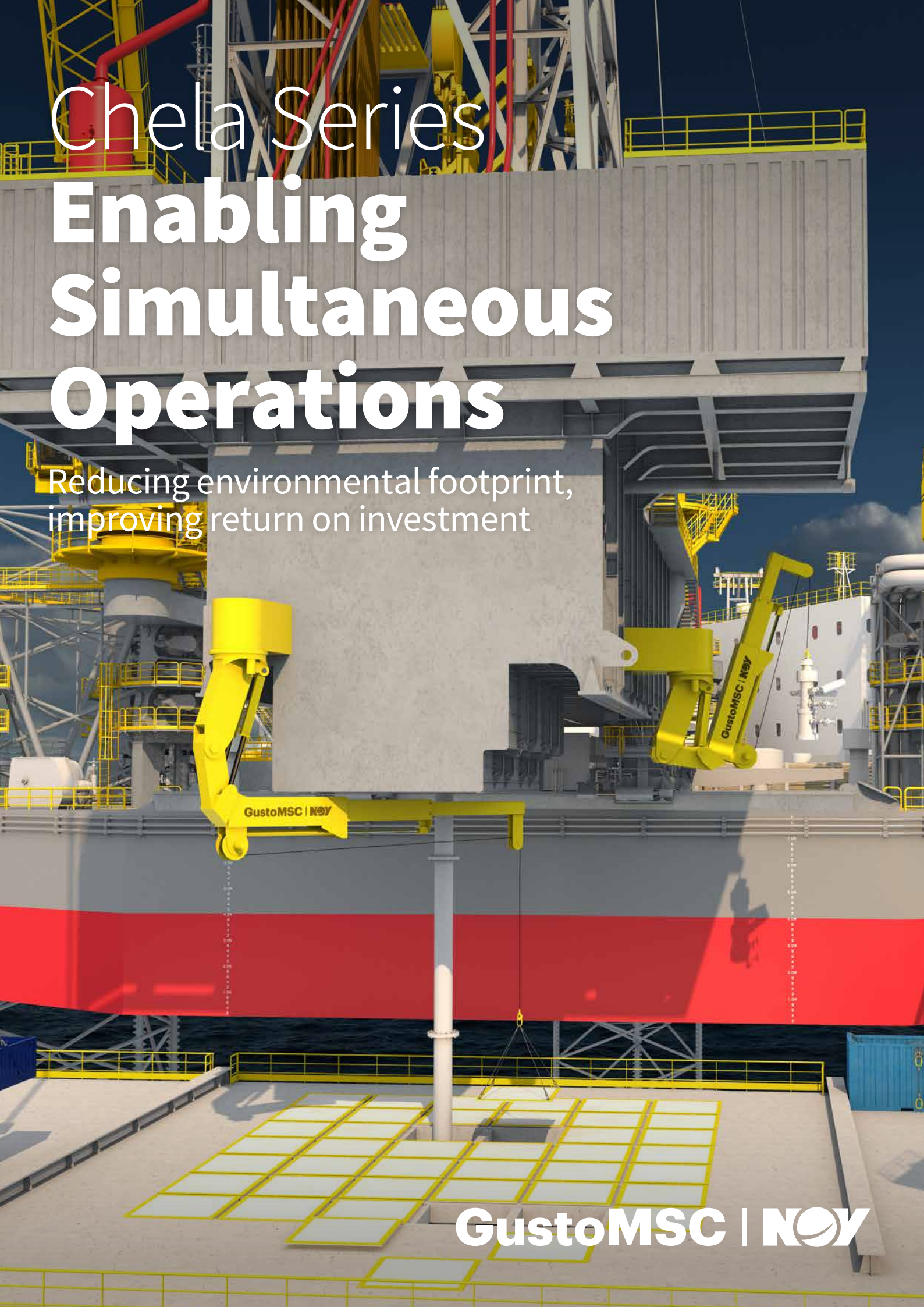

Chela Series

Enabling Simultaneous Operations

Reducing environmental footprint, improving return on investment

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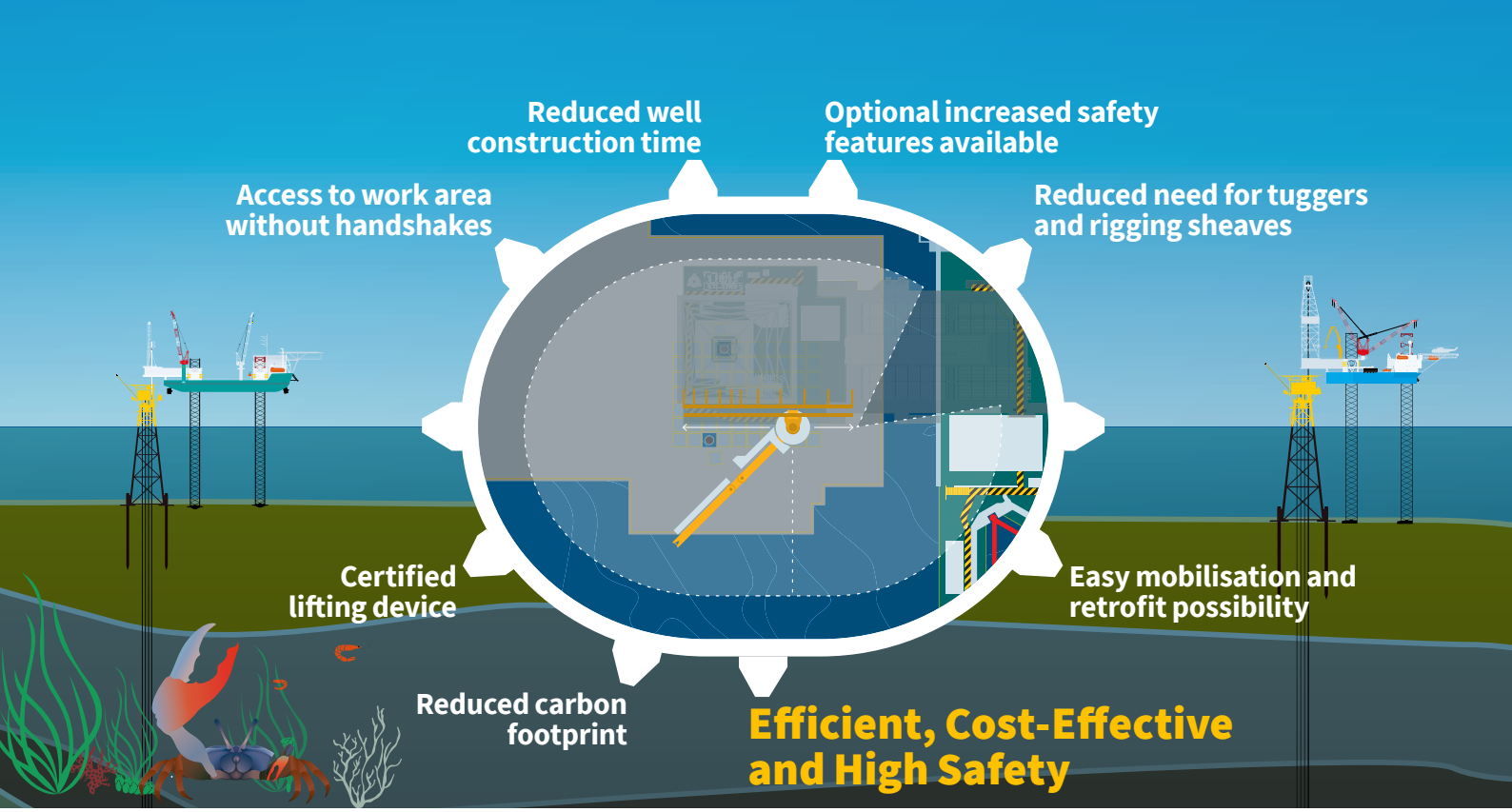

Chela, an extra hand below the cantilever

Named after a crab's claw, the Chela crane offers an extra hand in operations. Due to its crablike motion characteristics, it can reach below the cantilever as well as elevate towards the main deck, providing access to an area traditionally blocked by the drilling cantilever. Chela thus significantly reduces the total well construction time. Depending on the well-program, total time saved varies between 5 to 15% of total rig days per well. This proven technology represents a robust opportunity to improve the return on investment (ROI) for every well drilled. With fewer rig days per well, it directly reduces the industry's environmental footprint per well drilled while addressing the call for cost reduction from operators.

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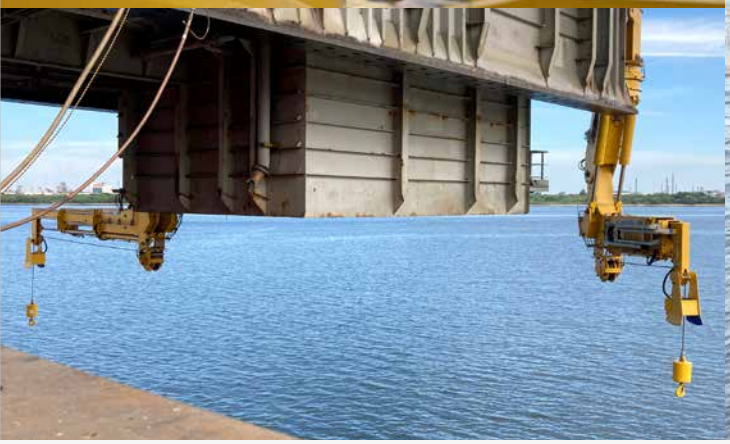

Saving valuable rig time and increasing safety

Enhancing efficiency, Chela can be fitted with a series of sheaves to guide a wireline to any position within the reach of the crane tip. In addition, it provides 8 up to 25 metric tons hoisting capacity underneath the cantilever at any position and has the possibility to reach to the main deck of the rig for a handshake with the rig's main cranes. It can transfer containers and pieces of equipment from the main deck of the rig to underneath the cantilever and vice versa in a single lift operation. This unique feature greatly enhances safety and efficiency, as main crane access to the wellhead deck from the drilling rig is normally blocked by the cantilever.

Facilitating simultaneous operations (SIMOPS)

Chela's moveable arm or extendable boom creates a sturdy hoisting point underneath the cantilever, enabling wireline operations separated from the drill floor. It thus provides a huge advantage in development drilling, infill drilling and plug and abandonment operations. The wireline operations can take place offline, on any other well, while the derrick moves on to the next well. This feature results in significant savings in rig days for plug and abandonment operations that can amount to around 15% compared to the conventional procedure, by facilitating offline activities such as logging and cementing that normally need to be performed in sequence on the drill floor.

Maximizing safety

Reducing human involvement, when done correctly, is advantageous from both a cost and safety perspective. As Chela separates wireline operations from the drill floor operation, it reduces human intervention on the drill floor and less interaction is required between different crews as rigging up for the operation is done offline. Enabling a single lift from the main deck to the wellhead platform below the cantilever reduces handshakes.

The high level of control, as a result of the short distance from crane tip to hoist, has a substantial impact on the overall safety of the rig.

Chela's main hoisting system can be made fully redundant to accommodate requirements stipulated by the operator. This is a key technical feature that provides additional safety when lifting and working over live wells. It is executed as a dual-winch system consisting of a two times 100% capacity winch. As a consequence, no single failure, including the failure of a single hoisting rope, in the chain of the dual-winch lay-out will lead to a high-risk situation. Additionally, it will keep the load steady after a rope failure. As an additional option, a snag load absorb system prevents excessive loads on the lifting ropes and structural parts of the crane.

Chela is controlled with a handheld remote, allowing the operator to be in the optimal position to oversee and control the operations at all times. The arm can be equipped with an anti-collision procedure to ensure that the load and boom do not collide with obstacles such as the riser at well center or topside modules below and aft of the rig.

Cost-effective

Chela can be hydraulic powered, or electric powered requiring little maintenance. It can be installed on a new build rig or retrofitted to an existing rig. Due to the efficient foundation interface with the cantilever, it requires only limited modification to existing cantilever structures. Chela is designed to be easily dismountable, and if the same integration points and type of jumper stations are used, Chela can be shared among different rigs within the fleet, increasing flexibility for the operator and contractor.

Chela Single

- With double knuckle crane boom
- Fully redundant hoisting system
- Single sided solution without blind spots
- SWL range up to 25 tons
- Working range from 4 to 20 m
- Electric powered
- Passive anti-collision system

Chela Twins

- With telescopic crane boom
- Cost-competitive
- Two independently operated cranes
- SWL range up to 15 tons
- Working range from 4 to 12 m
- Hydraulic powered

Common Features

- Remote controlled
- No man-riding
- No blind spots
- Low maintenance
- Simple to operate

Optional Features

- Wireline sheave guidance system
- Auxiliary hoist 5 t (constant tension)
- Fully electrical with cloud-based data logging, processing and monitoring
- Fully redundant hoisting system
- Fully redundant actuation and control systems
- Anti-swing hook
- Anti-snatch load system (shock load absorbers)
- Active anti-collision system
- Man-riding
- Gripper functionality
- Can be mounted on a horizontal skid beam for enhanced coverage

Maersk Invincible, world's first with Chela crane

In 2019, the first Chela crane was delivered to Maersk Drilling and installed onboard the Maersk Invincible - an ultra-harsh environment GustoMSC CJ70 drilling jack-up design. It has proven its claims while operating offshore in the Valhall field for AkerBP.

Scan for more information on the Chela project for Maersk

The Pioneers of Offshore Engineering

GustoMSC is recognized for providing advanced design & engineering consultancy for mobile offshore units and reliable equipment. In close cooperation with our clients, we translate experience, science and technical knowledge into realistic and innovative ideas. In this way, GustoMSC enables and supports safe and efficient operations at sea, contributing to a sustainable future.

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