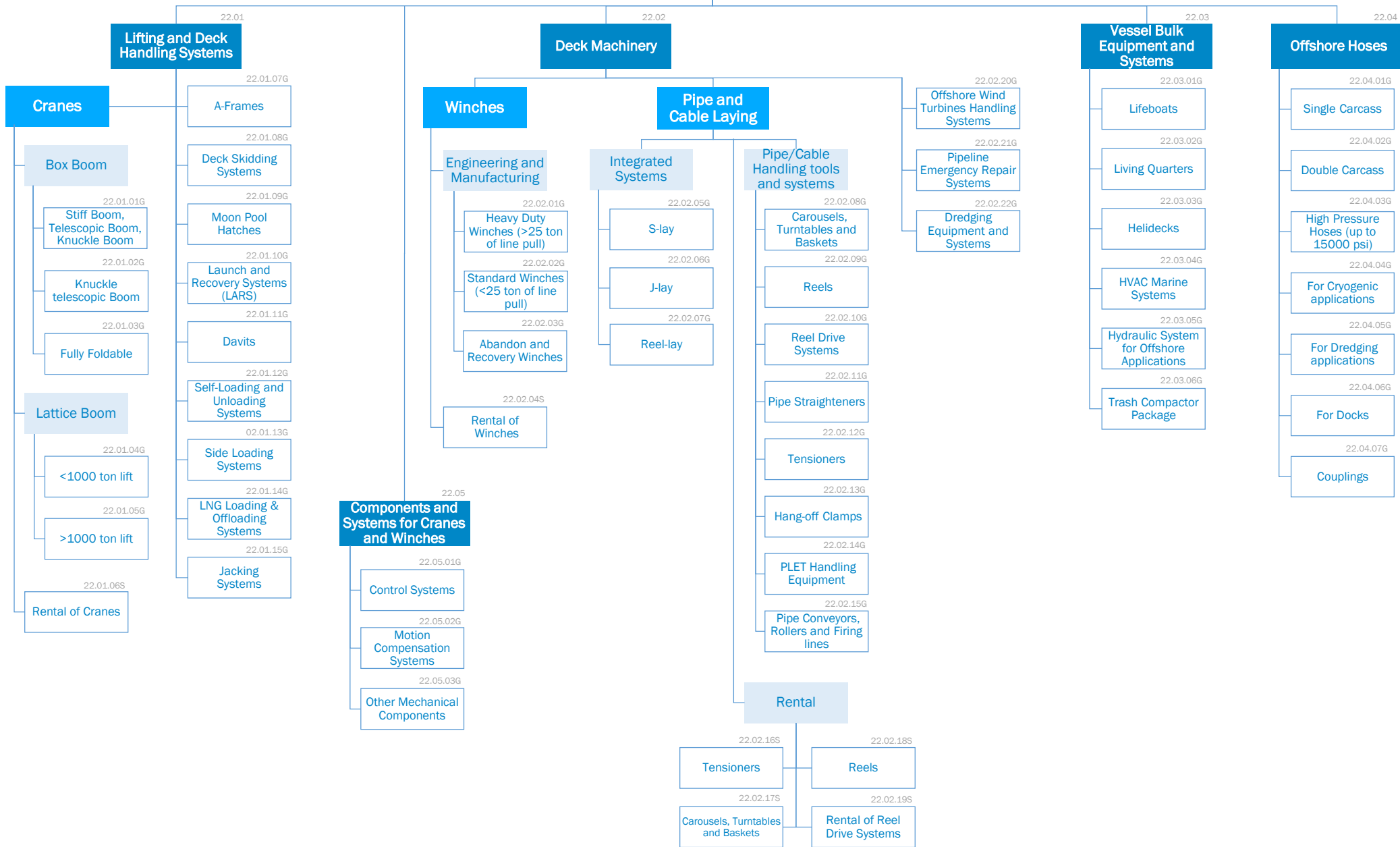


# 22 Components and Systems for Offshore Activities



# Components and Systems for Offshore Activities

This Group of Categories identifies the mission specific and ancillary components and systems required for offshore operations with vessels. In fact, the components and systems that enable the vessel to navigate in safety and that are common to all vessels, no matter of the operational need of the vessel itself, and are mapped in Group 21.

Mission specific equipment and systems are utilised by various aspects of the Subsea sector including Oil & Gas, Exploration & Production, Subsea Minerals, Submarine Fibre Optic Communication, Power Cable installation and Renewable Energy project.

The Systems are developed according to the competences of a System Integrator that design the solution and procured the required components.

## MAIN RATIONALES BEHIND THE STANDARD CATEGORIZATION

### Lifting Systems and Deck Handling equipment

- “Offshore Cranes” refer to all types of Cranes, excluding A-Frames
  - Offshore Cranes are typically tailor made designed according to the customer requirements, in order to prevent all the risks that an offshore handling equipment could meet;
  - Typical application of Offshore Cranes are: DSV vessels, Subsea construction and maintenance vessels, PSV, AHT and AHTS vessels, Drill ships, FPSO/FSO, Research vessels, Seismic vessels;
- This Family does not include Truck Mounted Specialized Material Handling Cranes.
- Rental of cranes refers to small / medium foldable cranes, easily installed on vessels' decks. Therefore, the rental of port / shipyard cranes for on-pier assembly operations of offshore constructions is excluded.
- All types of Side loading system are covered in the related category: conveyor system, side mover, side swinger.
- Jacking Systems include Single acting hydraulic jacking systems as well as Continuous hydraulic jacking systems.

### Deck Machineries

- Winches can be used for different application: load lifting, Umbilical/Subsea/Heavy lift, abandonment and recovery and general purpose.
- Winches are not detailed by type of driver: hydraulic, electric, electro-hydraulic.
- Rental of winches refers to hydraulic, electric or pneumatic driven devices.

- Capstans are a Category of the Group 21.
- Integrated Systems for Pipe and Cable Laying are delivered by Systems Integrators that can leverage on the combination of engineering and Project Management competences.
- Trend of increase in integration of the pipe/cable laying systems with the vessel, also through automation of working processes and integration of automation systems.
- Tensioners refers to systems for pipe, umbilical, cable and optic fiber.
- In terms of pipe-laying methods:
  - The S-Lay derives name from “S” curvature of pipe under the water and are typically used in shallow waters (<6,500 feet);
  - The J-Lay derives name from “J” curvature of pipe under the water and is typically used in deeper waters than S-lay vessels;
  - The Reel-lay derives name from on-board ability to reel pipe (like a fishing line); Reels can unwind horizontally or vertically: Horizontal reels lay pipe in S-Lay configuration, Vertical reels lay pipe in J-lay configuration.
- Carousels are used for storage during transportation and installation of flexible pipe, umbilicals, risers and other products for offshore applications.

### Vessel Bulk Equipment and Systems

- Lifeboats is a generic category for all types of lifeboats ranging from Free Fall Lifeboats, totally enclosed Lifeboats, Rescue Boats, Hyperbaric Lifeboats and Offshore Capsules.

### Offshore Hoses

- Double Carcass hoses have a primary carcass surrounded by a secondary carcass – in essence a hose within a hose.
- Cryogenic hoses refer to Hoses for offshore LNG transfer.

### Components and systems for Cranes and Winches

- This family refers to the principal components and systems that can be delivered integrated in the main drive systems as well as an add-on to an existing systems.
- Mechanical components refer to the principal items used to design a crane, winch or A-Frame (e.g., Gearboxes, bearings, brakes).
- Heave compensation systems can vary from Active to Passive. AHC differs from PHC by having a control system that actively tries to compensate for any movement at a specific point, using power to gain accuracy. This category includes also constant tensions (CT).