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➤ HEAVY WELL INTERVENTION VESSEL

THE NEXT GENERATION



ULSTEIN DX105 - HEAVY WELL INTERVENTION VESSEL

Offshore Vessel & Rig Connect Asia – Offshore Drilling Rigs

By Gunnar Haug, Managing Director - Ulstein Asia Pte Ltd

CONTENT

- Introduction
- Market & Business case
- Development process
- ULSTEIN DX105
- HVG Terra Invader 750
- Questions



INTRODUCTION

- ▶ Ulstein and Herrenknecht Vertical have formed a design cooperation for an integrated Heavy Well Intervention Vessel



- ▶ Herrenknecht is world market leader in TBM (Tunnel Boring Machines). They develop and manufacture innovative deep drilling systems to exploit energy resources
- ▶ Ulstein Design & Solutions BV is one of the world market leaders in design of complex offshore construction vessels and drillships

WELL INTERVENTION

- Any operation carried out on a well, basically to maintain and/or improve the production of the well

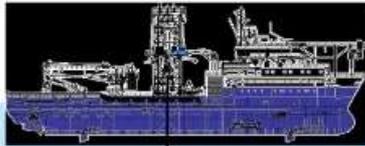
Two main categories:

- Light interventions (open water), downhole tools may be lowered on slick or wireline to perform logging, plugging, perforating etc.
- Heavy interventions (riser based), a high pressure riser is used as a conduit between the seafloor and the vessel. Downhole tools may be lowered through the riser on wireline, slick line or coiled tubing.



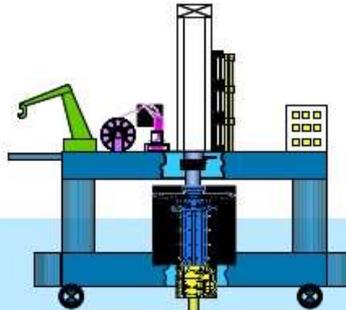
WELL INTERVENTION CATEGORIES

Category A
RLWI



• Wireline / tractor only
• Limited bha length

Category B
Full range intervention & TTD

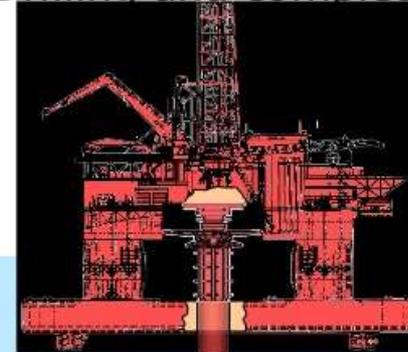


High pressure light weight riser (8-5/8")



• Full range of through tubing services

Category C
Drilling and completion



Low pressure marine riser (21") standard

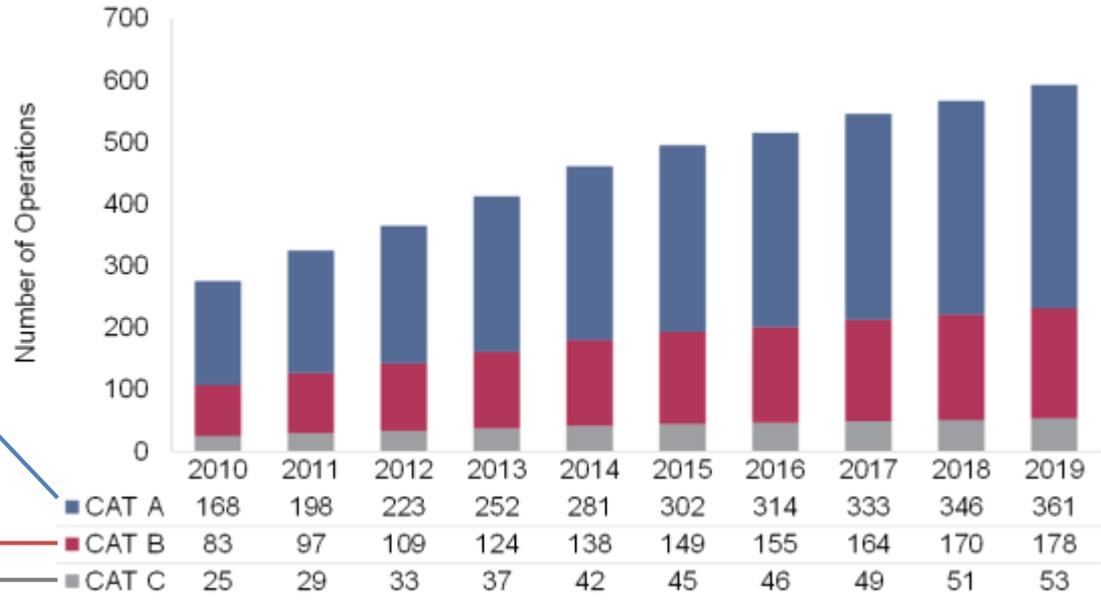
HP concentric riser and SSTT required for live well intervention



• Limited live well through tubing services

MARKET

WELL INTERVENTION



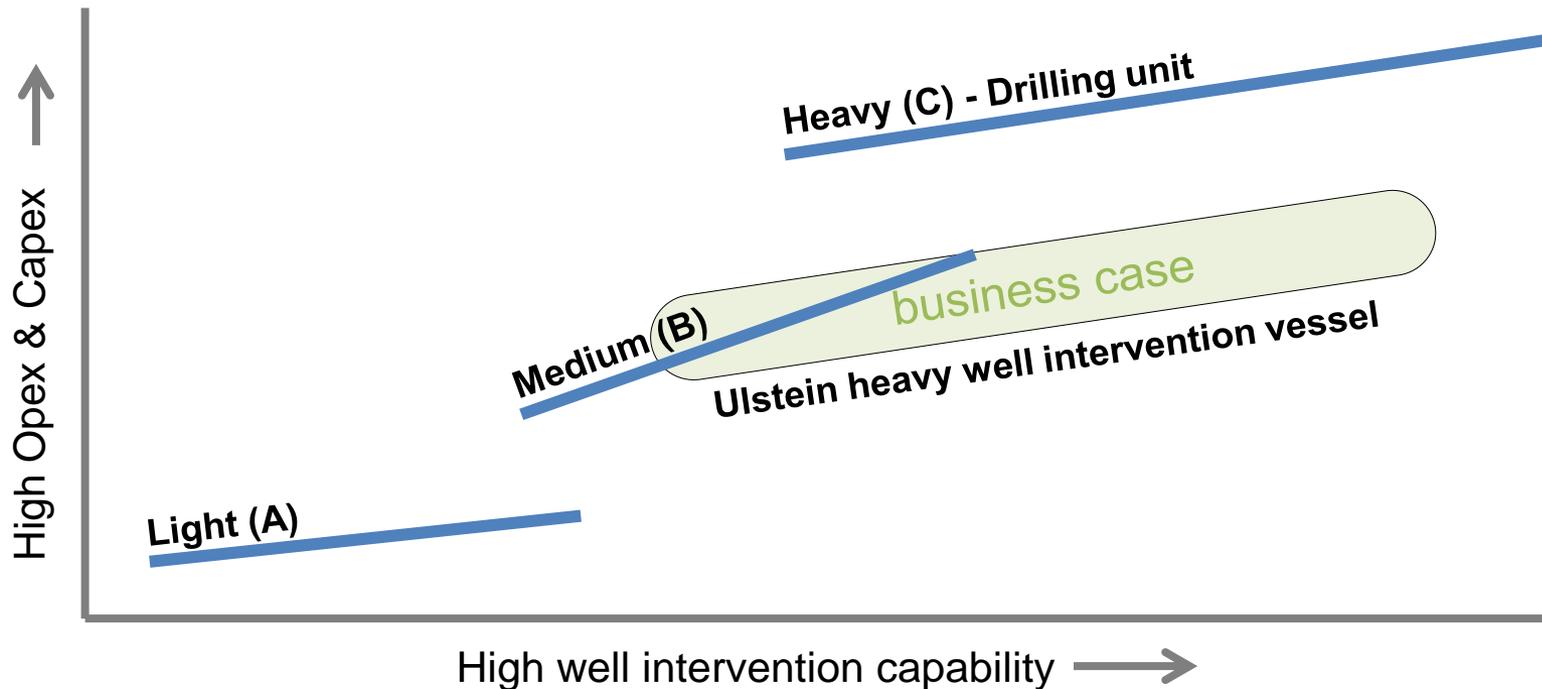
Subsea Well Intervention Workover and IRM



BUSINESS CASE

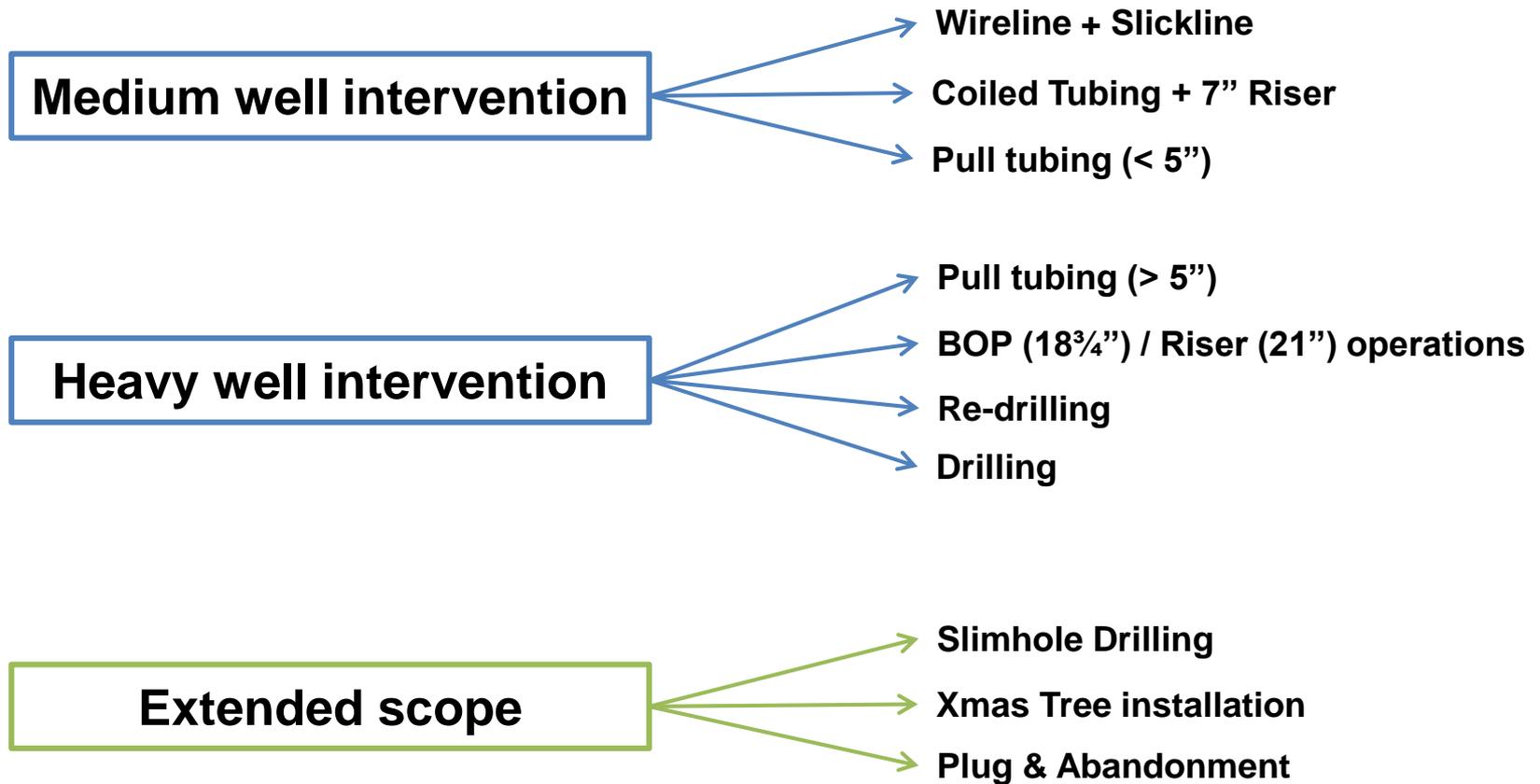
WELL INTERVENTION

- A well intervention vessel with capabilities close to a Drilling vessel, but with much lower CAPEX and OPEX



BUSINESS CASE

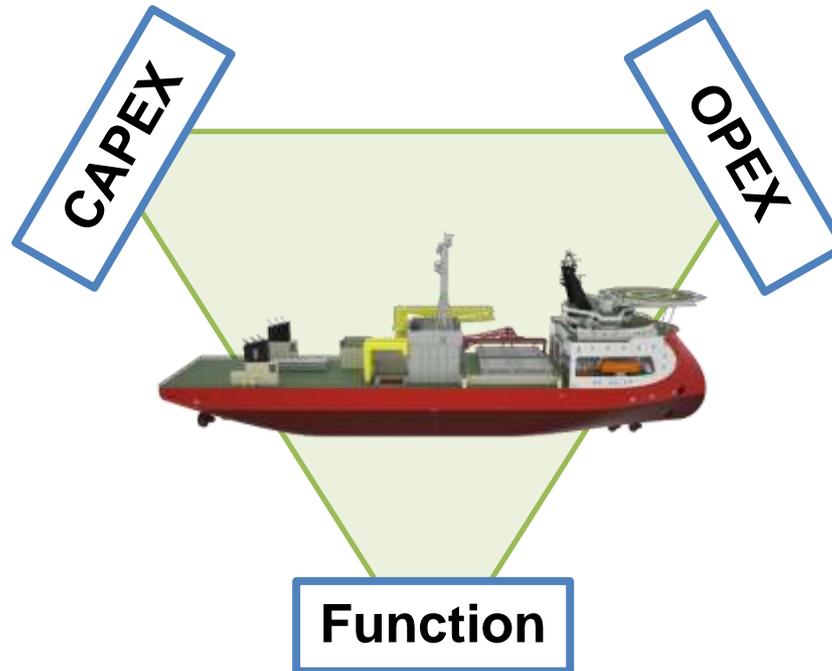
MARKET SEGMENTS



DESIGN TARGETS

WELL INTERVENTION

vessel 100 m\$
topside 60 m\$



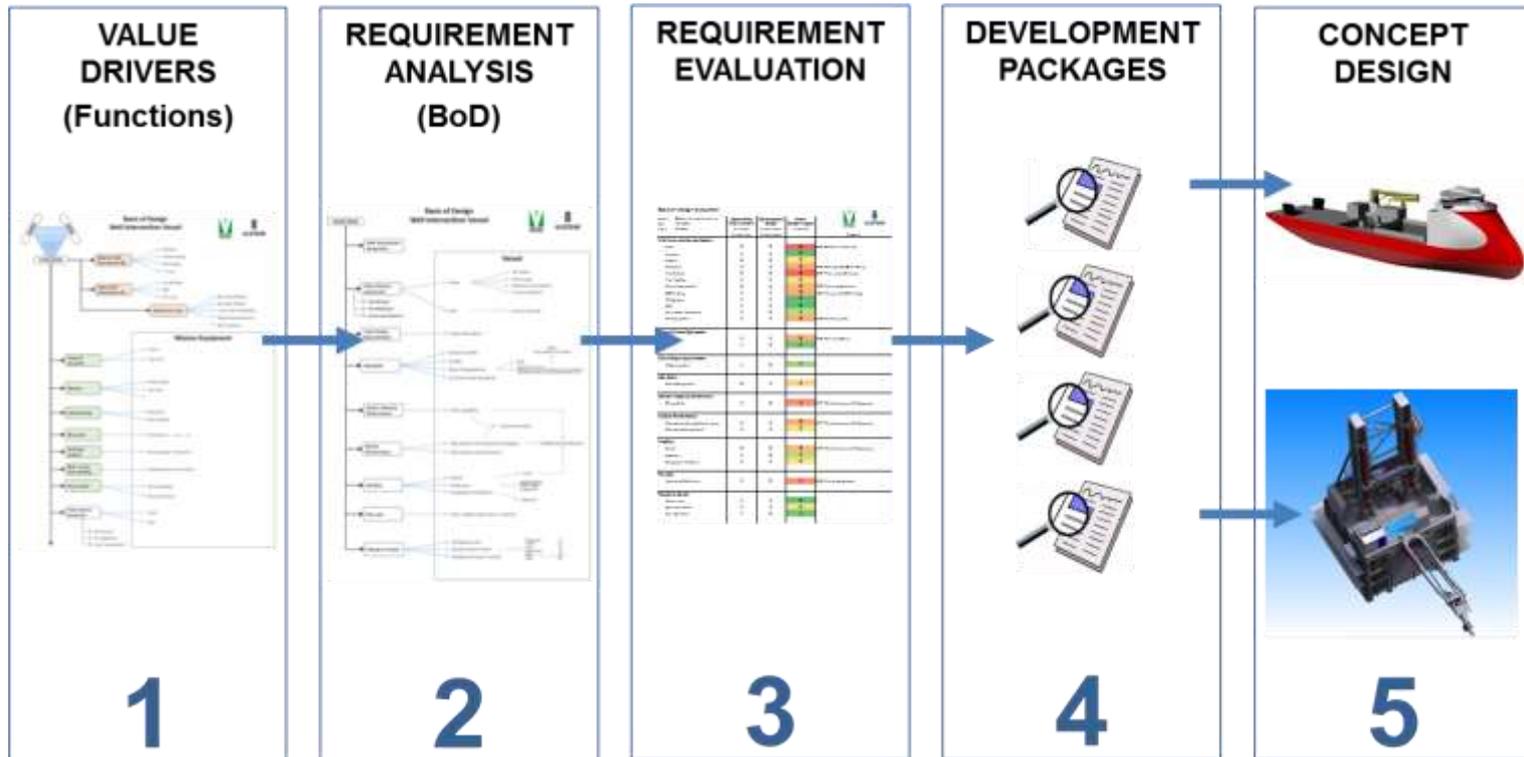
200 - 250 k\$/day

**Heavy & Medium deepwater well intervention
+ Extended scope**

DEVELOPMENT PROCESS

VESSEL AND EQUIPMENT

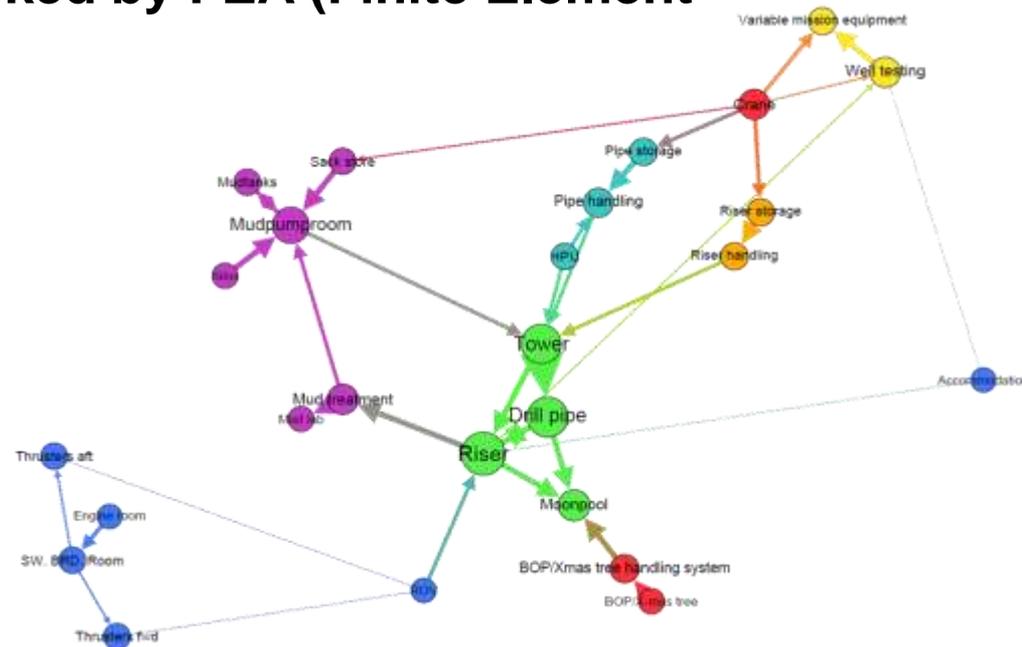
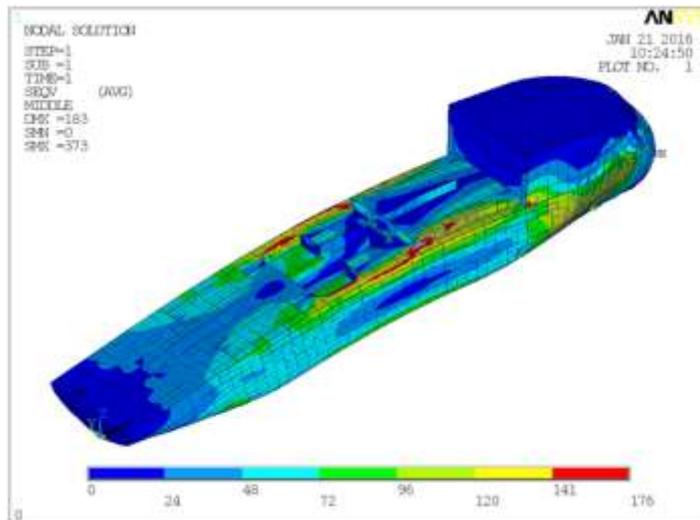
- ▶ Ulstein Design Process (UDP) used to develop the vessel and equipment in synergy



DEVELOPMENT PROCESS

VESSEL AND EQUIPMENT

- Main dimension optimised to improve uptime
- Network theory applied to optimize vessel arrangement
- Global hull strength checked by FEA (Finite Element Analysis)



ULSTEIN DX105

HEAVY WELL INTERVENTION VESSEL

General specification	
Length	154.4 m
Beam	29.4 m
Draught max	9.0 m
Deadweight	13000 ton
Total deck area	4000 m ²
Speed	15 knots
Station keeping	DP 3
Class	DNV (SPS & MODU)





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ULSTEIN DX105

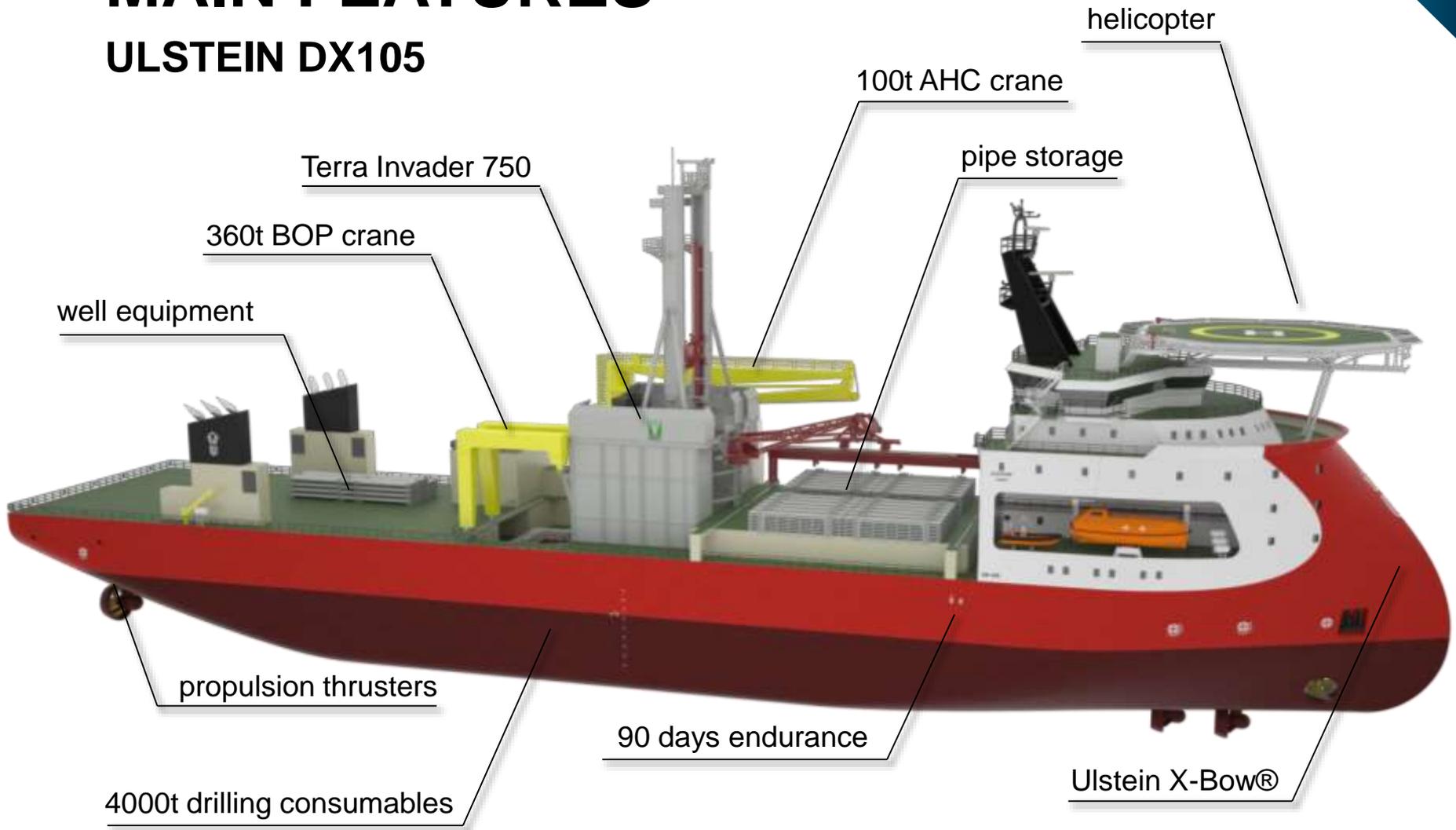
HEAVY WELL INTERVENTION VESSEL





MAIN FEATURES

ULSTEIN DX105





ARRANGEMENT

ULSTEIN DX105

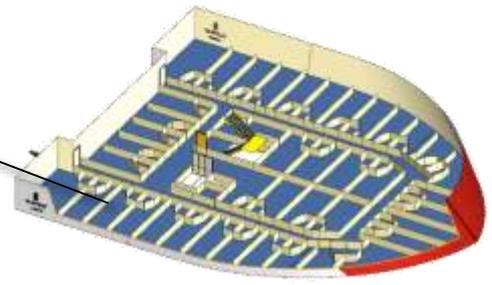
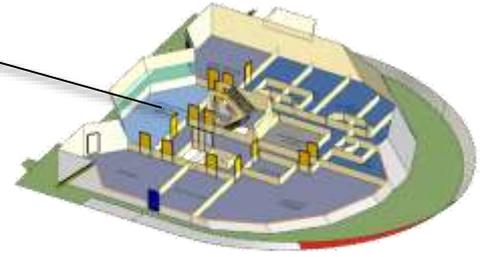
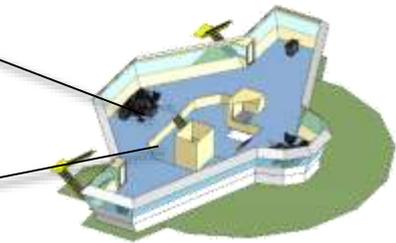


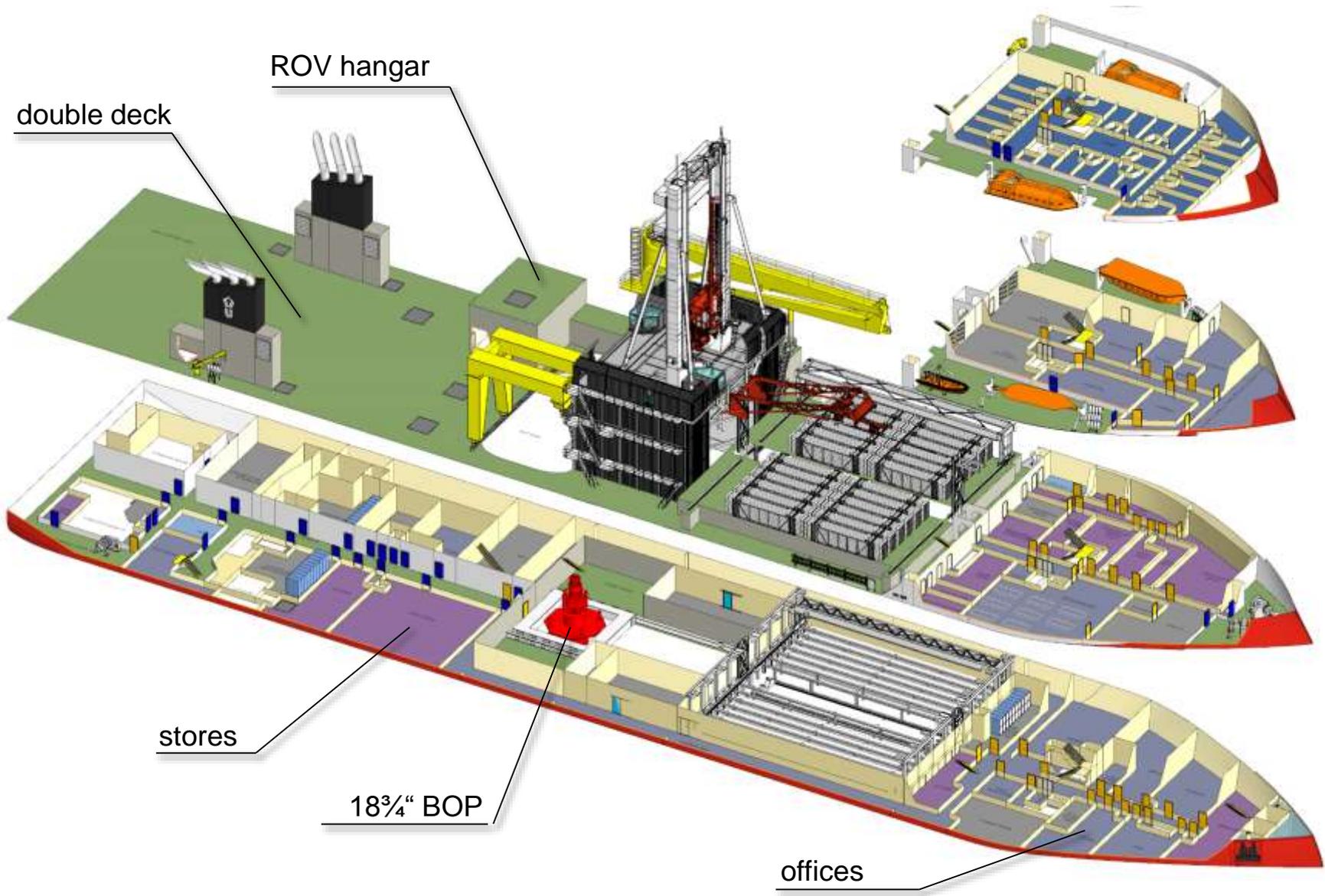
DP bridge

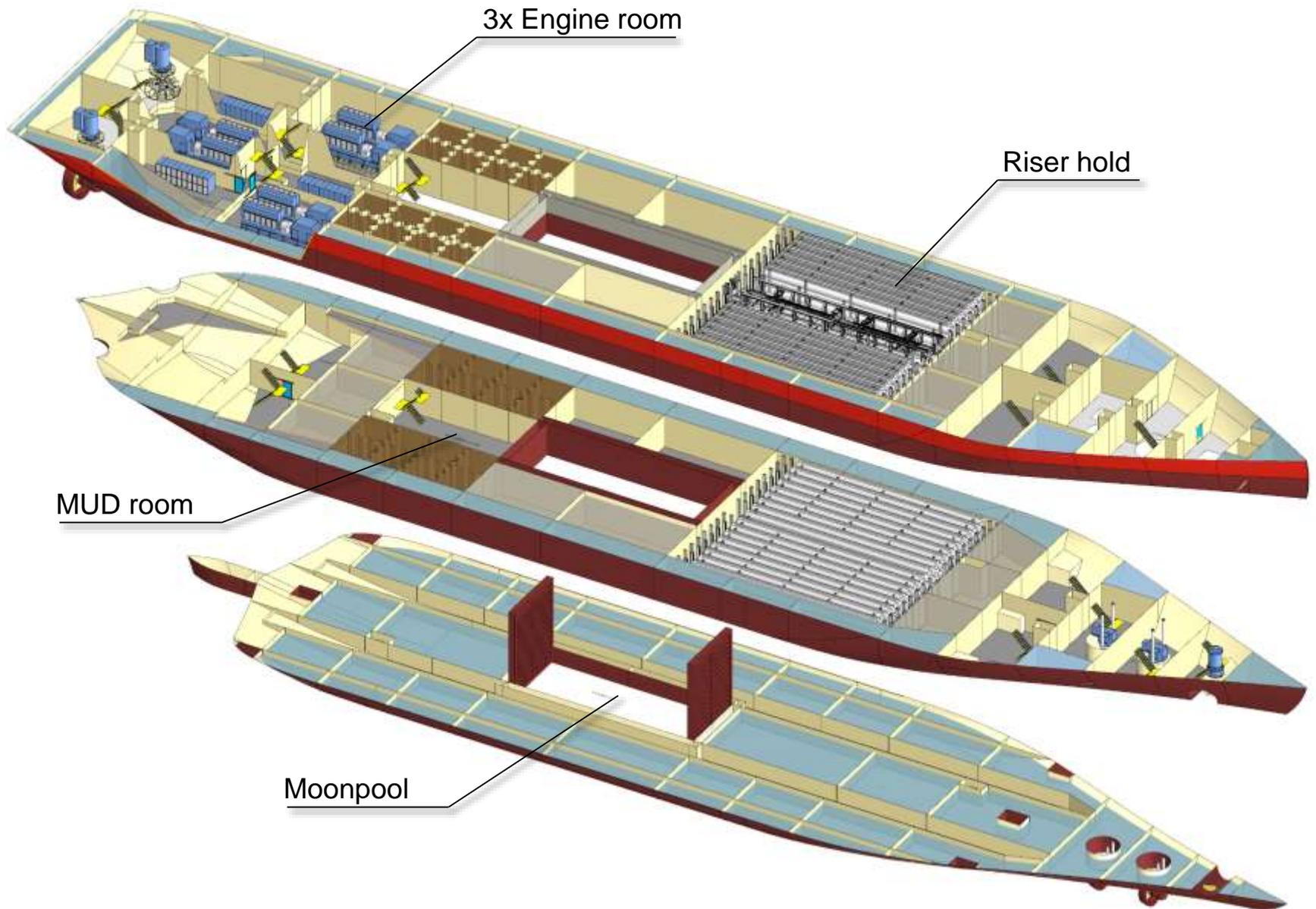
Survey pit

Control center

100 POB in 1P & 2P cabins







3x Engine room

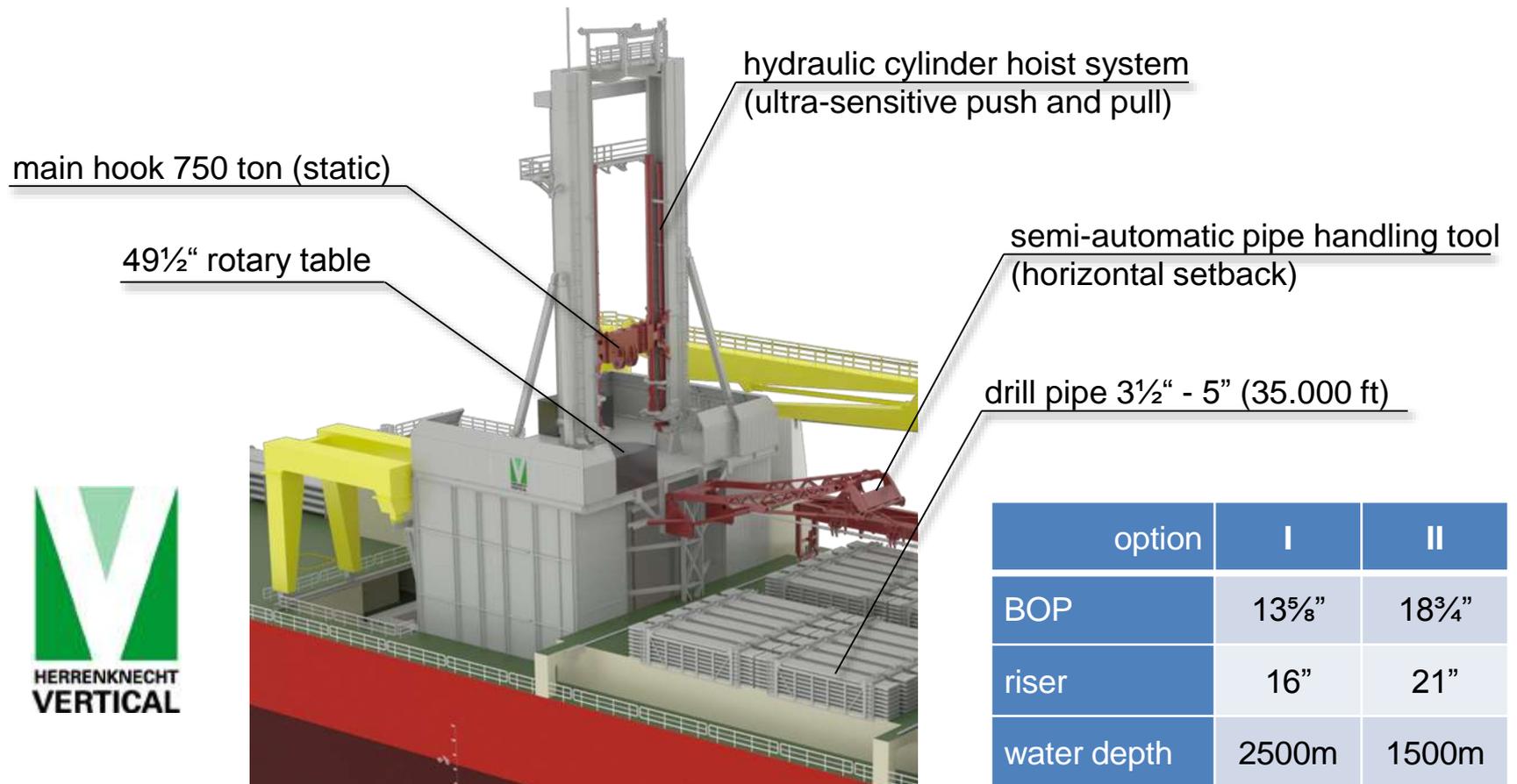
Riser hold

MUD room

Moonpool

HVG TERRA INVADER 750

WELL INTERVENTION TOWER



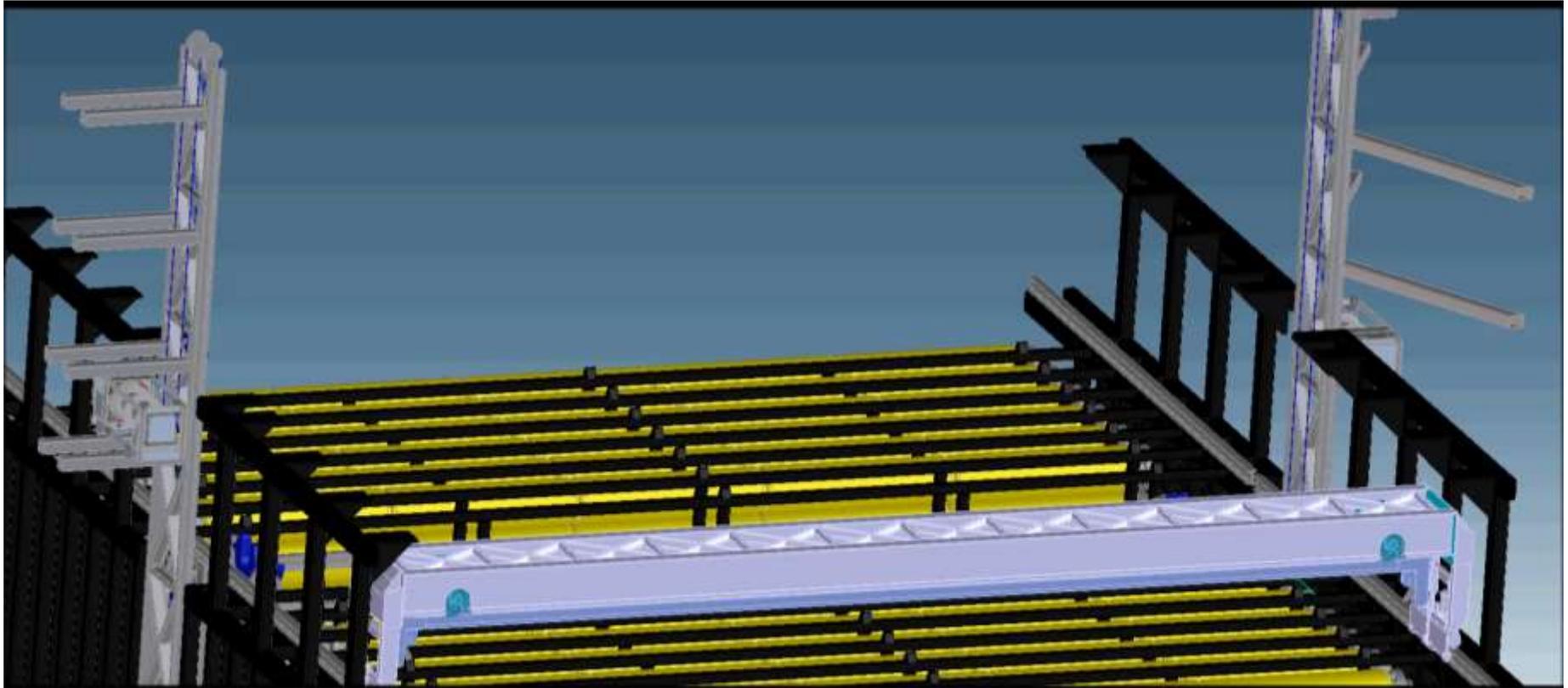
option	I	II
BOP	13 ⁵ / ₈ "	18 ³ / ₄ "
riser	16"	21"
water depth	2500m	1500m



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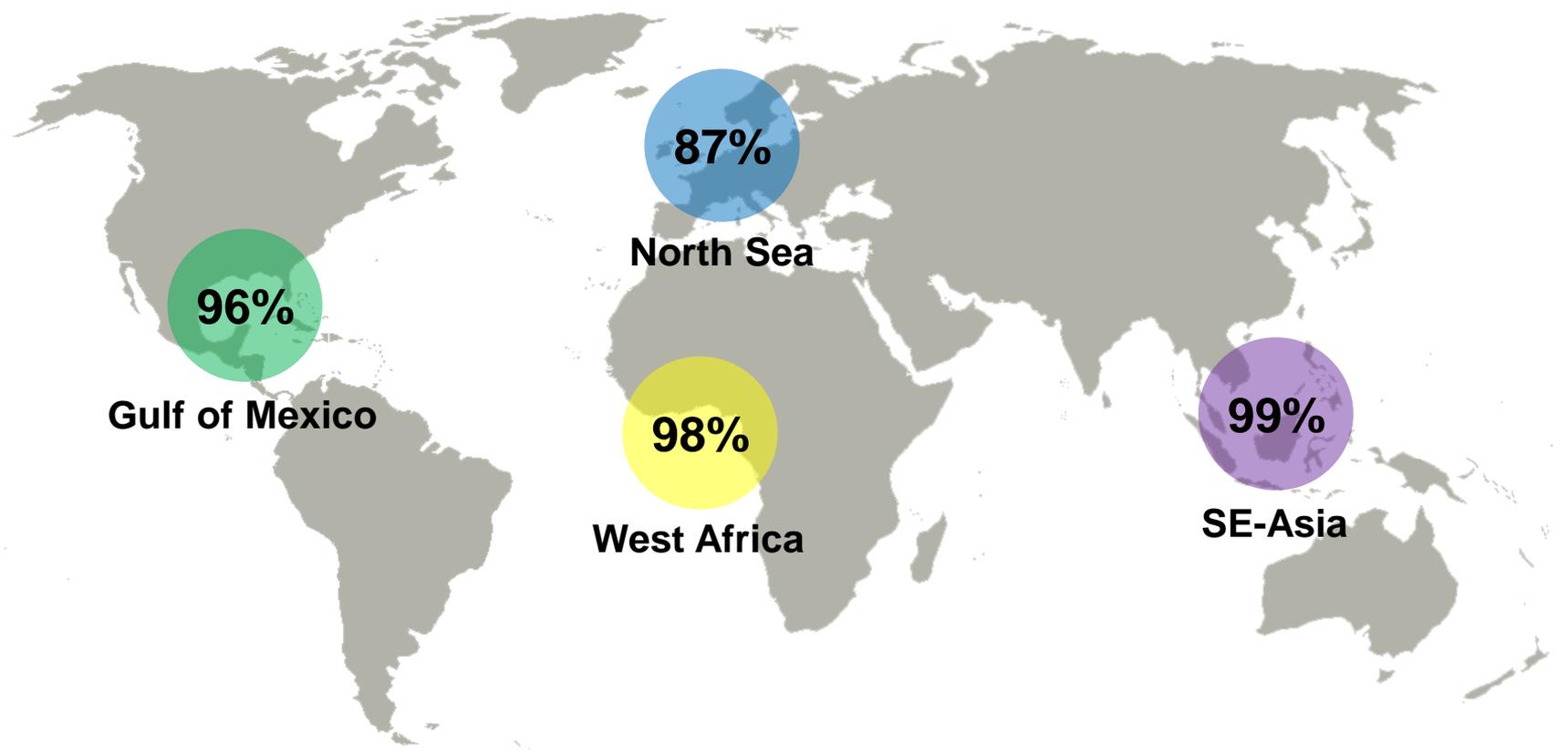
HVG TERRA INVADER 750

RISER HANDLING



DESIGNED FOR UPTIME

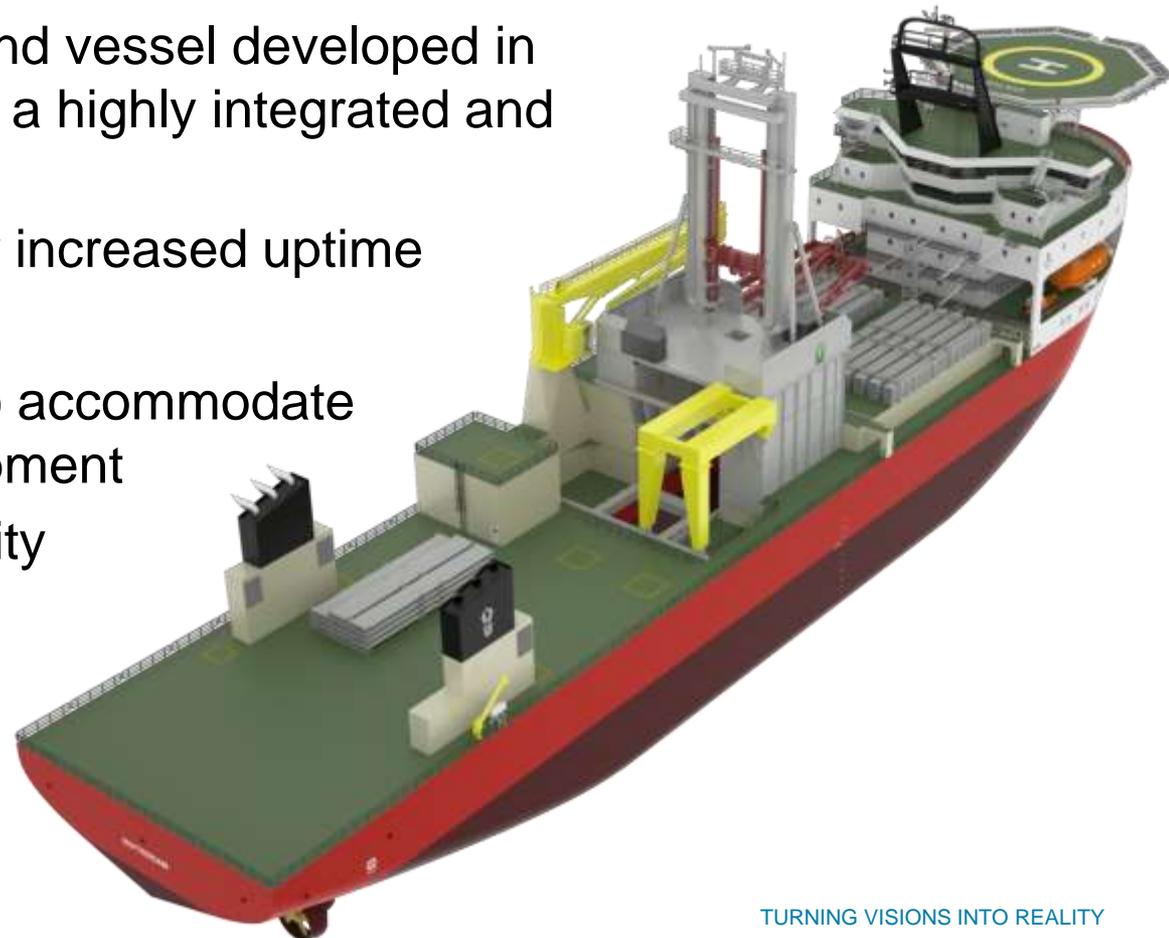
ULSTEIN DX105 & HVG TERRA INVADER 750



CONCLUSIONS

ULSTEIN DX105

- Intervention tower and vessel developed in synergy; resulting in a highly integrated and compact design
- Vessel optimized for increased uptime
- Large deck space to accommodate additional well equipment
- High payload capacity





PLEASE BE IN TOUCH!

ULSTEIN DX105 - HEAVY WELL INTERVENTION VESSEL



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