

ADVANCED OSVs TO MEET EXPANDING SCOPE OF OFFSHORE REQUIREMENTS

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Scope



- **Various offshore duties as per industry requirements**
- **Drawbacks of bulk of current vessels**
- **Need for advanced OSVs**
- **Innovations in equipment**
 - **Anchor handling**
 - **Crane**
 - **DE propulsion**
 - **Advanced dynamic propulsion**
 - **Flexibility in cargo handling**
- **Continuous design innovations – an example**
- **Enhanced seaworthy vessels through superior hull**
- **The first flotel of the offshore industry**
- **Other high end vessels**
- **Futuristic wind powered vessels**

Various offshore duties



Supply runs

Towing

Anchor Handling

Tanker assistance

Accommodations

Helideck

Moonpool

Seismic survey

Well stimulation

Crane for construction

IMR

ROV interventions

SAT Diving

Air Diving

Sub sea installation

Offshore construction

Surveys

ROV Support

Standby and rescue

Drawbacks of bulk of current vessels



- **Most of current operational vessels are not multifunctional vessels**
- **Lack of redundancy leading to unsafe conditions and emergency situations**
- **Lesser capability plots which leads to disruption of vessel support in bad weather**
- **Limited operation of crane in bad weather due to rough vessel movement**
- **Lack of proper facilities to launch and operate ROVs**
- **Involvement of crew in the aft deck during dangerous anchor handling operations**
- **Lack the advantages of Diesel electric engines (better control and usage of power)**
- **Non compliance with upcoming stringent HSSE regulations**
- **Lack emergency management**

Need for advanced OSVs



Basic features of next generation vessels

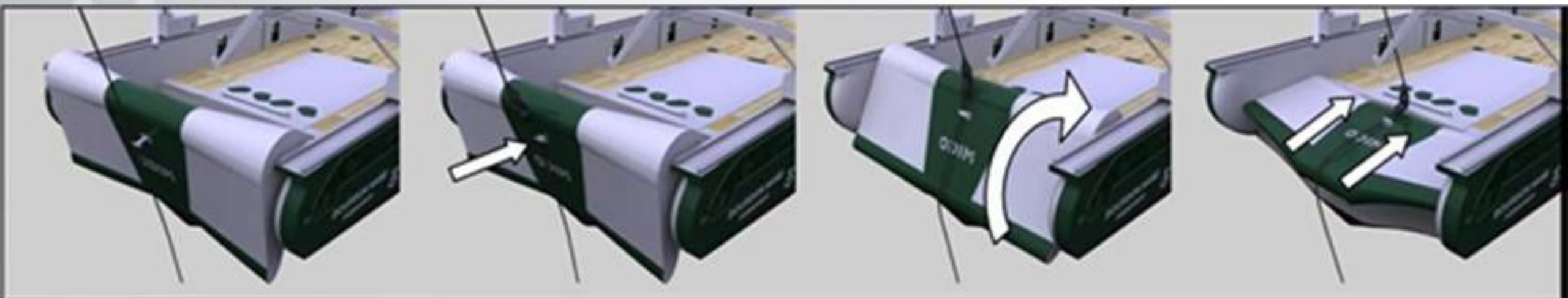


Next generation anchor handling



Safe Anchor Handling System (SAHS)

- **No crew members needed in aft deck**
- **Extremely safe**
- **Very effective in deep waters**



Next generation crane



MacGREGOR delivered world's first subsea knuckle jib crane with fiber rope handling

- **250 T + Hydra-marine active heave compensated crane**
- **Designed with 250 T – 3000 m single line winch**
- **Prepared for 250 T single line fiber rope**
- **Effective in deeper/remote locations**
- **Heavier loads without strain**

**Extremely safe
and effective**

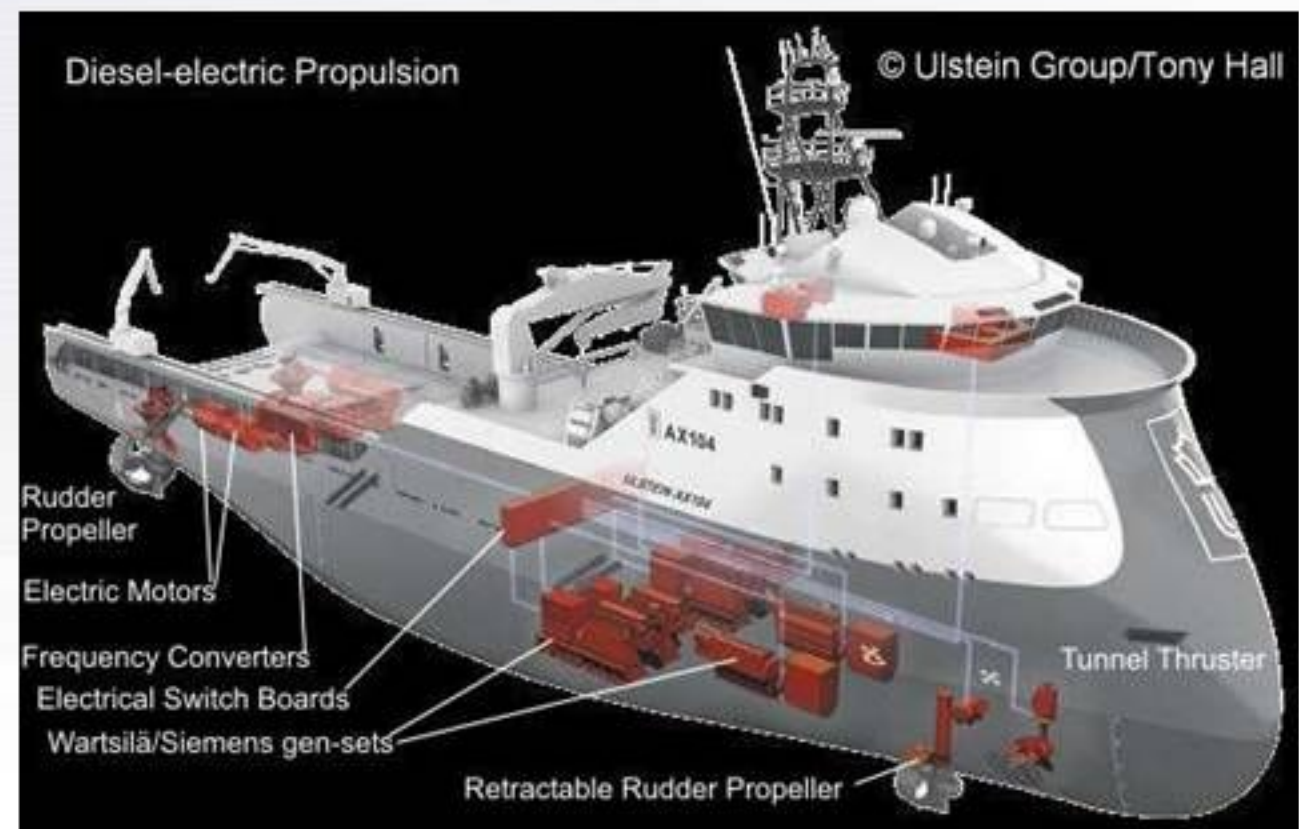


Diesel Electric propulsion system



- **Fuel efficiency and thus cost saving for operators**
- **Better equipped to comply with stringent HSSE norms by reduced emissions**
- **Better control and usage of power**
- **Effective in deeper/remote locations**
- **Enhanced dynamic positioning capabilities**

Allows operators to run a minimum number of engines at optimal loading



Advanced dynamic positioning – DP2/DP3



- **DP1 is not enough in high risk high precision construction/support activities**
- **Next generation advance vessels must be DP2/DP3 vessels**

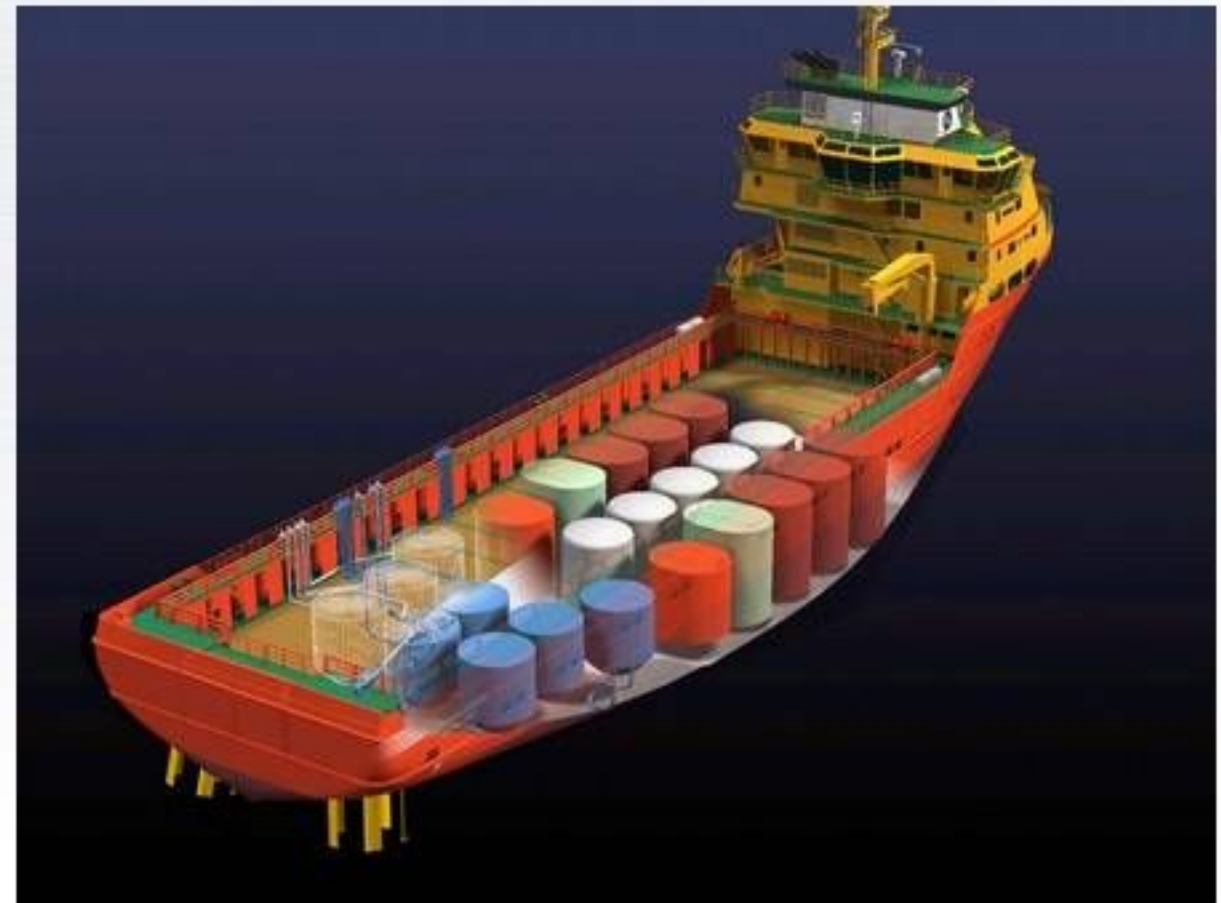


(Hornbeck TBN – Merwede Type 22 design – DP3 multipurpose construction vessel)

Flexibility in cargo handling



- **PG MACS (Multi Application Cargo Solution) – flexible under deck cargo handling**
- **Increases hold storage capacity – combination tanks for liquid/dry cargo**
- **Enhances capability to carry recovered oil from oil spillage**
- **Eliminates crane handling from rig to vessel**
- **Offers multi-functionality of tanks**
- **Eliminates personnel exposure to cargo**
- **High loading/discharging rates**
- **Saves time and hence costs**



Continuous design innovation – an example



- **Future oriented innovative**
- **Market tailored**
- **Competitively priced**
- **More efficient**

ENHANCED FUNCTIONALITY



(Ex: Aker evolution of Anchor Handlers from AH08 to AH12)

All in one: creating value for customers

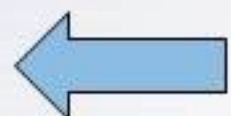


- Diesel Electric propulsion
- Accommodation for 120 people
- DP 3
- Helipad, moon-pool etc.

Skipsteknisk 

(ST 256-L)

- Pipe laying vessel
- Accommodation for 120 people
- 2 ROVs
- 350 T crane

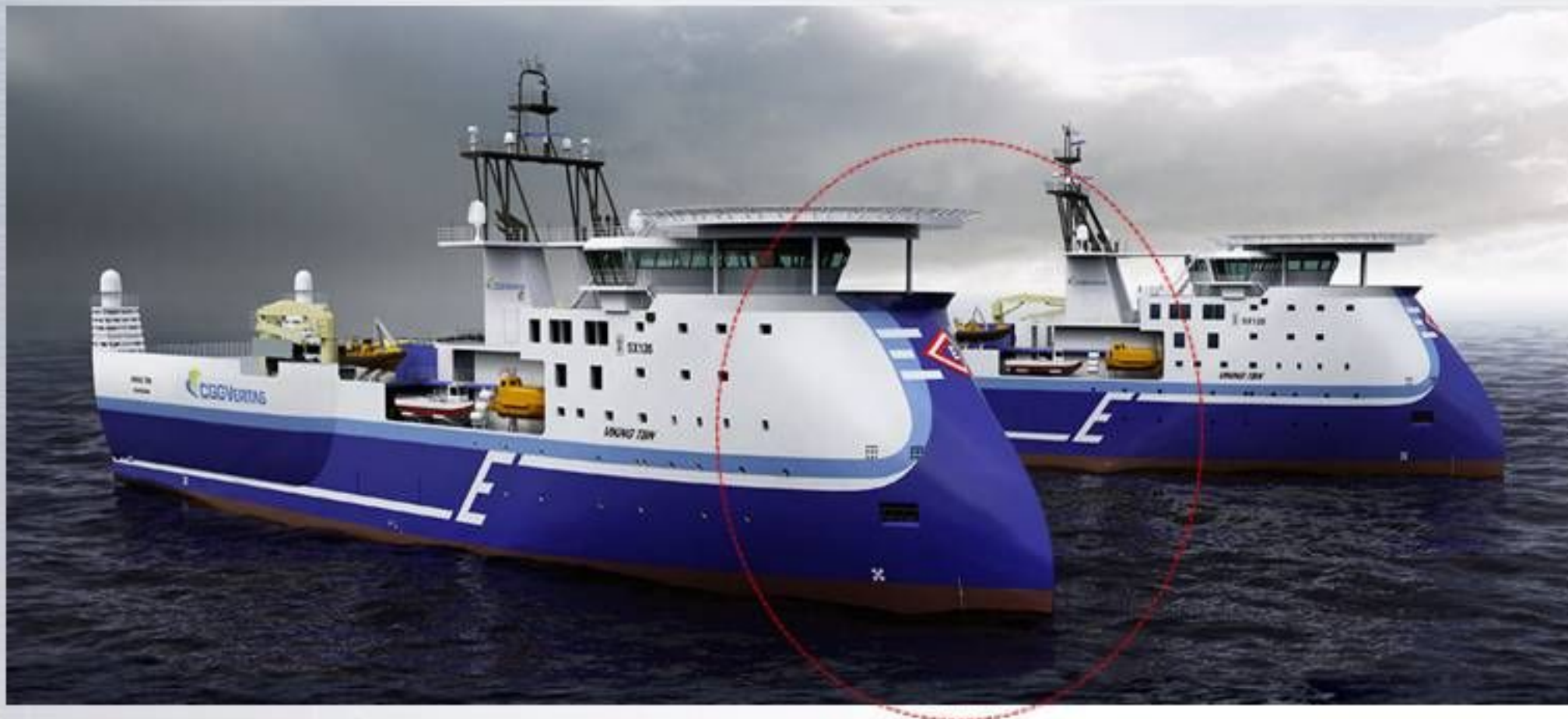


(Huismanltrec design))

Enhanced seaworthy vessels - superior hull



- **Enhanced sea worthy features such as X Bow TM (Ulstein SX 120 design)**
- **Improves the stability, fluidity and maneuverability of the vessel**
- **Enhances cruising speed in difficult conditions**



(Ulstein SX 120 Design – Superior Hull)

Accommodation services in offshore industry



- **Industry requires accommodation Services**
- **VS 4130 design EDDA vessel is the first dedicated FLOTEL**



(VS 4130 Design – EDDA Flotel– Offshore industry's 1st purpose built flotel under construction)

Other high end versatile support vessels



Other functions: Mud mixing, floating warehouse, fresh water generation

Offshore Wind: Tomorrow's Need?



- **Wind strength and quality of air flow**
- **Space for industrial scale development**
- **Very large turbines**
- **Fewer Environmental /community planning objections**
- **Clean Energy**
- **Fastest route for Utilities to develop new power plants**
- **Climate change concerns?**
- **The green lobby?**
- **Fluctuating oil & gas prices?**

2010: 1 GW/year

2014: 2.5 GW/year

2016: 6.5 GW/year

(Prospective installation in Europe)

Demand: 20 dedicated vessels from 2015
Supply: 1 vessel with proven track record



Wind power vessels



(Jack up wind power vessel)



(Futuristic wind power vessel)



(Floating wind power vessel)

Bibliography



- **Aker Yard design booklet**
- **Website of equipment manufacturers**
- **OSV world report**
- **A2SEA website**

THANK YOU

