

Momac-Offshore-Access-Systems

MOTS & SLILAD, improve the safety of turbine personnel transfer
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Abstract

Experience from the early offshore **wind parks** has demonstrated that the difficulties of access is limiting turbine's **availability**.

Accessibility is mostly limited by **wave heights**. In most case, a safe boat transfer is no longer possible for significant wave heights above 1,5 - 2.0 meters. Apart from the ability to access with large wave heights, the cost of the chosen transfer system is a crucial factor.

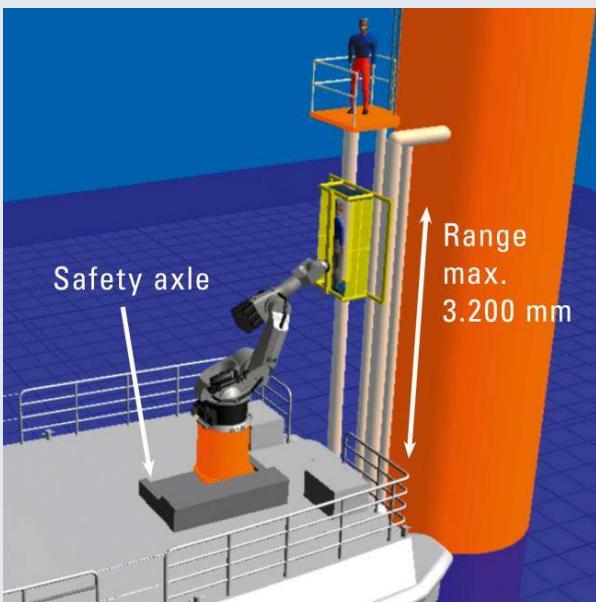
Cost is driven by capital investments, the possible additional load of the vessel, as well as direct operating cost such as travel time, personnel expenditure, fuel consumption and maintenance cost. In turn, these costs are dependant on the design of the chosen service vessel.

Momac has developed two offshore access systems, **MOTS** – a ship mounted active system, and **SLILAD** – a turbine mounted passive system.

Objectives

- Increase in personnel safety during turbine access
- Simultaneous increase in accessibility
- Sized for small to middle vessels
- Compact system with easy installation.
- Max. weight of the system approx. 4 tons
- Use of proven technology
 - High security for the personnel
 - High reliability
 - Reduced operating costs
- - Reduced investment

MOTS (Momac-Offshore-Access-System)



MOTS: Active System | Ship Mounted

- Self-stabilizing system that provides safe access to offshore structures by actively compensating for the motions of the vessel
- Combination of proven robotics technology and real time motion measurement equipment
- Installation possible in small and fast vessels without Dynamic Positioning (DP)
- Can be used on existing transfer structures without modification
- Safe system, even in case of power breakdown or other failures
- Low-maintenance and seaworthy construction

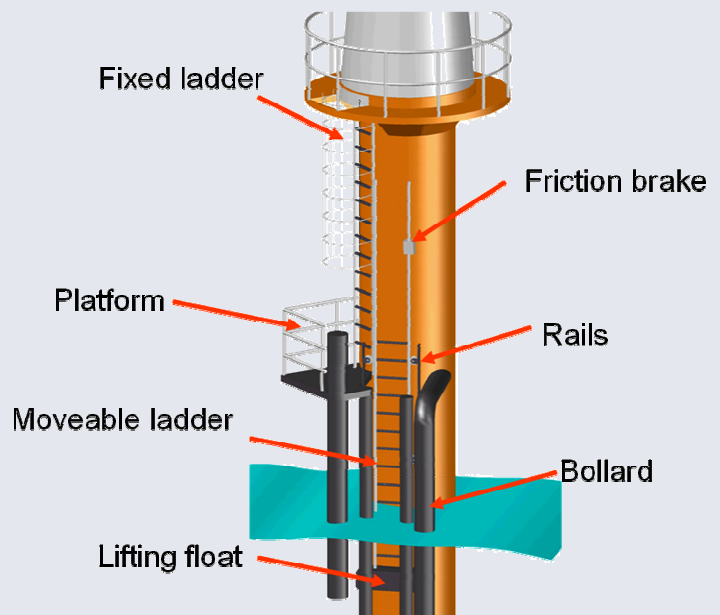
Movement compensation: 6 degrees of freedom
max 3.200 mm vertical + dumping of the vessel
System weight: app. 3.400 kg
Electrical connections: 3-Phase 400VAC, 14 kVA

The compact design of the robot-based MOTS makes installation possible even on fast service catamarans, consequently the accessibility to the wind-turbine can be substantially increased and the journey times can be kept as short as possible.

SLILAD (Sliding Ladder)

SLILAD: Passive System | Turbine mounted

Increases the security of boat landing from small vessels.



Operations:

- The vessel locks on the ladder so that it can follow the heaving motion.
- Personnel steps on the sliding ladder (No relative motion)
- The vessel disengages from the ladder. The ladder becomes fixed to the tower
- Automatic tide level adjustment, thereby no mussels or other vegetation on the used part of the ladder
- Simple and seaworthy construction

Movement compensation: Limited by vessel capabilities
Electrical connection: none

Results

Initial functional tests completed successfully.
Functional demonstration model and MOTS prototype at manufacturing stage.
The required safety features are being tested. Certification initiated.
Momac is looking for a pilot project for MOTS and SLILAD.

