

DTU

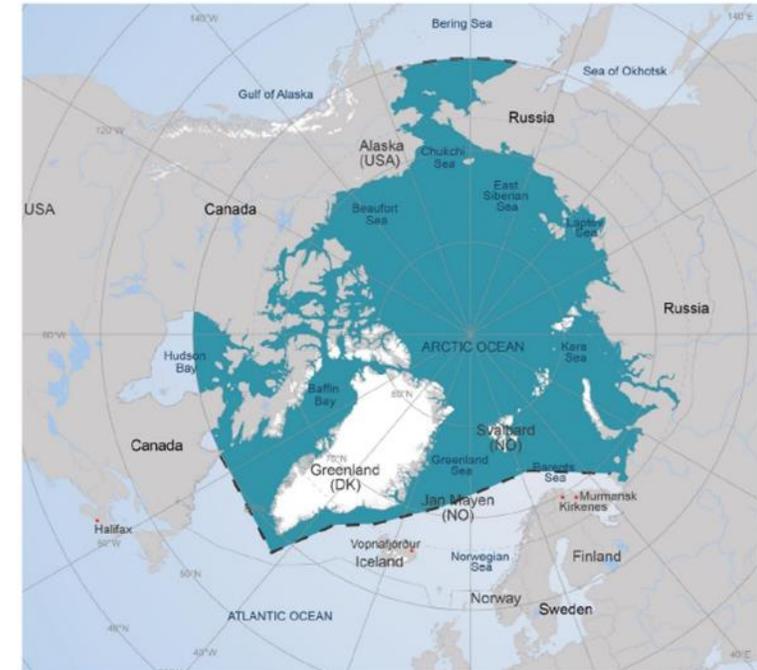


# DANA V



# Main dimensions

- Work notation
  - DNVGL 1A SPS E0 Dynpos PC6
  - Either DNVGL Silent R or URN ICES209
- Main dimensions:
  - Length 68 meters
  - Width 15,6 meters
  - Draft 5,2 meters
- Accommodation for 38 persons – 18 in single cabins
- and 10 in dubbel cabins.
- Diesel Electric propulsion
- Service speed 12 knots
- Bollard pull 25 ton at 5 kn.
- Endurance up to 60 days.



# Time and Money

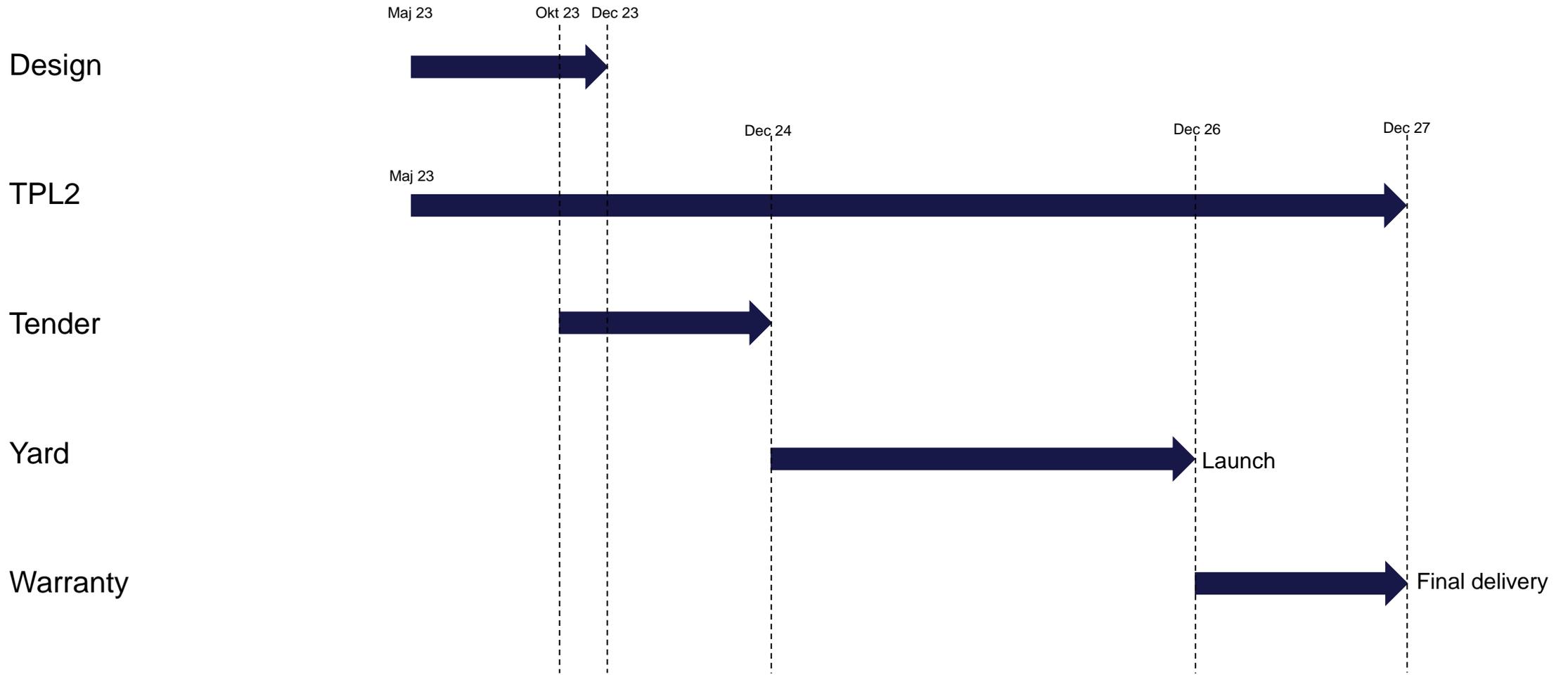
- 2018-2019 – Project study for new vessel
  - 2020 Folketinget allocates DKK 170 Million via the Forskningsreserven, for a new ship.
  - 2021 The work starts
  - 2022 Tenderproces for design work and for technical consultant (TPL2).
  - 2023 April design work commence.
  - Ultimo 2026 expected delivery.
- 
- Expected project price DKK 400-425 million (Mid 2021, not consolidated), of which construction price is DKK 360-370 million (incl. Orient fond and AP. Møller)
  - The remainder is financed via funds - currently DKK 50 million from Mærsk Mckinney and Chastine Møller's fond and DKK 50 million from the Orient fond.
  - The money from the funds goes in part to specific projects on the new vessel. (Green propulsion, innovation platform and test platform.)

# Contracts

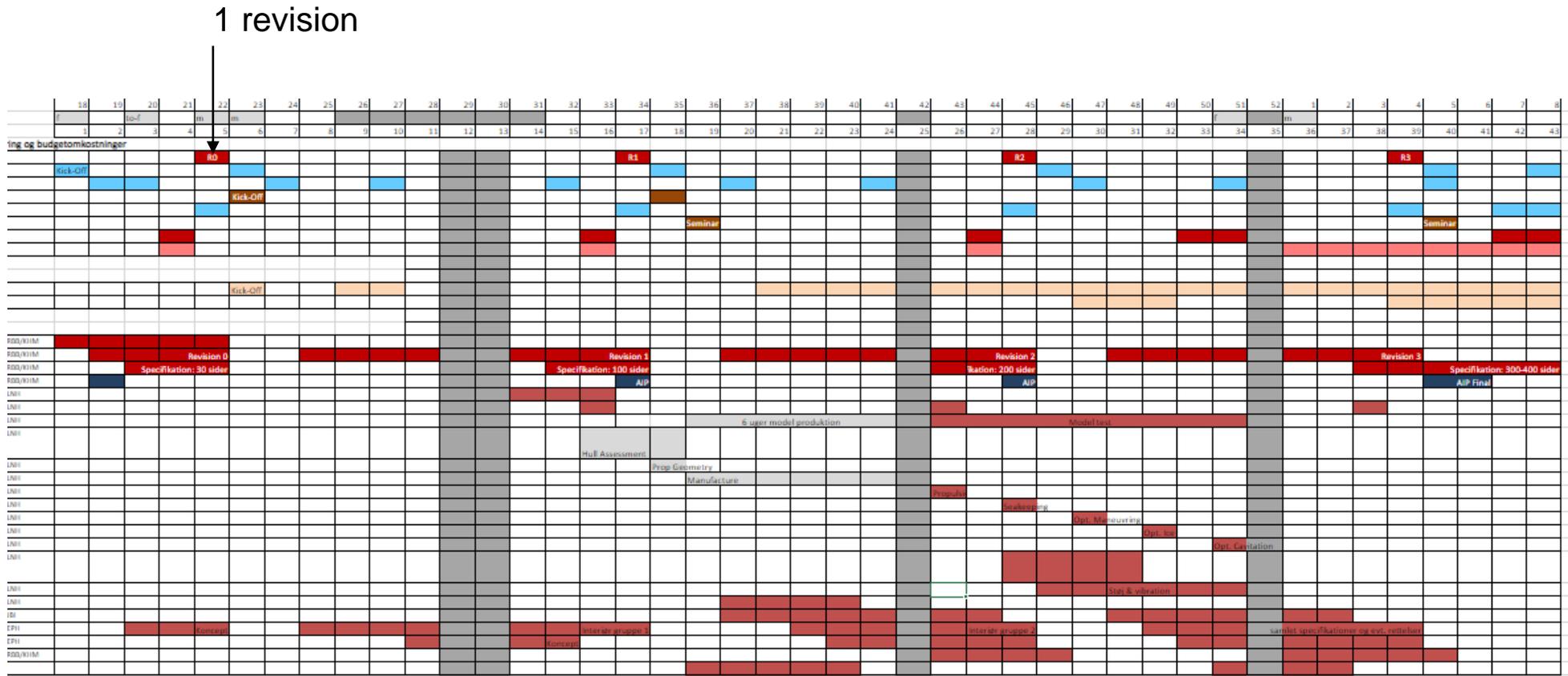
- Design company DDK
- Consist of:
  - Knud E. Hansen
  - Odense Maritime Technology
  
- Technical consultant (TPL2)
  - OSK



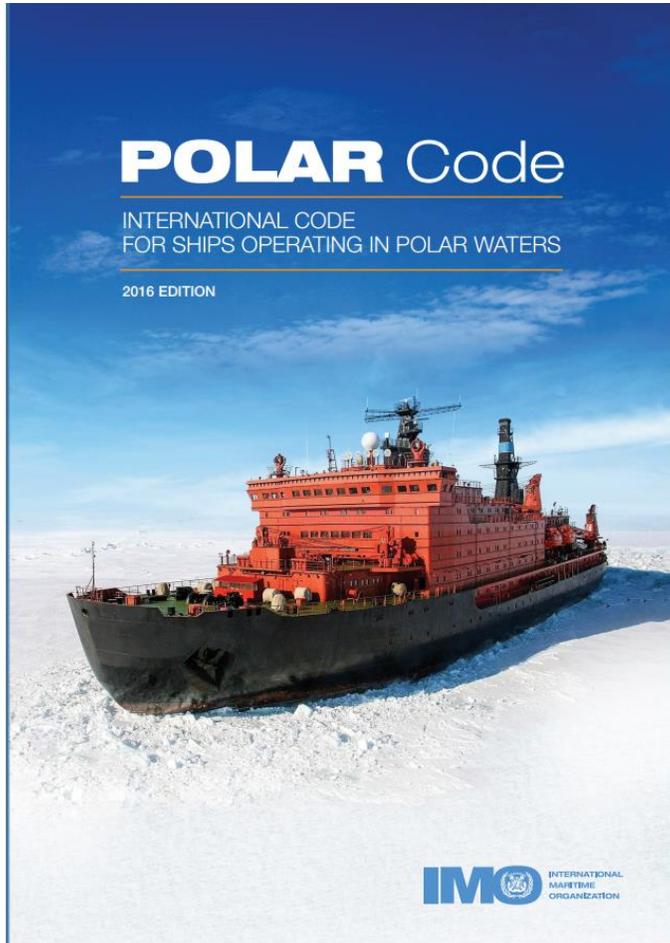
# Process



# Time schedule for design



# Polar class



**Table 2 : POLAR CLASS and Icebreaker description**

POLAR CLASS or Icebreaker	Operations	Ice description (1)	Typical range of ice thickness (m) (2)
1	year-round	all polar waters	3,0 - 4,0
2	year-round	moderate multi-year ice	2,5 - 3,0
3	year-round	second-year ice which may include multi-year ice inclusions	2,0 - 2,5
4	year-round	thick first-year ice which may include old ice inclusions	1,5 - 2,0
5	year-round	medium first-year ice which may include old ice inclusions	1,0 - 1,5
6	summer/ autumn	medium first-year ice which may include old ice inclusions	0,7 - 1,0
7	summer/ autumn	thin first-year ice which may include old ice inclusions	0,5 - 0,7

(1) Based on World Meteorological Organization (WMO) Sea Ice Nomenclature  
 (2) For **POLAR CLASS** assuming independent operation in ice concentration (portion of sea covered by the ice, expressed in tenths) of less than 6/10 and for **Icebreaker** assuming independent operation in ice concentration of more than 6/10.

**Table 3 : Additional service features POLAR CAT**

Ice class or service notation	POLAR CAT-A	POLAR CAT-B	POLAR CAT-C
POLAR CLASS 1, POLAR CLASS 2, POLAR CLASS 3, POLAR CLASS 4, POLAR CLASS 5 Icebreaker 1, Icebreaker 2, Icebreaker 3, Icebreaker 4, Icebreaker 5	X	-	-
POLAR CLASS 6, POLAR CLASS 7 Icebreaker 6, Icebreaker 7	-	X	-
Other or none	-	-	X

**Note 1:** X : Allowed  
 - : Not allowed.

# Research capabilityys

- Optimized for fishery research, bollard pull up to 25 ton at 5 kn.
- Flexdeck with room for 4 20” containers, max load 42 ton.
- Only crane capacity for handling empty containers.
- Large A-frame for handling of: Multinets, MIK’s, core samplers, graplers, AUV’s, ROV’s and other equipment.
- 4 labs
  - Fishlab
  - Semidry lab
  - Wetlab
  - Educational lab.

Cranes and Winches	Requirements
A-Frame	5-t SWL at sea state 5 for over deck lifts, 5-t SWL at sea state 3 for overboard lifts, 3-t SWL at sea state 5 for overboard lifts. Full width between deck pedestals. Lifting height 8.5 m above deck. Capable of 180° rotation to horizontal position over main deck.
Crane aft deck	Knuckle-boom trawl mill combined crane, Reach all aft deck, and 1 m aft of SB pedestal. 5-t SWL at sea state 5 for over deck lifts, 5-t SWL at sea state 3 for overboard lifts
Gilson Gallow	12-t SWL
Trawl winch SB including rope	1 pc. (Pos. 1SB), 30 ton, 120 m/min., 15 t last layer, 3000 m Ø20-mm Dyneema® SK75 rope.
Trawl winch PS including rope	1 pc. (Pos. 1PS), 30 ton, 120 m/min., 15 t last layer, 3000 m Ø20-mm Dyneema® SK75 rope
Net drums	2 pcs. (Pos. 2A & 2B), 30 ton, 10 m <sup>3</sup>
Gilson winch	2 pcs. (Pos. 3A & 3B), 12 ton
Dumping winch (Cod-end winch) including rope	2 pcs. (Pos. 4A & 4B), 5 tons, 75 m Dyneema® rope
Aux. winch (small gear) including rope.	1 pc. (Pos. 7), 5 ton, equipped for wire metering, 3000 m 14-mm Dynice® Dux rope
Trawl Sonar Winch including data cable.	1 pc. (Pos. 8), 2 tons, 3000 m 13.6-mm Dynex® data

# Research capabilityys

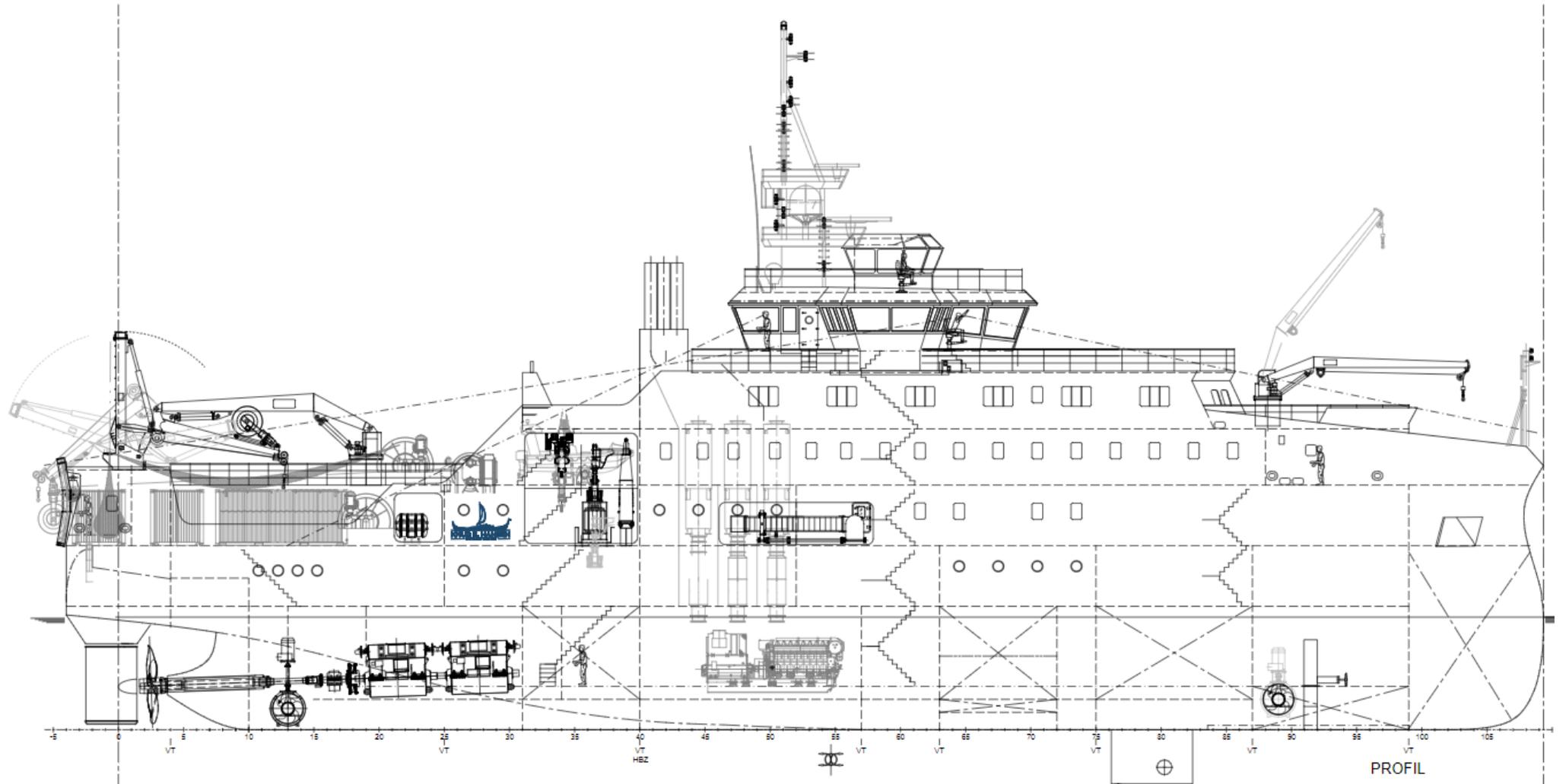
- Dedicated CTD crane
- Auxillery crane for handling of smaller gear, e.g. BONGO, WP2, Apstein and for handling of towfish and smaller ROV's.
- Dropkeel with
  - Scientific echosunder with 6 transducers from 18-333 kHz
  - Scientific multibeam echosounder and sonar – e.g. ME70 and MS70
  - ADCP 300 kHz

Designated area in ships bottom with low BSD for multibeams, (shallow water and meduim water), SBP, ADCP and sonars.

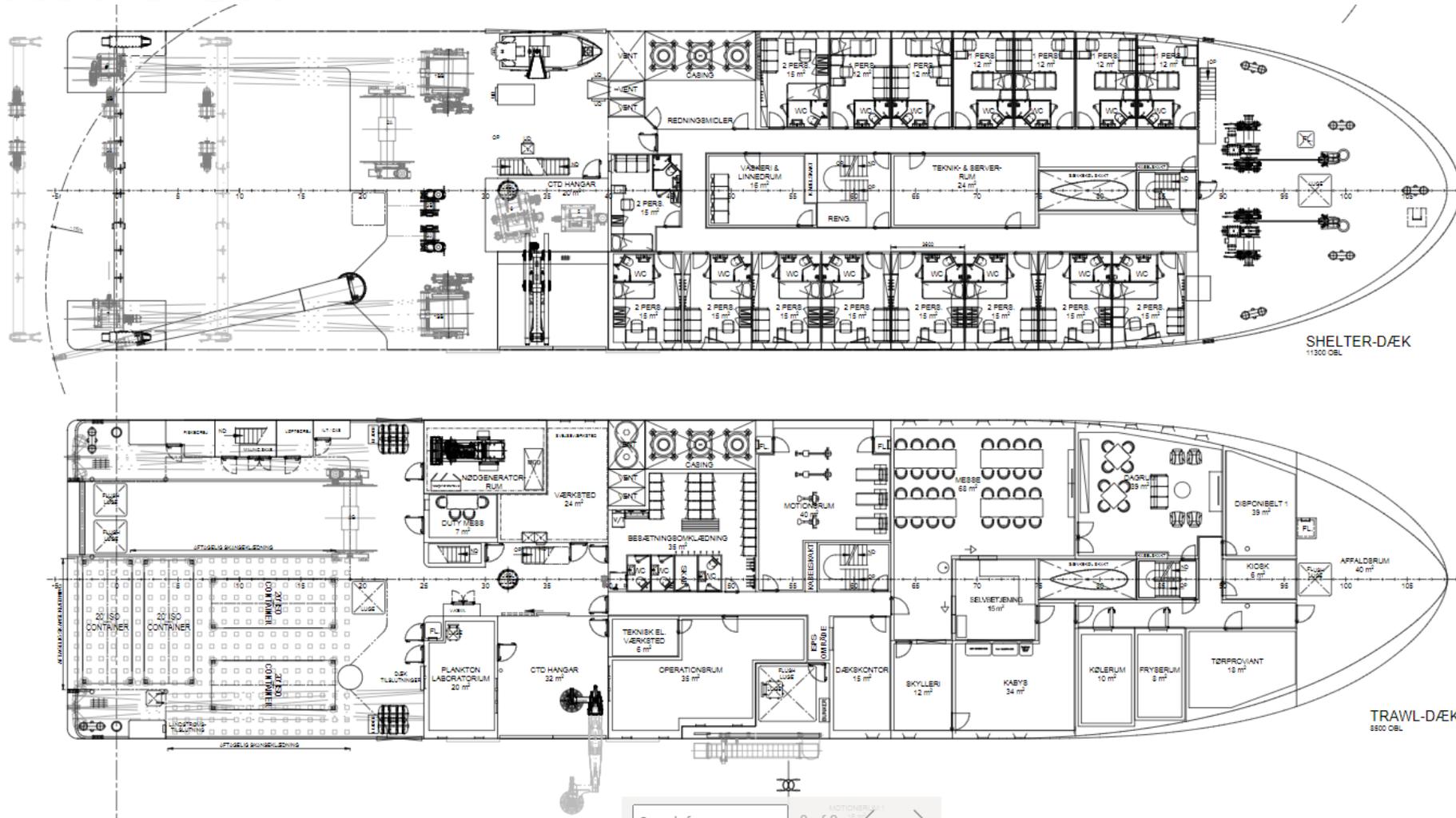
## CTD Hangar-installationen omfatter:

CTD crane	Single-man operation. 2-t SWL sea state 5 over board lifts. Hydraulic operated. Articulating boom with CTD capture mechanism. Min. outreach 3 m from ship side and 1 m below deck level. Landing on 0.5 m high CTD cradle.
CTD winch including coax cable	1 pc. (Pos. 5), 3500 m Ø8.18mm coax cable
CTD auxiliary derrick	Knuckle boom derrick type, to avoid pendular effect. Towing force 20 kN. 2-t SWL at sea state 5 overboard lifts.
CTD winch / auxiliary winch including coax cable and rope.	1 pc. (Pos. 6A & 6B) combined unit with 2 drums, 1000 m Ø8. 18mm coax, 3000 m 10-mm Dyneema®

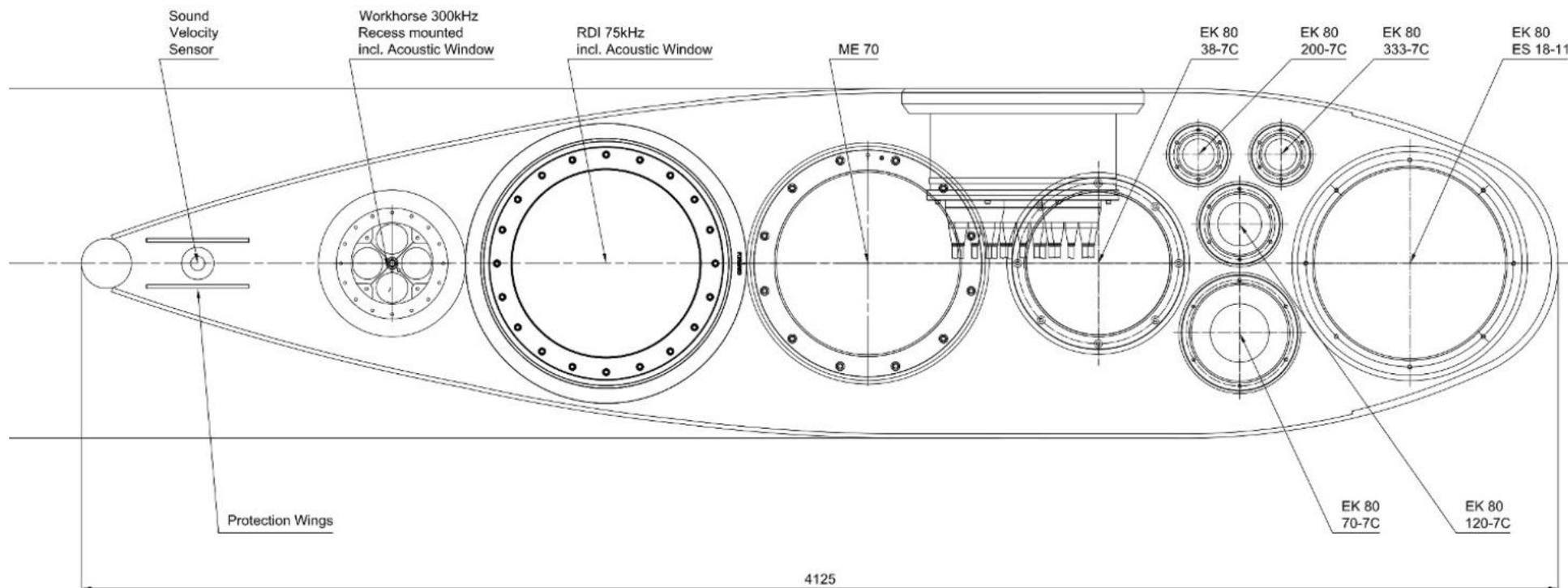
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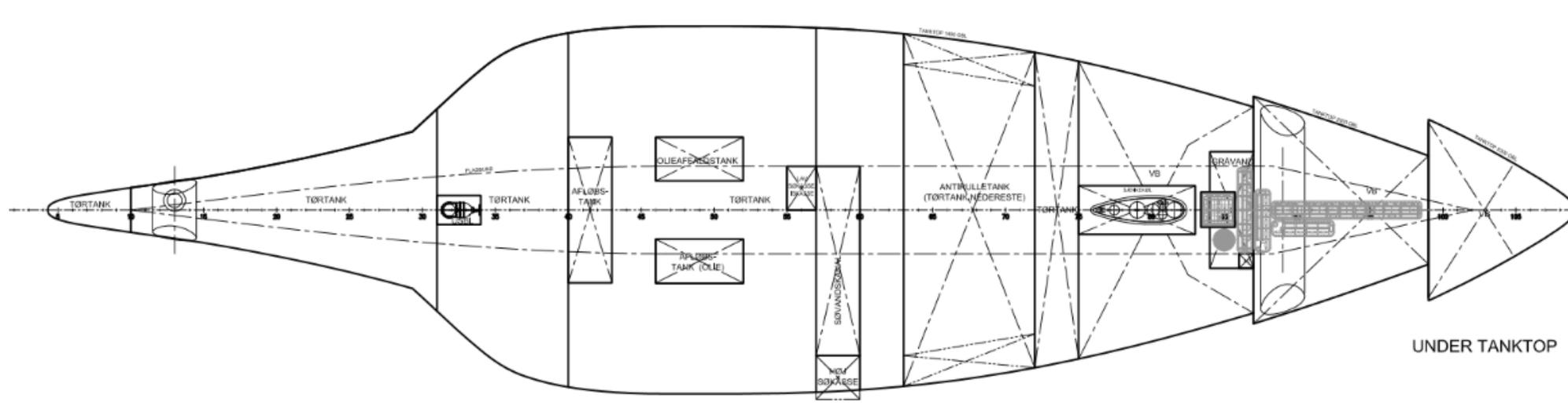
# Rev 0 GA



# Dropkeel



# Hull mounted equipment



# Interior



Questions

**Thank you**

DTU

