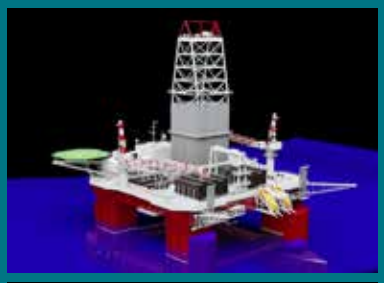
MRPC

Marine Roll & Pitch Control

Variable buoyancy for ideal stability



Stability solutions for all types of vessels and floating units

MRPC provides stability solutions for all types of vessels and floating units

Innovative solutions and modern technology, combined with competence and experience in marine and offshore operations, makes us the leading provider of these products and solutions.

We offer innovative solutions for variable vessel buoyancy, replacing traditional water ballast and anti-heeling systems, as well as passive and active stabilization systems.

In future weather conditions and environmental forces will change, with limitations in marine operations as a direct consequence.

Our primary objective is to control the environment, instead of being limited by it.

We provide solutions for the future.

Active stabilization

Reducing roll/pitch movement significantly

Our active stabilization solution is based on ballast water tanks open to sea in vertical direction, stretching above and below water baseline.

Air compressors directly connected to designated tanks regulate the volume of seawater inside the tanks, by creating overpressure or vacuum.

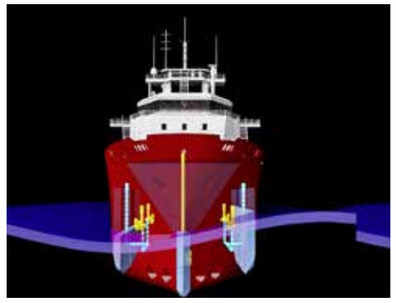
The Active stabilization controller provides quick and optimal filling in the tanks based on input from the sensor detechting the vessels movements.

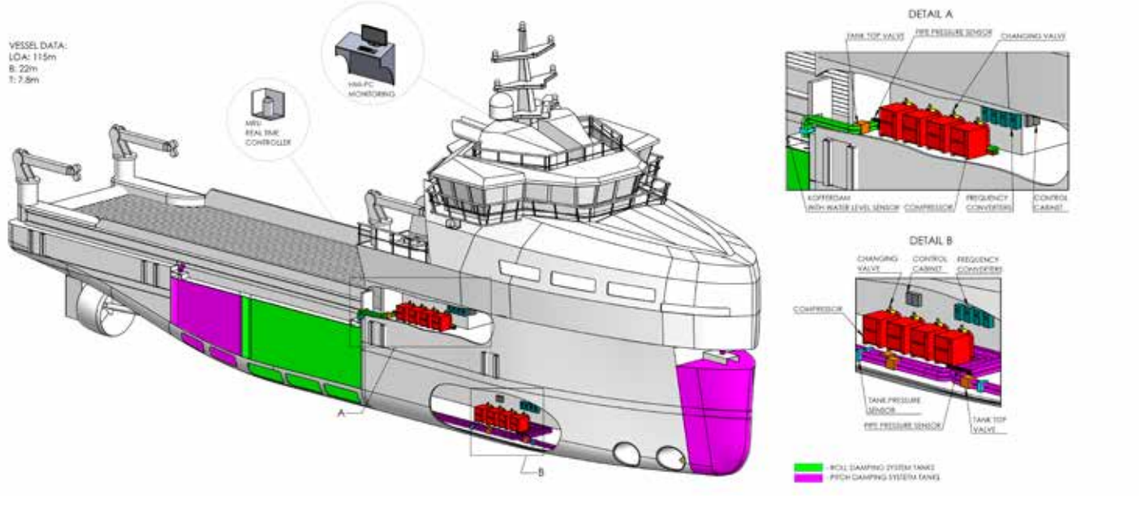
The result is a vessel being able to significantly reduce roll/pitch movement (75-85%) also when on DP, during subsea operations and when in stand-by.

The system may also be designed to communicate with other AHC (Active Heave Compensated) equipment onboard and by this expand the allowable weather window for subsea operations significantly.

Our active stabilization system is developed according to full redundancy policy. The solution is effective in all weather conditions, and is highly energy effective.

The system is certified and approved by flag state and class.

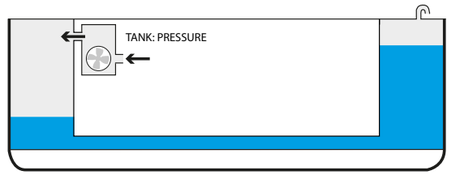




We have made a new and active control of the traditional “U-tank”

The ARDS (Active Roll Damping System) function on the U-tank design is achieved by applying air pressure and vacuum into one of the tank tops. The (selected volume of) water is forced to flow from side to side in a sequence prior to vessels expected motion. This system then reduces the vessels roll considerably.

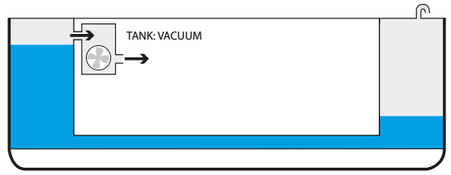
The control of the ARDS is done by air valves controlled by a dedicated PLC system together with a MRU (Motion Recording Unit).



MRPC`s passive control of a traditional U-tank.

The PRDS (Passive Roll Damping System) function on the U-tank design is by (selected volume of) water flowing freely inside the tank. This will match the vessels roll period.

If the time period is to be adjusted this will be done by adjusting water volume and implementation of special MRPC valve(s).



Anti-heeling

No need for fluid transfer between tanks

In a traditional anti–heeling system, fluids are transferred between dedicated tanks to keep the vessel or floating unit on an even keel.

Our system replaces traditional anti–heeling systems, ensuring equilibrium during operations with no need for fluid transfer between tanks. The solution ensures high efficiency and highly reliable safety standard during operations. The anti–heeling system is based on full redundancy policy.

Our anti–heeling system is a function of the variable vessel buoyancy product, using the same dedicated tanks to achieve equilibrium.

Variable vessel buoyancy

Quick and effective water ballast handling

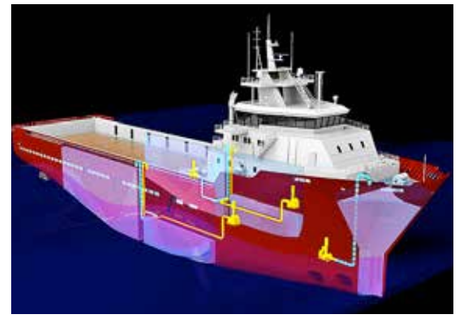
A traditional water ballast system is based on closed tank philosophy, using ballast pumps and ballast lines for filling and discharging, as well as displacement of water ballast between tanks.

Our solution replaces traditional water ballast systems.

Tanks open to sea and the utilization of energy available in air pressure and vacuum, ensure a much more quick and effective water ballast handling. Variable vessel buoyancy provides various opportunities for the customer according to specific operation demands.

Innovative solutions give our customers the advantage of being one step ahead of their competitors.

The system is certified and approved, and our professional suppliers of equipment and components are some of the most competent and experienced on the market.

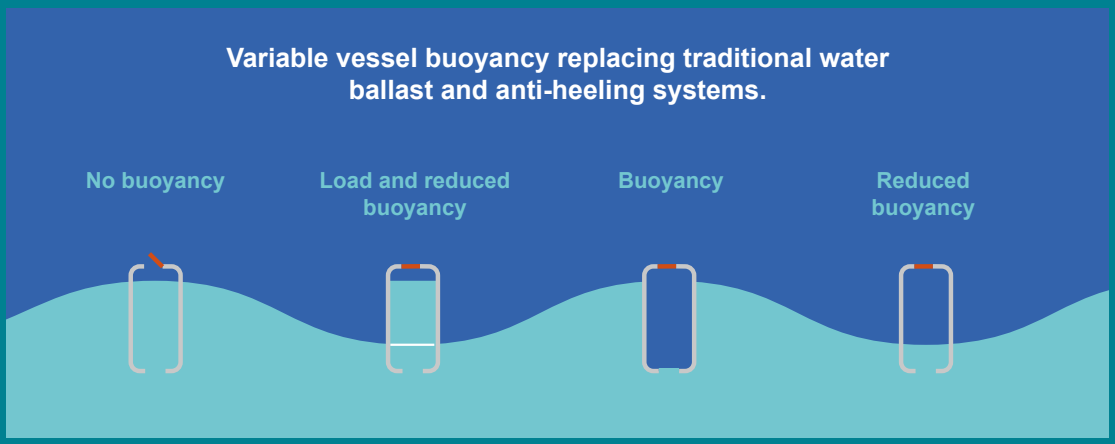


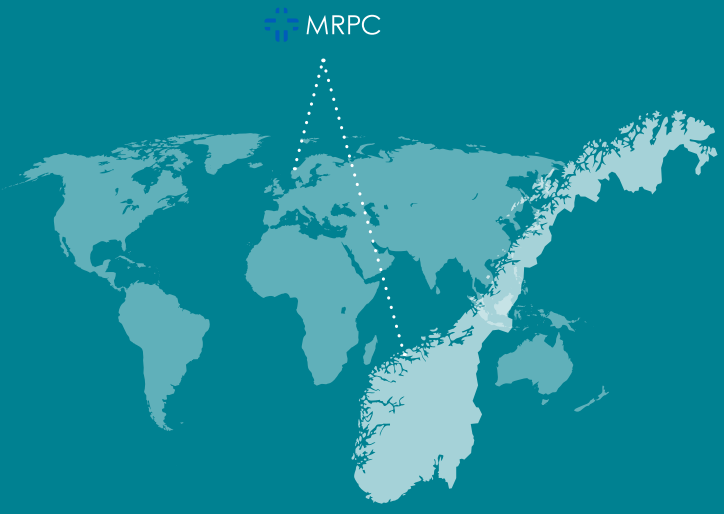
Trim of light weight passenger vessels

A new feature related to trim of light weight passenger vessels is also available.

A special version of the MRPC system can be installed in order to increase maneuvering capability when approaching/ leaving quay. The MRPC system can fill (and empty) dedicated tanks with seawater on short time (approx. 30 sec.). This will lower keel and avoid vessel being “taken by the wind” when approaching/leaving quay.

Our system principle





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