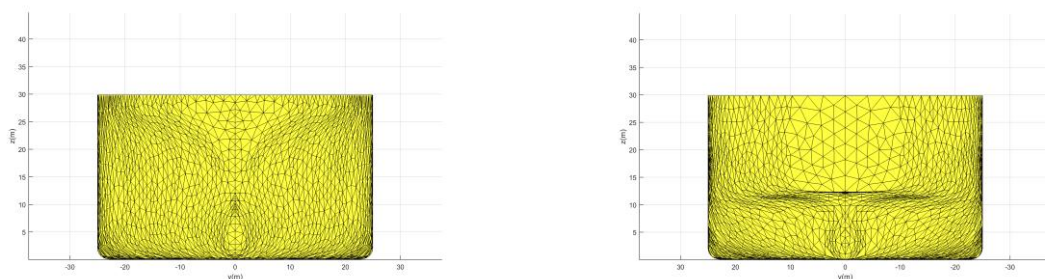
January 2018

Vessel ID	LNG-05
Hull file name	LNG-05.hull
Vessel type	LNG Tanker
Length over all (LOA) [m]	295.5
Length between perpendiculars (LPP) [m]	283.1
Breadth [m]	50.0
Design draught [m]	13.0
Height [m]	30.0
Hydrostatics for Design Draught	
Volume [m ³]	145028
Longitudinal Center of Buoyancy (LCB) [m]	141.5
Vertical Center of Buoyancy (VCB) [m]	6.72
Longitudinal Center of Floatation (LCF) [m]	131.63
Transversal moment of inertia of waterplane area IT [m ⁴]	2250000
Longitudinal moment of inertia of waterplane area IL [m ⁴]	64800000
Block coefficient C_B [-]	0.79

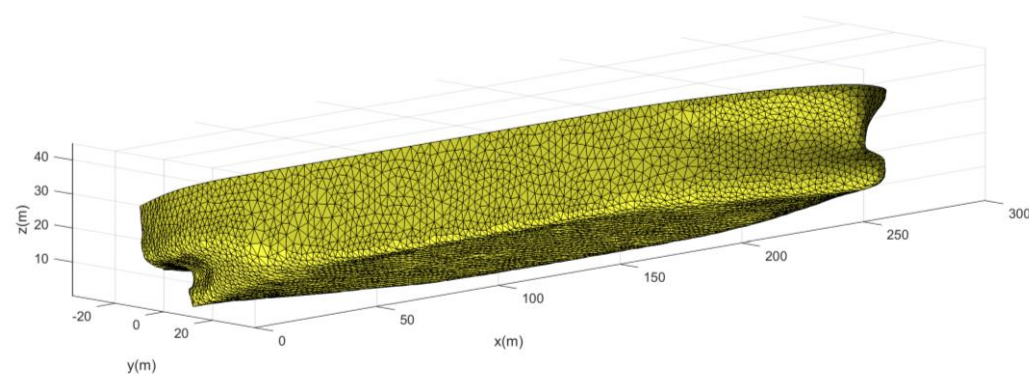
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

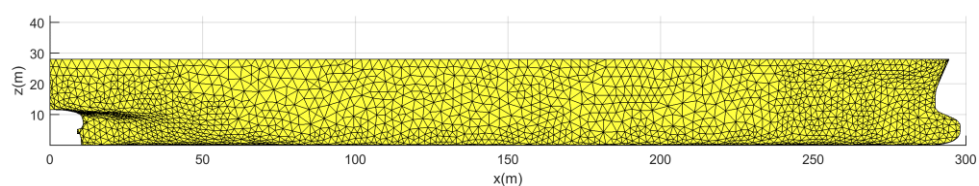


Date

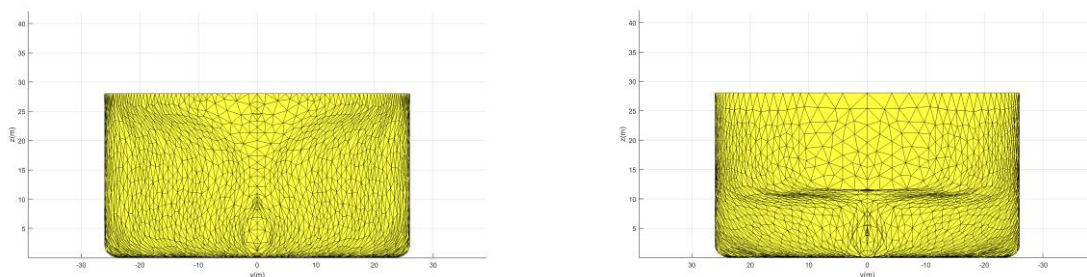
January 2018

Vessel ID	LNG-06
Hull file name	LNG-06.hull
Vessel type	LNG Tanker
Length over all (LOA) [m]	298.2
Length between perpendiculars (LPP) [m]	286.5
Breadth [m]	52.0
Design draught [m]	12.2
Height [m]	28.0
Hydrostatics for Design Draught	
Volume [m ³]	142086
Longitudinal Center of Buoyancy (LCB) [m]	143.0
Vertical Center of Buoyancy (VCB) [m]	6.30
Longitudinal Center of Floatation (LCF) [m]	133.22
Transversal moment of inertia of waterplane area IT [m ⁴]	2530000
Longitudinal moment of inertia of waterplane area IL [m ⁴]	68000000
Block coefficient C_B [-]	0.78

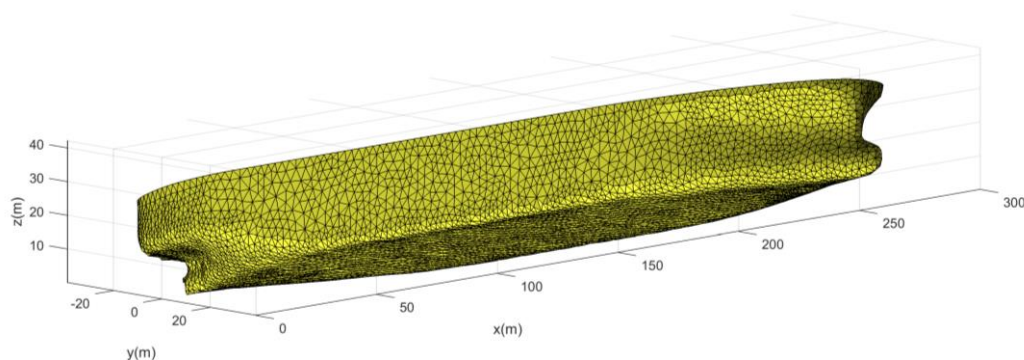
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

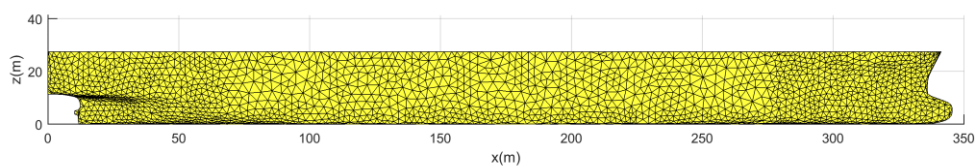


Date

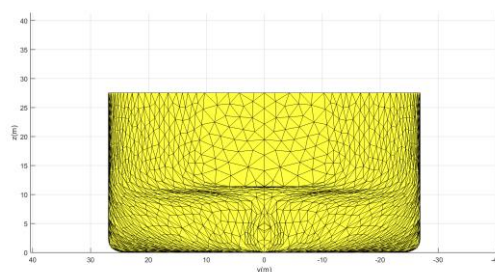
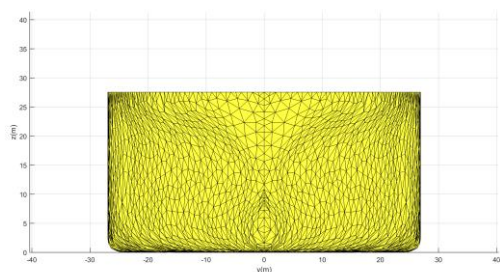
January 2018

Vessel ID	LNG-07
Hull file name	LNG-07.hull
Vessel type	LNG Tanker
Length over all (LOA) [m]	345.0
Length between perpendiculars (LPP) [m]	332.0
Breadth [m]	53.8
Design draught [m]	12.0
Height [m]	27.0
Hydrostatics for Design Draught	
Volume [m ³]	170755
Longitudinal Center of Buoyancy (LCB) [m]	165.7
Vertical Center of Buoyancy (VCB) [m]	6.19
Longitudinal Center of Floatation (LCF) [m]	154.84
Transversal moment of inertia of waterplane area IT [m ⁴]	3320000
Longitudinal moment of inertia of waterplane area IL [m ⁴]	113000000
Block coefficient C_B [-]	0.80

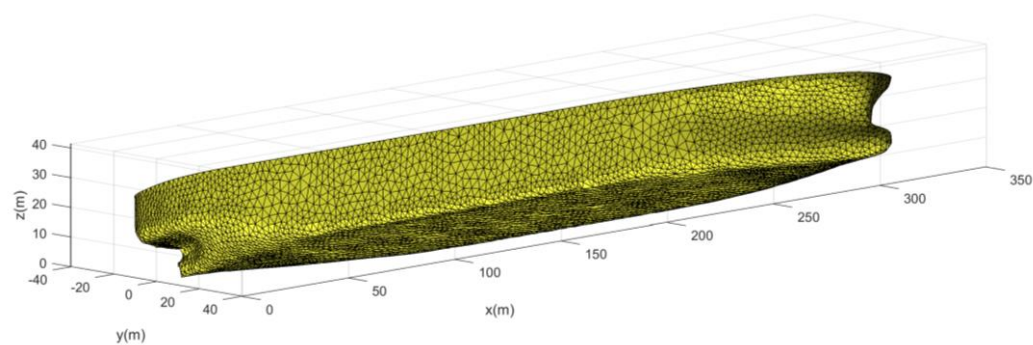
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view



Date

January 2018

3.5 Super Yachts

The following list of super yachts represents 5 representative super yachts.

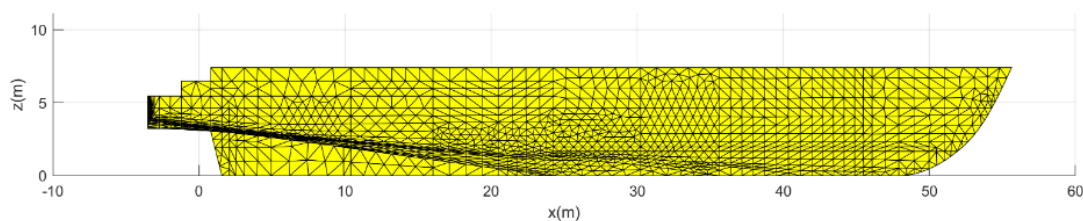
All yachts are generated generically. They are adjusted to fit the main dimensions of a list defined by DHI and Applied Technology and Management, Inc. (Dubai Branch).

The corresponding FORCE Technology project with project number 119-30960 was initiated.

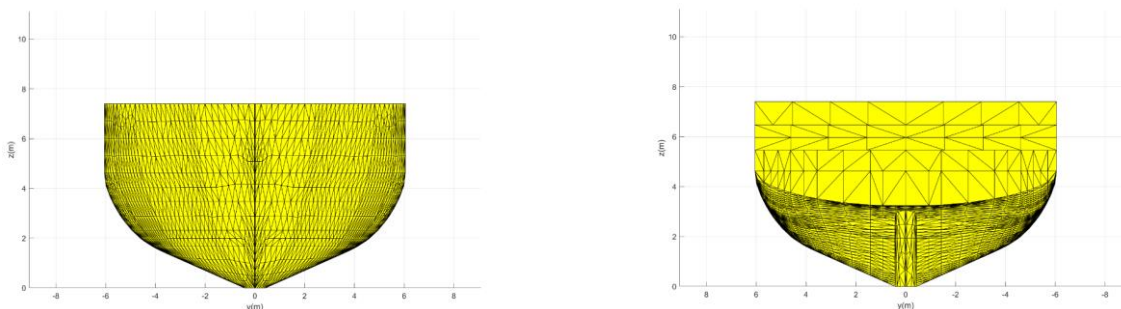
The displacement was selected by the Client. LCB has been selected based on inhouse data.

Vessel ID	SYA-01
Hull file name	01SYA.hull
Vessel type	Super Yacht
Length over all (LOA) [m]	60.0
Length between perpendiculars (LPP) [m]	54.0
Breadth [m]	12.1
Design draught [m]	3.7
Height [m]	7.4
Capacity (TEU) [-]	
Hydrostatics for Design Draught	
Volume [m ³]	977
Longitudinal Center of Buoyancy (LCB) [m]	24.7
Vertical Center of Buoyancy (VCB) [m]	2.43
Longitudinal Center of Floatation (LCF) [m]	19.93
Transversal moment of inertia of waterplane area IT [m ⁴]	4.84E+03
Longitudinal moment of inertia of waterplane area IL [m ⁴]	9.94E+04
Block coefficient c_B [-]	0.40

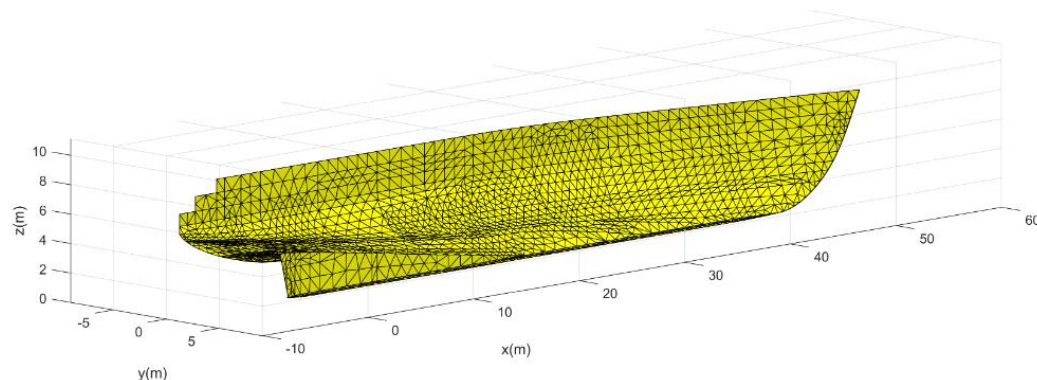
Longitudinal profile



Lateral profile (left: bow, right: aft)



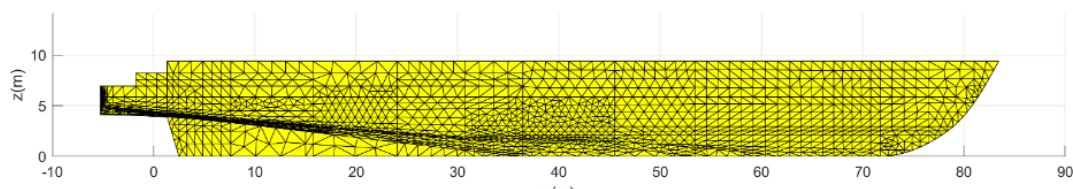
3D view



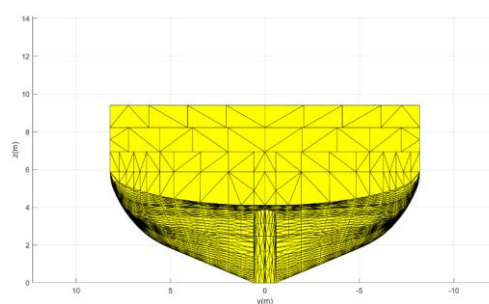
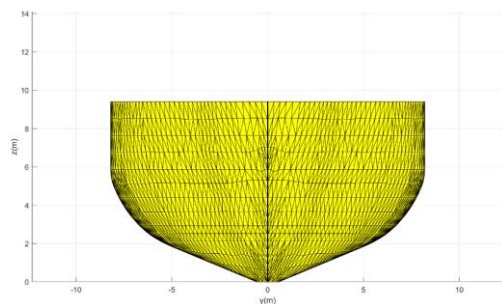
Date	April 2021
Vessel ID	SYA-02
Hull file name	02SYA.hull

Vessel type	Super Yacht
Length over all (LOA) [m]	90.0
Length between perpendiculars (LPP) [m]	81.0
Breadth [m]	16.4
Design draught [m]	4.7
Height [m]	7.6
Capacity (TEU) [-]	
Hydrostatics for Design Draught	
Volume [m ³]	2517
Longitudinal Center of Buoyancy (LCB) [m]	37.0
Vertical Center of Buoyancy (VCB) [m]	3.09
Longitudinal Center of Floatation (LCF) [m]	29.96
Transversal moment of inertia of waterplane area IT [m ⁴]	1.81E+04
Longitudinal moment of inertia of waterplane area IL [m ⁴]	4.50E+04
Block coefficient c_B [-]	0.40

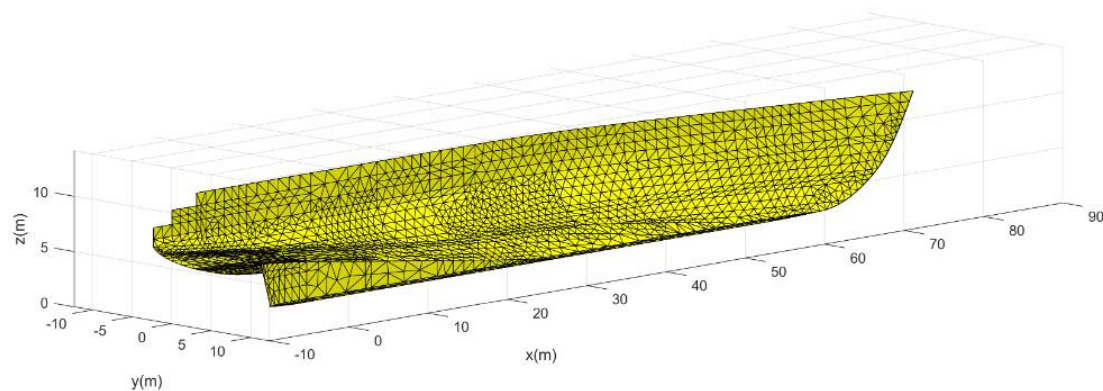
Longitudinal profile



Lateral profile (left: bow, right: aft)



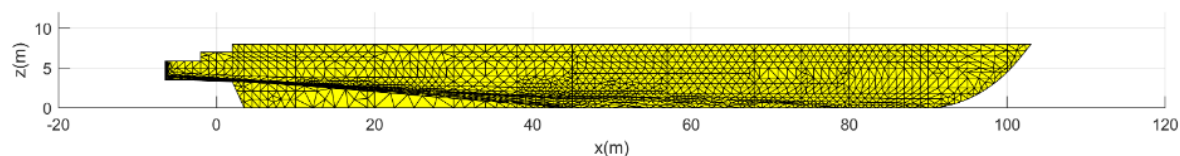
3D view



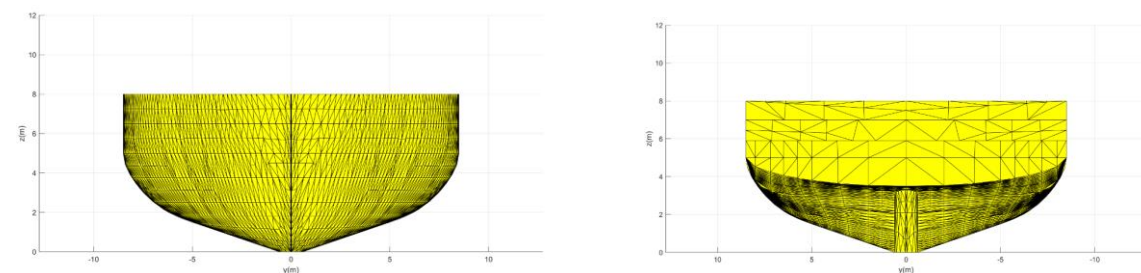
Date	April 2021
Vessel ID	SYA-03
Hull file name	03SYA.hull
Vessel type	Super Yacht

Length over all (LOA) [m]	110.0
Length between perpendiculars (LPP) [m]	100.0
Breadth [m]	17.0
Design draught [m]	4.5
Height [m]	8.0
Capacity (TEU) [-]	
Hydrostatics for Design Draught	
Volume [m ³]	3500
Longitudinal Center of Buoyancy (LCB) [m]	45.0
Vertical Center of Buoyancy (VCB) [m]	2.74
Longitudinal Center of Floatation (LCF) [m]	38.38
Transversal moment of inertia of waterplane area IT [m ⁴]	3.07E+04
Longitudinal moment of inertia of waterplane area IL [m ⁴]	1.04E+06
Block coefficient C_B [-]	

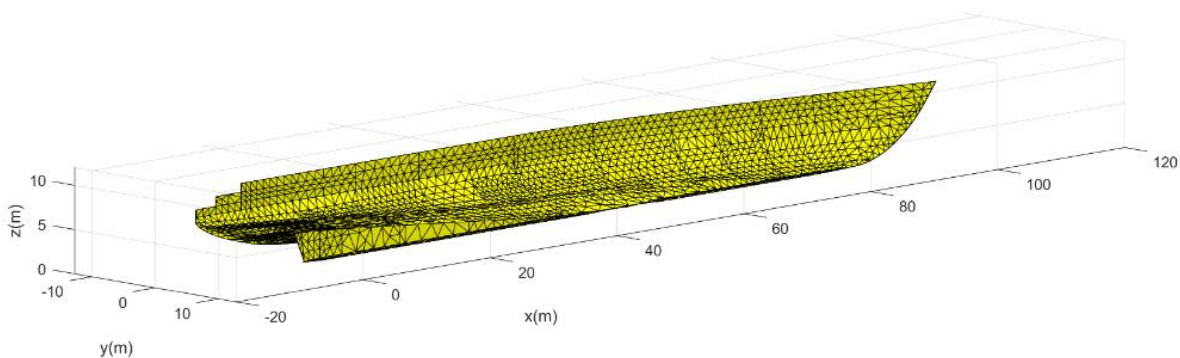
Longitudinal profile



Lateral profile (left: bow, right: aft)



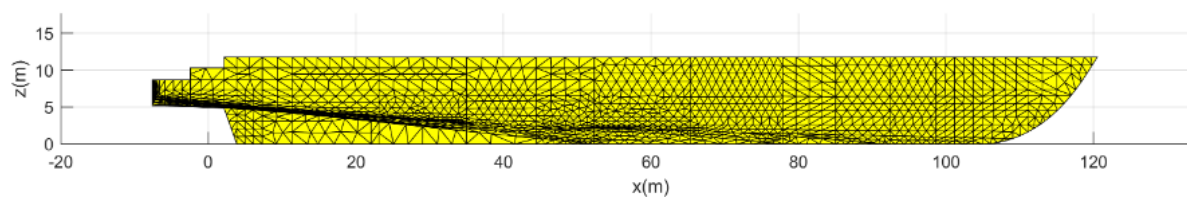
3D view



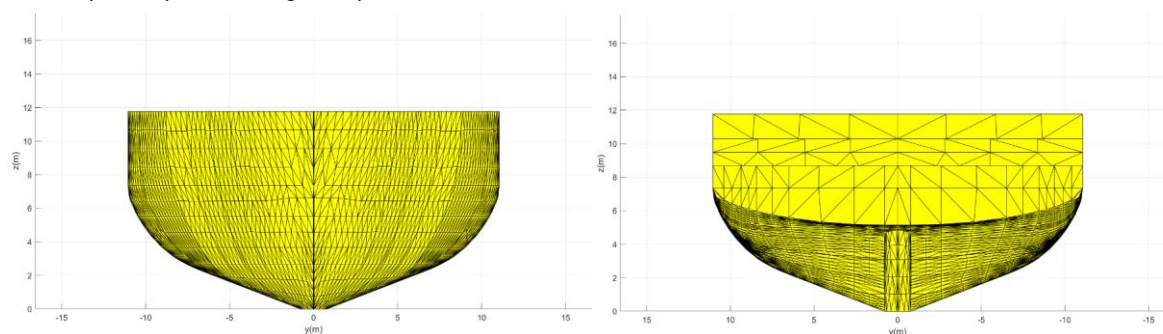
Date	April 2021
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Vessel ID	SYA-04
Hull file name	04SYA.hull
Vessel type	Super Yacht
Length over all (LOA) [m]	130.0
Length between perpendiculars (LPP) [m]	117.0
Breadth [m]	22.1
Design draught [m]	6.0
Height [m]	12.0
Capacity (TEU) [-]	
Hydrostatics for Design Draught	
Volume [m ³]	6283
Longitudinal Center of Buoyancy (LCB) [m]	53.3
Vertical Center of Buoyancy (VCB) [m]	4.00
Longitudinal Center of Floatation (LCF) [m]	45.58
Transversal moment of inertia of waterplane area IT [m ⁴]	6.58E+04
Longitudinal moment of inertia of waterplane area IL [m ⁴]	1.9E+06
Block coefficient c_B [-]	0.4

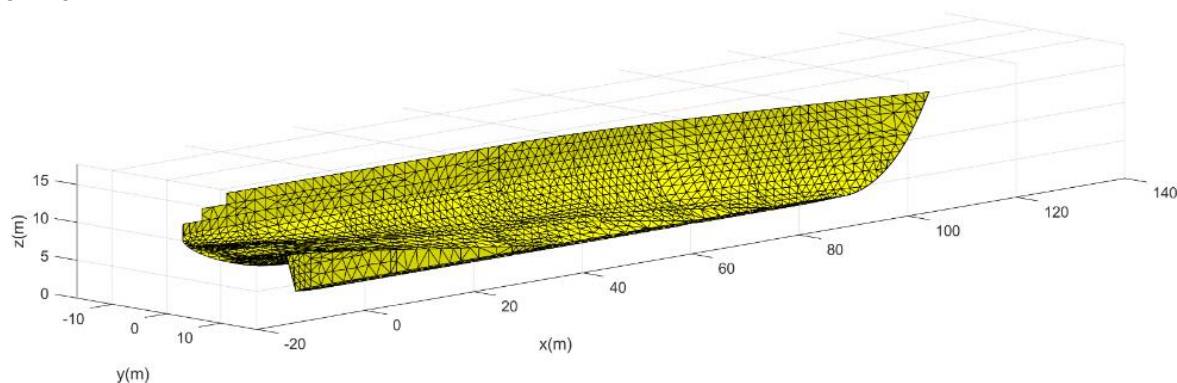
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

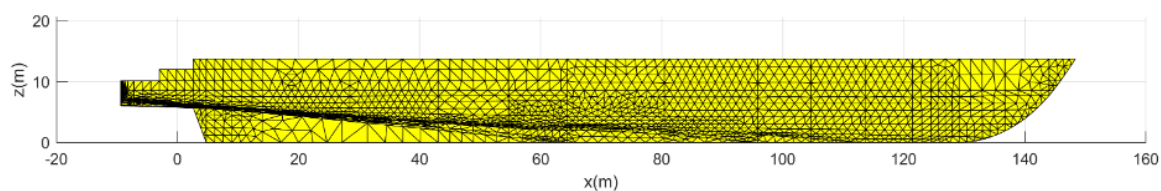


Date	April 2021
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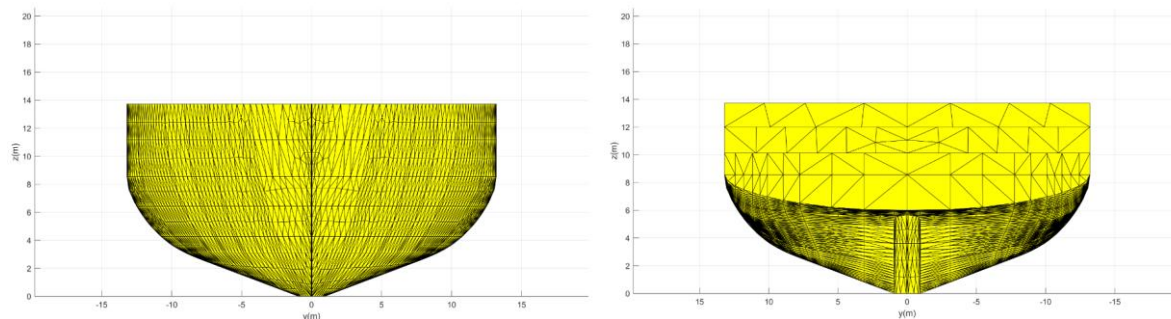
Vessel ID	SYA-05
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Hull file name	05SYA.hull
Vessel type	Super Yacht
Length over all (LOA) [m]	160.0
Length between perpendiculars (LPP) [m]	144.0
Breadth [m]	26.4
Design draught [m]	7.0
Height [m]	14.0
Capacity (TEU) [-]	
Hydrostatics for Design Draught	
Volume [m ³]	10743
Longitudinal Center of Buoyancy (LCB) [m]	65.5
Vertical Center of Buoyancy (VCB) [m]	0.72
Longitudinal Center of Floatation (LCF) [m]	53.56
Transversal moment of inertia of waterplane area IT [m ⁴]	1.38E+05
Longitudinal moment of inertia of waterplane area IL [m ⁴]	4.26E+06
Block coefficient c_B [-]	0.40

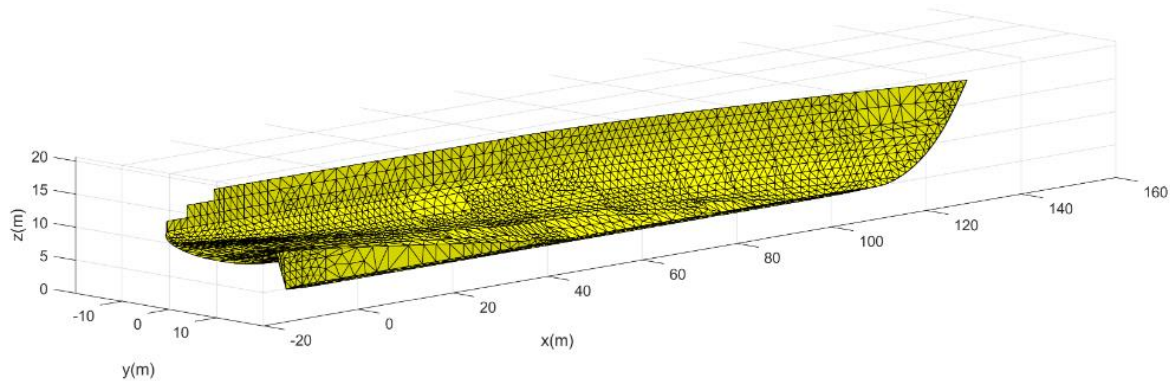
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view



Date	April 2021
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3.6 Tankers

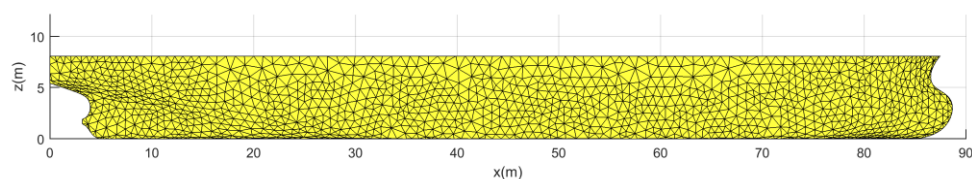
This section represents the vessel characteristics for wave response analyses for 9 representative scheduled tanker new buildings of the next years.

All tankers are generated generically. They are adjusted to fit the main dimensions of the individual new buildings.

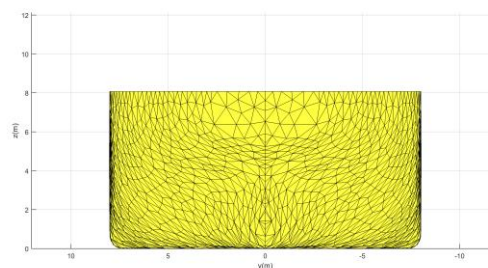
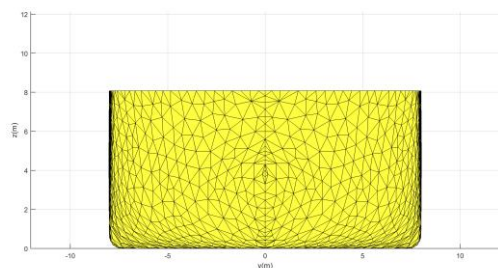
The hydrostatic characteristics such as the longitudinal Center of Buoyancy (LCB) and block coefficients (C_B) have been selected based on /1/ and /2/, respectively.

Vessel ID	Tan-01
Hull file name	Tan-01_Tanker_4500t.hull
Vessel type	Tanker, Small
Length over all (LOA) [m]	90.0
Length between perpendiculars (LPP) [m]	85.0
Breadth [m]	16.0
Design draught [m]	6.0
Height [m]	8.1
Capacity (TEU) [-]	4500
Hydrostatics for Design Draught	
Volume [m ³]	6775
Longitudinal Center of Buoyancy (LCB) [m]	45.5
Vertical Center of Buoyancy (VCB) [m]	3.12
Longitudinal Center of Floatation (LCF) [m]	42.64
Transversal moment of inertia of waterplane area IT [m ⁴]	21458
Longitudinal moment of inertia of waterplane area IL [m ⁴]	647587
Block coefficient cB [-]	0.83

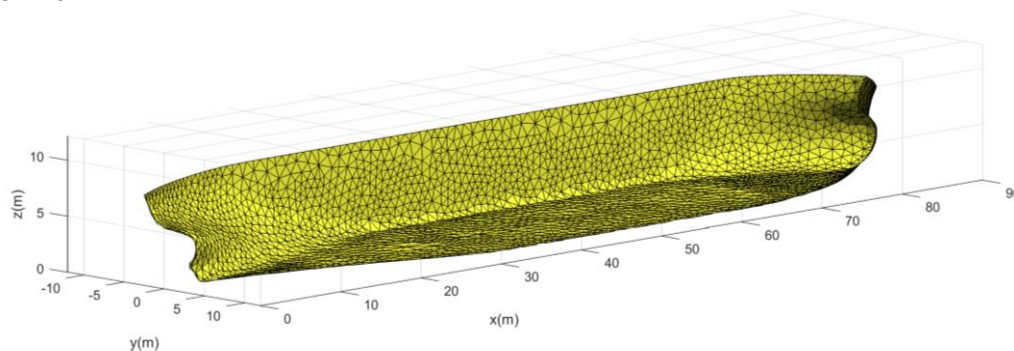
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

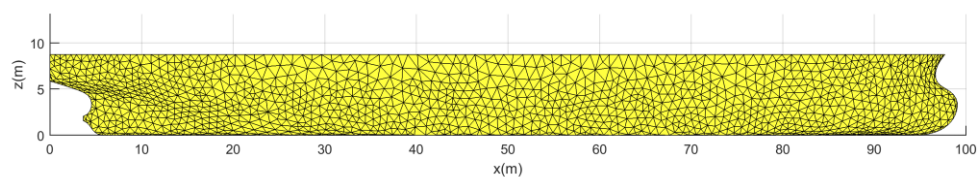


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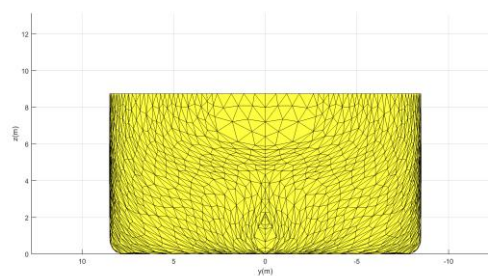
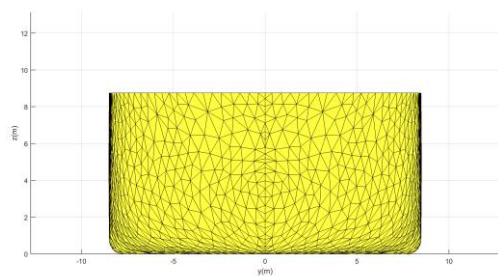
March 2017

Vessel ID	Tan-02
Hull file name	Tan-02_Tanker_6200t.hull
Vessel type	Tanker, Small
Length over all (LOA) [m]	100.0
Length between perpendiculars (LPP) [m]	95.0
Breadth [m]	17.0
Design draught [m]	6.5
Height [m]	8.8
Capacity (TEU) [-]	6200
Hydrostatics for Design Draught	
Volume [m ³]	8586
Longitudinal Center of Buoyancy (LCB) [m]	50.8
Vertical Center of Buoyancy (VCB) [m]	3.39
Longitudinal Center of Floatation (LCF) [m]	47.60
Transversal moment of inertia of waterplane area IT [m ⁴]	31750
Longitudinal moment of inertia of waterplane area IL [m ⁴]	941860
Block coefficient c_B [-]	0.82

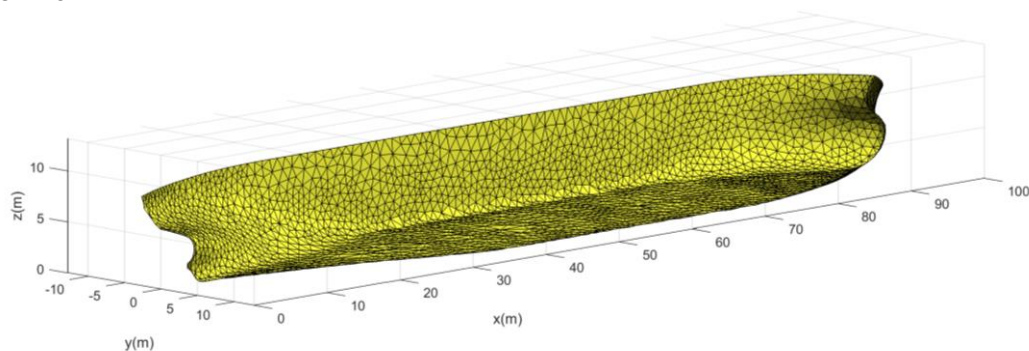
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

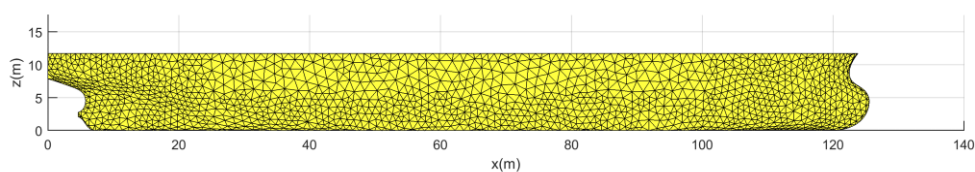


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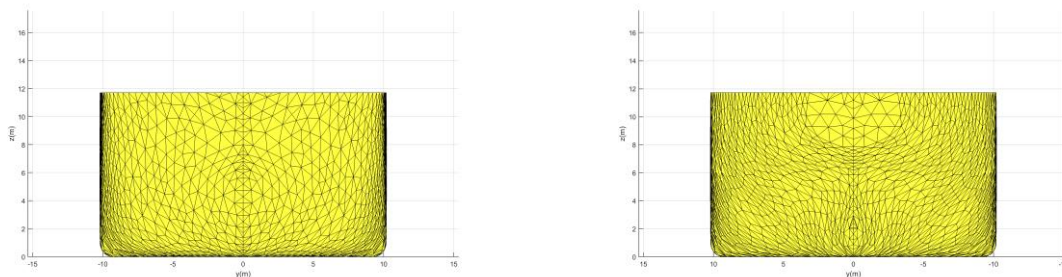
March 2017

Vessel ID	Tan-03
Hull file name	Tan-03_Tanker_13100t.hull
Vessel type	Tanker, Handy
Length over all (LOA) [m]	128.6
Length between perpendiculars (LPP) [m]	120.4
Breadth [m]	20.4
Design draught [m]	8.7
Height [m]	11.7
Capacity (TEU) [-]	13100
Hydrostatics for Design Draught	
Volume [m ³]	17524
Longitudinal Center of Buoyancy (LCB) [m]	64.4
Vertical Center of Buoyancy (VCB) [m]	4.54
Longitudinal Center of Floatation (LCF) [m]	60.31
Transversal moment of inertia of waterplane area IT [m ⁴]	69770
Longitudinal moment of inertia of waterplane area IL [m ⁴]	2304440
Block coefficient c_B [-]	0.82

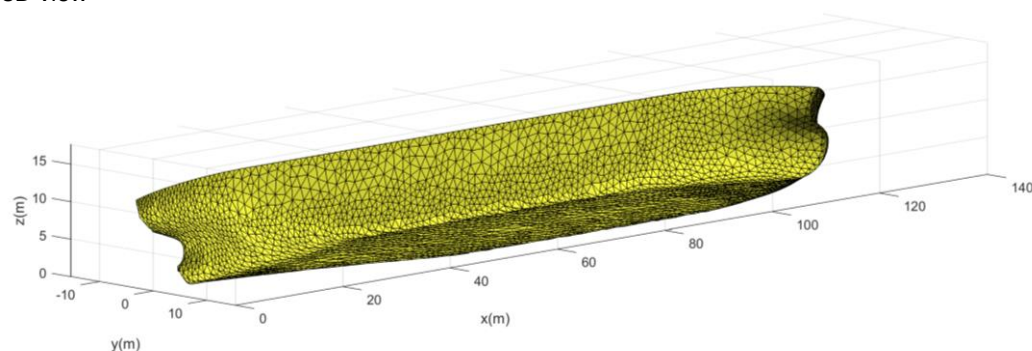
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

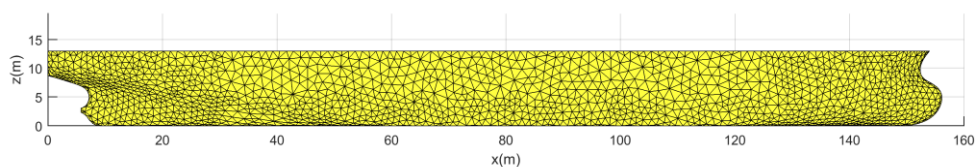


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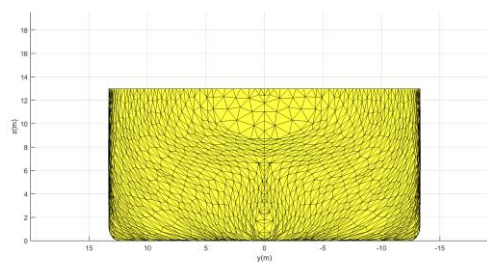
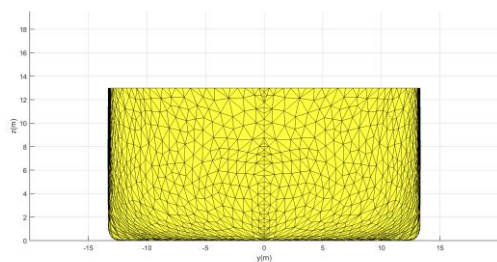
March 2017

Vessel ID	Tan-04
Hull file name	Tan-04_Tanker_25000t.hull
Vessel type	Tanker, Handy
Length over all (LOA) [m]	158.8
Length between perpendiculars (LPP) [m]	149.8
Breadth [m]	26.6
Design draught [m]	9.7
Height [m]	13.0
Capacity (TEU) [-]	25000
Hydrostatics for Design Draught	
Volume [m ³]	31535
Longitudinal Center of Buoyancy (LCB) [m]	80.2
Vertical Center of Buoyancy (VCB) [m]	5.03
Longitudinal Center of Floatation (LCF) [m]	74.99
Transversal moment of inertia of waterplane area IT [m ⁴]	192757
Longitudinal moment of inertia of waterplane area IL [m ⁴]	5778850
Block coefficient c_B [-]	0.82

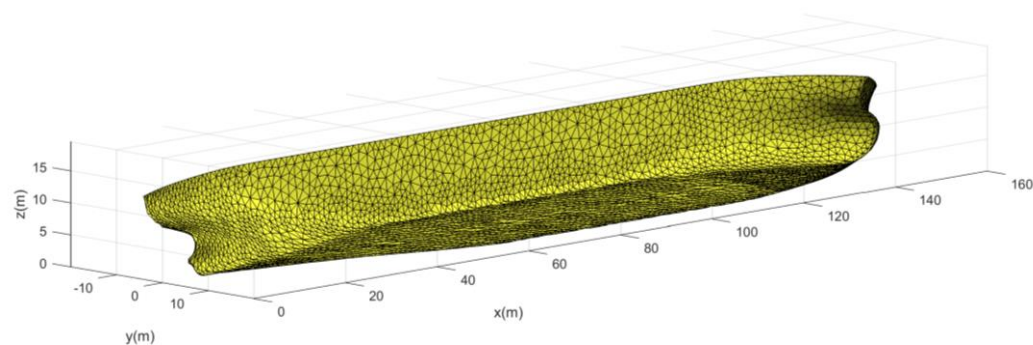
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

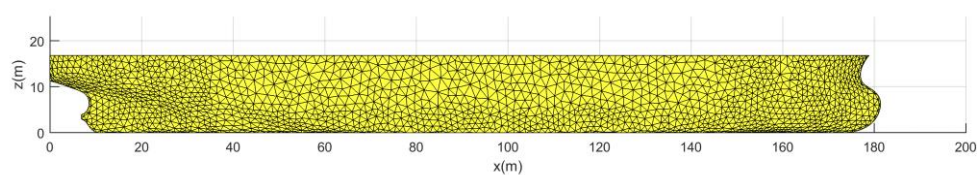


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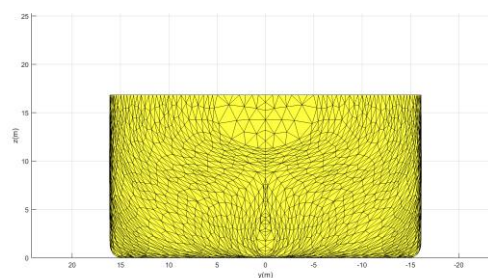
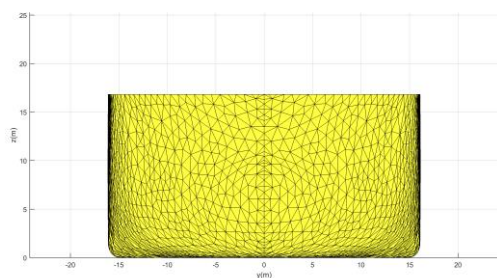
March 2017

Vessel ID	Tan-05
Hull file name	Tan-05_Tanker_47000t.hull
Vessel type	Tanker, MR2
Length over all (LOA) [m]	182.9
Length between perpendiculars (LPP) [m]	174.0
Breadth [m]	32.2
Design draught [m]	12.5
Height [m]	16.8
Capacity (TEU) [-]	47000
Hydrostatics for Design Draught	
Volume [m ³]	56725
Longitudinal Center of Buoyancy (LCB) [m]	92.9
Vertical Center of Buoyancy (VCB) [m]	6.54
Longitudinal Center of Floatation (LCF) [m]	86.89
Transversal moment of inertia of waterplane area IT [m ⁴]	390871
Longitudinal moment of inertia of waterplane area IL [m ⁴]	10799300
Block coefficient c_B [-]	0.81

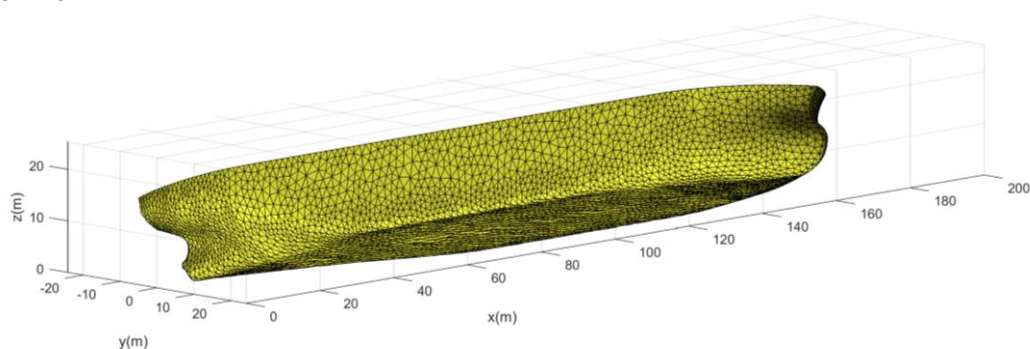
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

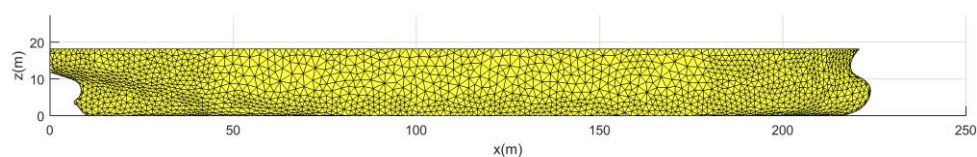


Date

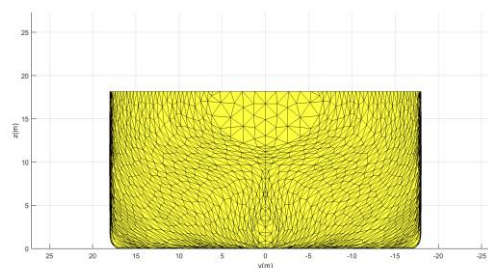
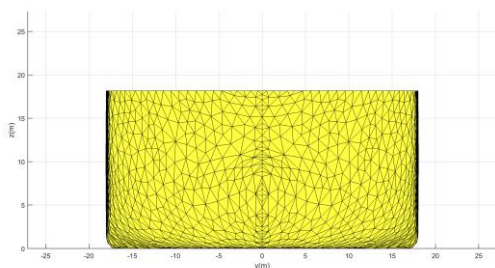
March 2017

Vessel ID	Tan-06
Hull file name	Tan-06_Tanker_71600t.hull
Vessel type	Tanker, Panamax
Length over all (LOA) [m]	224.0
Length between perpendiculars (LPP) [m]	216.0
Breadth [m]	36.0
Design draught [m]	13.5
Height [m]	18.2
Capacity (TEU) [-]	71600
Hydrostatics for Design Draught	
Volume [m ³]	88110
Longitudinal Center of Buoyancy (LCB) [m]	115.8
Vertical Center of Buoyancy (VCB) [m]	7.01
Longitudinal Center of Floatation (LCF) [m]	108.77
Transversal moment of inertia of waterplane area IT [m ⁴]	710347
Longitudinal moment of inertia of waterplane area IL [m ⁴]	24213100
Block coefficient c_B [-]	0.84

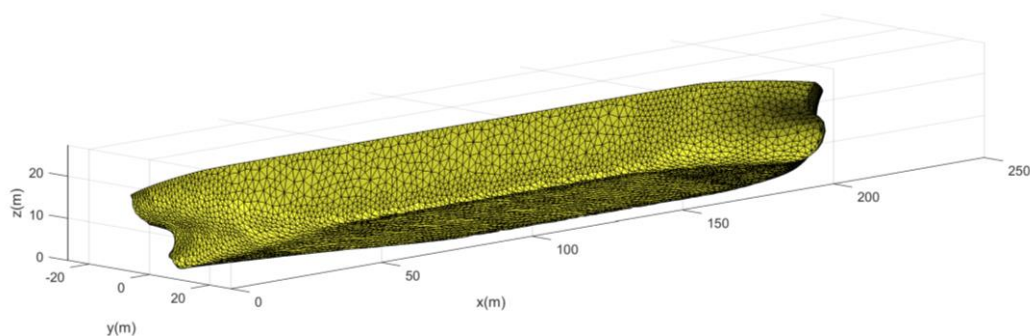
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

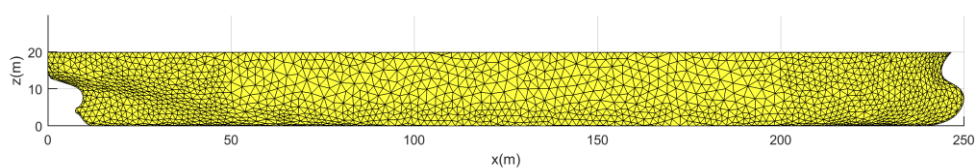


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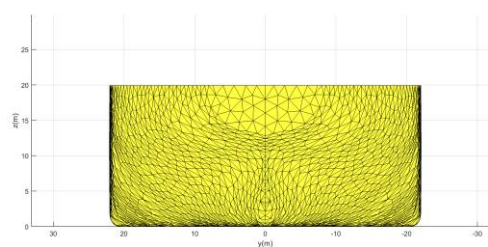
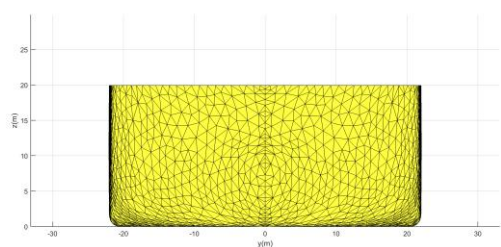
March 2017

Vessel ID	Tan-07
Hull file name	Tan-07_Tanker_114600t.hull
Vessel type	Tanker, Aframax
Length over all (LOA) [m]	250.0
Length between perpendiculars (LPP) [m]	241.0
Breadth [m]	44.0
Design draught [m]	14.8
Height [m]	19.9
Capacity (TEU) [-]	114600
Hydrostatics for Design Draught	
Volume [m ³]	131818
Longitudinal Center of Buoyancy (LCB) [m]	129.2
Vertical Center of Buoyancy (VCB) [m]	7.68
Longitudinal Center of Floatation (LCF) [m]	121.38
Transversal moment of inertia of waterplane area IT [m ⁴]	1446500
Longitudinal moment of inertia of waterplane area IL [m ⁴]	41024700
Block coefficient c_B [-]	0.84

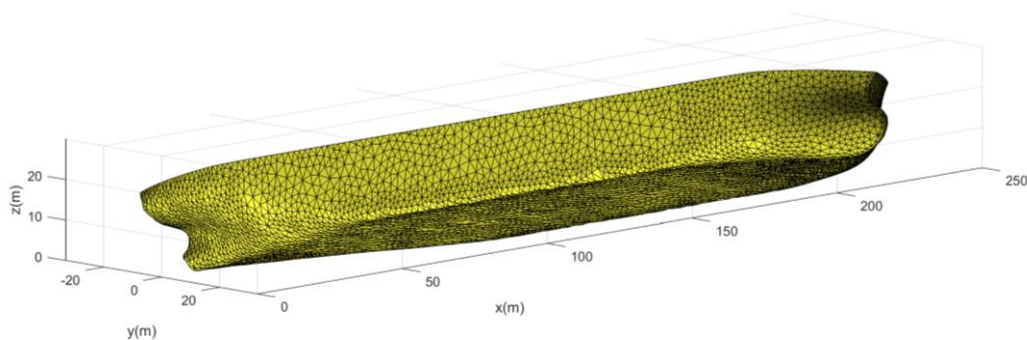
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

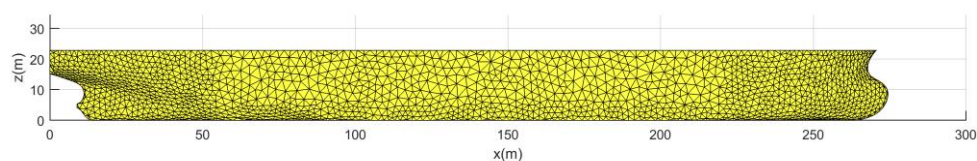


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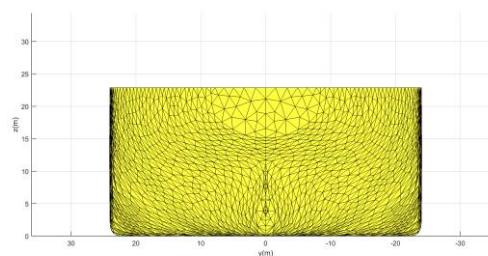
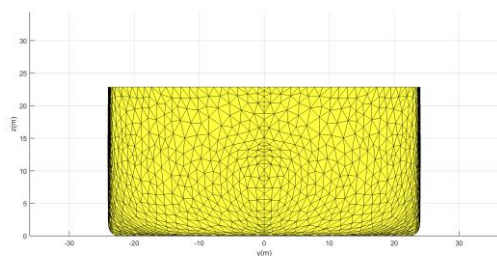
March 2017

Vessel ID	Tan-08
Hull file name	Tan-08_Tanker_156900t.hull
Vessel type	Tanker, Suezmax
Length over all (LOA) [m]	274.5
Length between perpendiculars (LPP) [m]	264.0
Breadth [m]	48.0
Design draught [m]	17.0
Height [m]	22.9
Capacity (TEU) [-]	156900
Hydrostatics for Design Draught	
Volume [m ³]	180934
Longitudinal Center of Buoyancy (LCB) [m]	141.5
Vertical Center of Buoyancy (VCB) [m]	8.83
Longitudinal Center of Floatation (LCF) [m]	132.88
Transversal moment of inertia of waterplane area IT [m ⁴]	2056830
Longitudinal moment of inertia of waterplane area IL [m ⁴]	59000000
Block coefficient c_B [-]	0.84

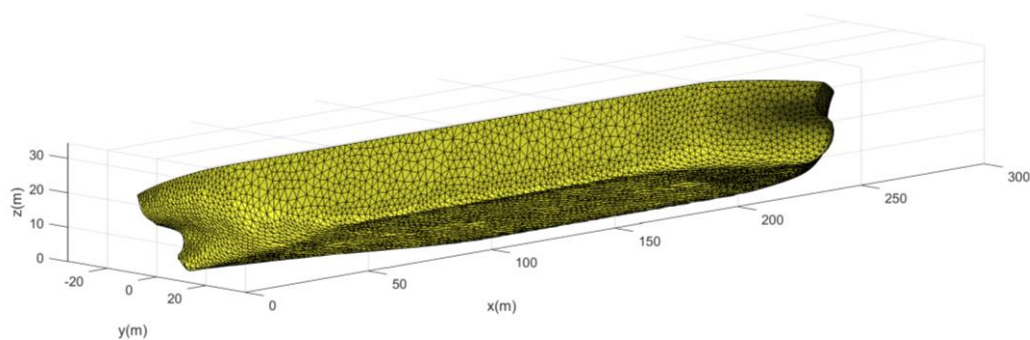
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

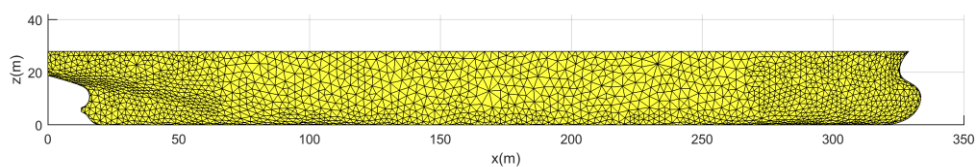


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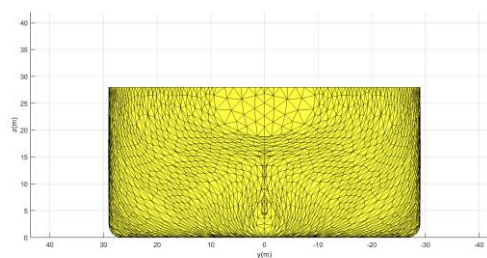
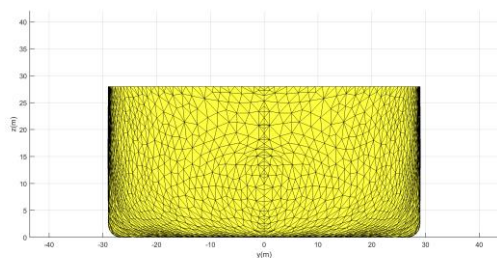
March 2017

Vessel ID	Tan-09
Hull file name	Tan-09_300000t.hull
Vessel type	Tanker, CC
Length over all (LOA) [m]	325.5
Length between perpendiculars (LPP) [m]	320.0
Breadth [m]	58.0
Design draught [m]	20.8
Height [m]	28.0
Capacity (TEU) [-]	300000
Hydrostatics for Design Draught	
Volume [m ³]	322581
Longitudinal Center of Buoyancy (LCB) [m]	171.2
Vertical Center of Buoyancy (VCB) [m]	10.87
Longitudinal Center of Floatation (LCF) [m]	160.14
Transversal moment of inertia of waterplane area IT [m ⁴]	4196290
Longitudinal moment of inertia of waterplane area IL [m ⁴]	120987000
Block coefficient c_B [-]	0.84

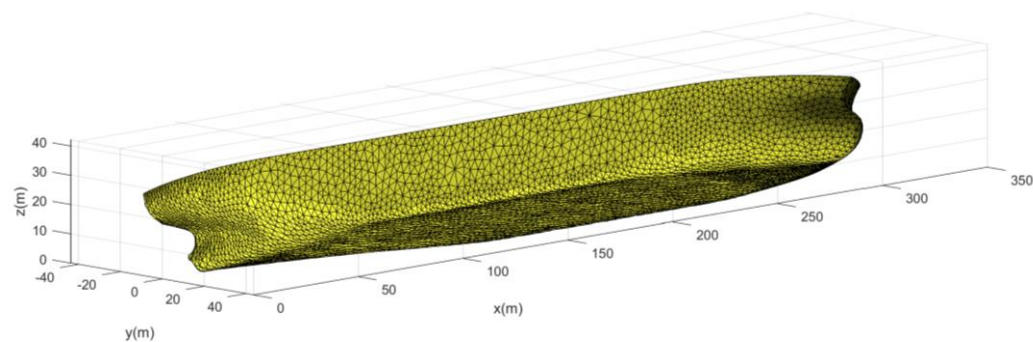
Longitudinal profile



Lateral profile (left: bow, right: aft)



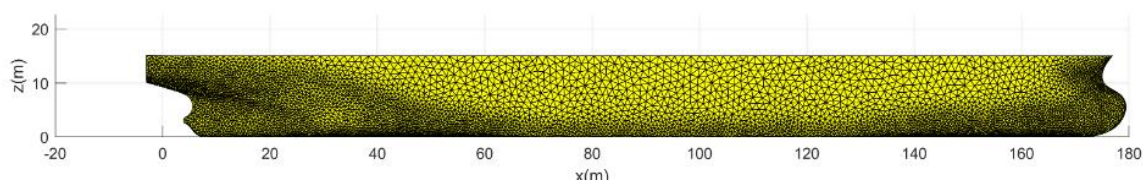
3D view



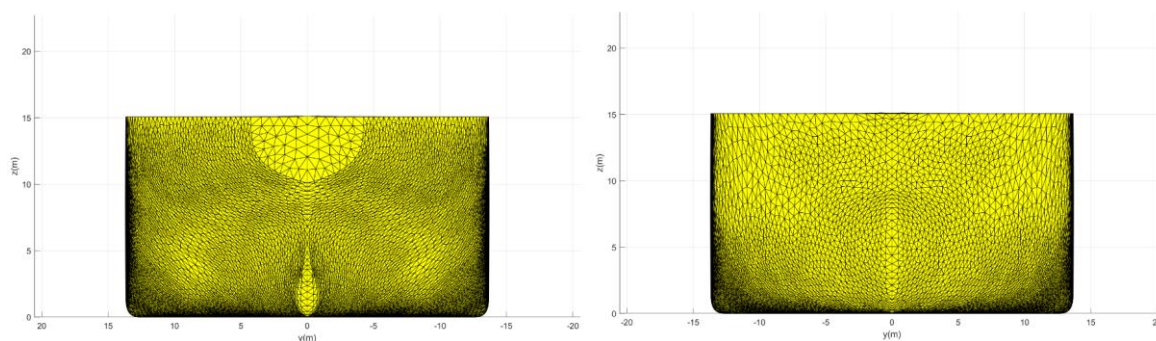
Date	March 2017
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Vessel ID	Tan-10
Hull file name	Tan-10_Tanker_37300
Vessel type	Baltic Monarch
Length over all (LOA) [m]	182.6
Length between perpendiculars (LPP) [m]	175.0
Breadth [m]	27.3
Design draught [m]	11.2
Height [m]	15.0
Capacity (TEU) [-]	37300
Hydrostatics for Design Draught	
Volume [m ³]	43402
Longitudinal Center of Buoyancy (LCB) [m]	93.4
Vertical Center of Buoyancy (VCB) [m]	5.86
Longitudinal Center of Floatation (LCF) [m]	87.39
Transversal moment of inertia of waterplane area IT [m ⁴]	240919
Longitudinal moment of inertia of waterplane area IL [m ⁴]	9330330
Block coefficient c_B [-]	0.81

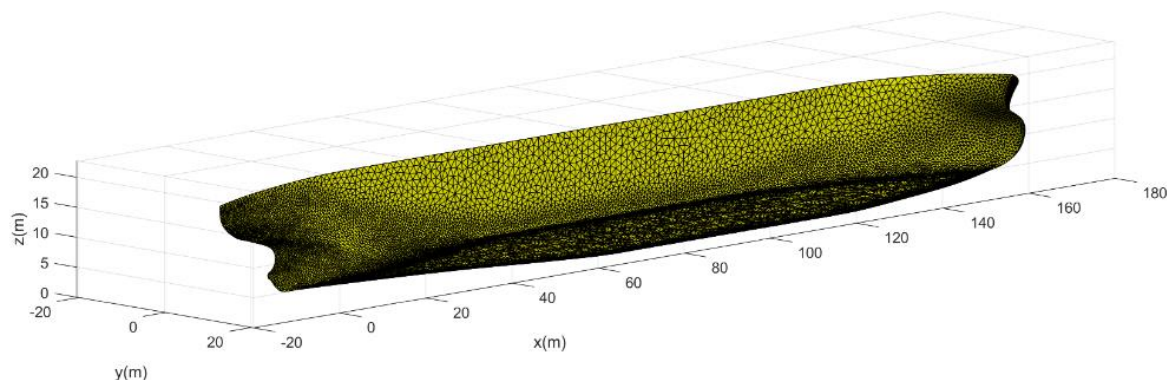
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view



Date

April 2021

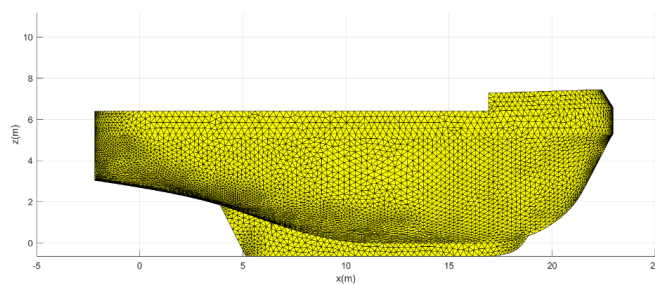
3.7 Tugboats

The following list of tugboats represent 3 selected tugboats of different size. They are generated generically based on inhouse data.

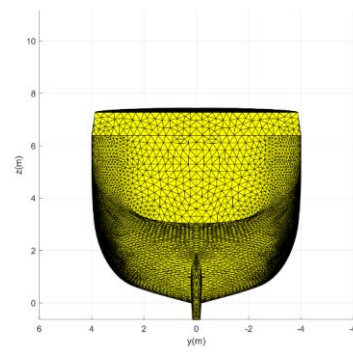
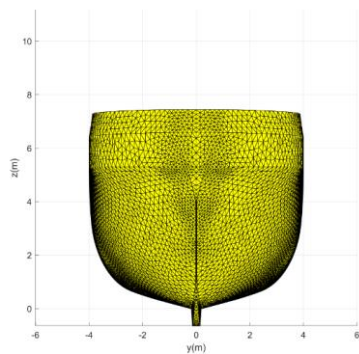
The Hydrostatic characteristics such as LCB, and block coefficients have been selected based on the FORCE Technology database.

Vessel ID	TUG-01
Hull file name	Tug-01.hull
Vessel type	Conventional Tug
Length over all (LOA) [m]	23.3
Length between perpendiculars (LPP) [m]	22.0
Breadth [m]	8.0
Design draught [m]	3.50
Height [m]	6.40
Hydrostatics for Design Draught	
Volume [m ³]	322.6
Longitudinal Center of Buoyancy (LCB) [m]	10.69
Vertical Center of Buoyancy (VCB) [m]	2.23
Longitudinal Center of Floatation (LCF) [m]	9.09
Transversal moment of inertia of waterplane area IT [m ⁴]	717.86
Longitudinal moment of inertia of waterplane area IL [m ⁴]	6280.5
Block coefficient c_B [-]	0.52

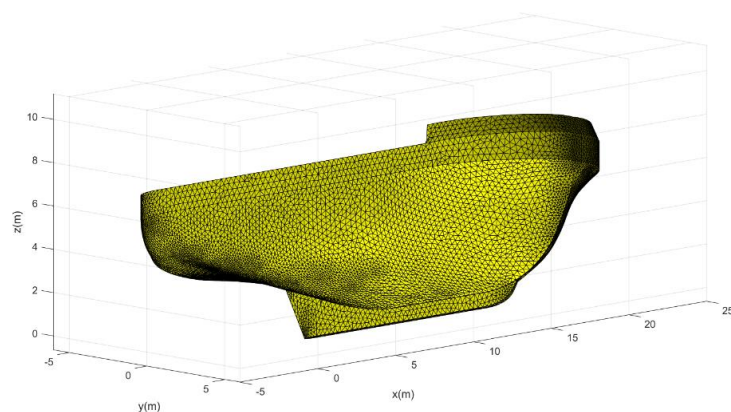
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

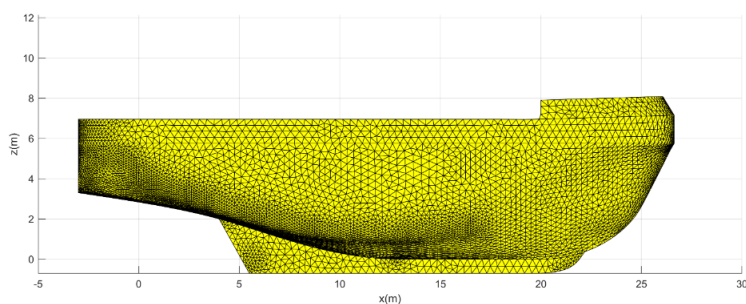


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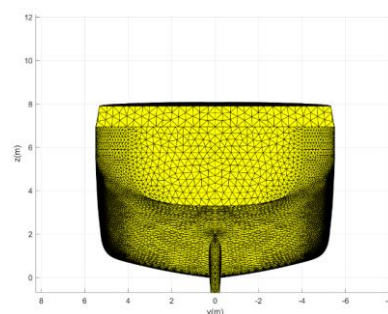
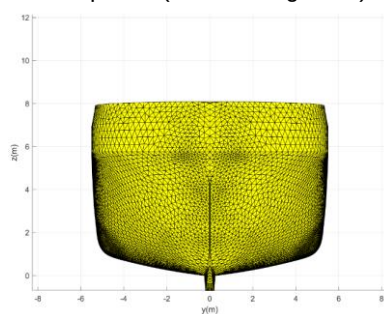
April 2021

Vessel ID	TUG-02
Hull file name	Tug-02.hull
Vessel type	Push/Tug
Length over all (LOA) [m]	28.3
Length between perpendiculars (LPP) [m]	25.65
Breadth [m]	11.0
Design draught [m]	3.80
Height [m]	6.95
Hydrostatics for Design Draught	
Volume [m ³]	616.7
Longitudinal Center of Buoyancy (LCB) [m]	12.27
Vertical Center of Buoyancy (VCB) [m]	2.37
Longitudinal Center of Floatation (LCF) [m]	10.37
Transversal moment of inertia of waterplane area IT [m ⁴]	2262.47
Longitudinal moment of inertia of waterplane area IL [m ⁴]	14828.7
Block coefficient C_B [-]	0.57

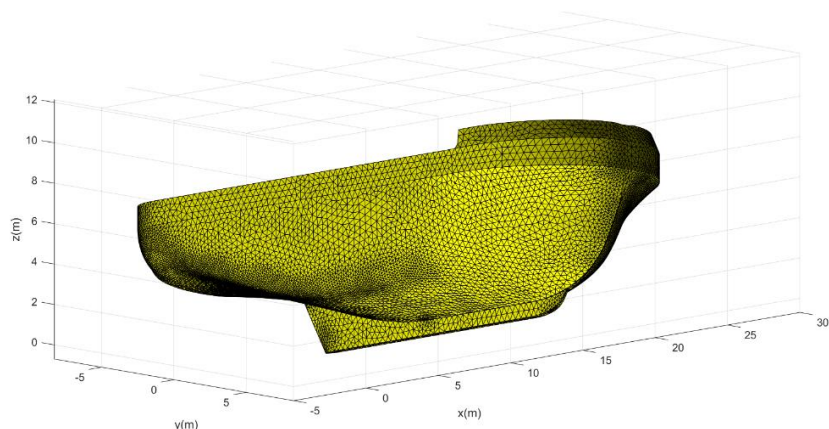
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view

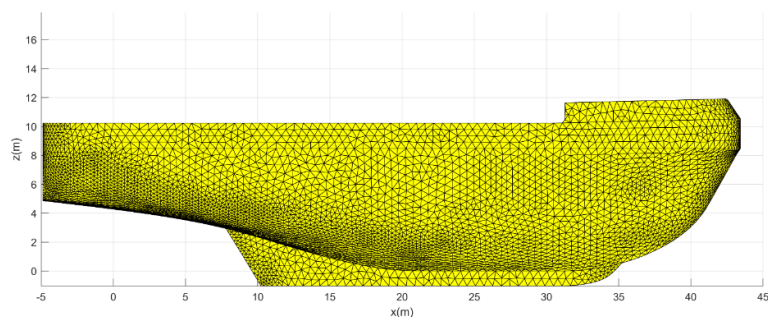


Date

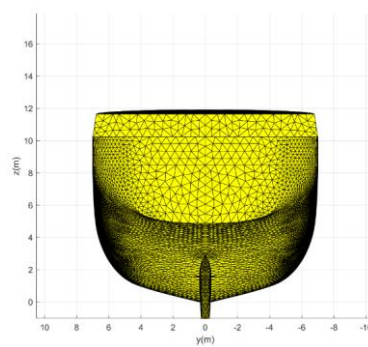
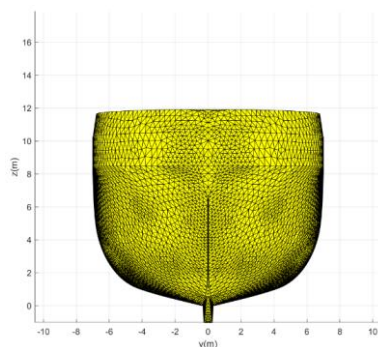
April 2021

Vessel ID	TUG-03
Hull file name	Tug-03.hull
Vessel type	Enhanced Tractor Tug
Length over all (LOA) [m]	47.24
Length between perpendiculars (LPP) [m]	21.78
Breadth [m]	14.0
Design draught [m]	5.60
Height [m]	10.24
Hydrostatics for Design Draught	
Volume [m ³]	1677.9
Longitudinal Center of Buoyancy (LCB) [m]	20.05
Vertical Center of Buoyancy (VCB) [m]	3.61
Longitudinal Center of Floatation (LCF) [m]	16.72
Transversal moment of inertia of waterplane area IT [m ⁴]	7249.5
Longitudinal moment of inertia of waterplane area IL [m ⁴]	78389.4
Block coefficient C_B [-]	0.51

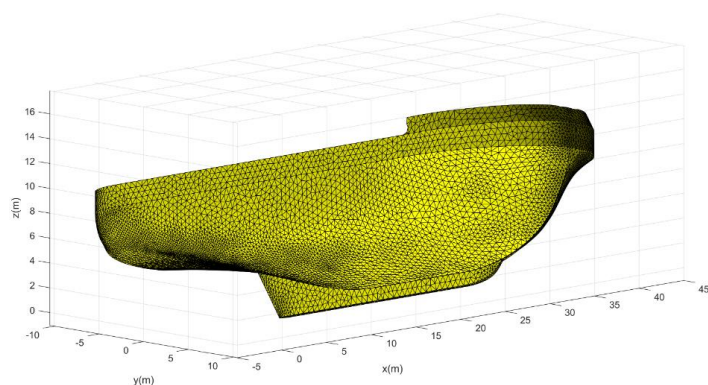
Longitudinal profile



Lateral profile (left: bow, right: aft)



3D view



Date

April 2021

4 References

- /1/ Practical Ship Design, Elsevier Ocean Engineering Book Series, Vol. 1, D.G.M. Watson, 1998.
- /2/ Determination of Regression Formulas for Main Dimensions of Tankers and Bulk Carriers based on HIS Fairplay Data, DTU, Work Package 2, September 2012.
- /3/ Statistical Analysis and Determination of Regression Formulas for main Dimensions of Container Ships, DTU, 2013.