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Huisman is a worldwide operating company with extensive experience in the design and manufacturing of heavy construction equipment for world’s leading companies in the renewable offshore wind and geothermal energy, oil and gas, civil industries and entertainment markets. Our product range can be divided into six main categories: Cranes, Pipelay Equipment, Drilling Equipment, Winches, Vessel Designs and Specials. Our projects vary from stand-alone to highly engineered and integrated systems, from concept to installation and life time support.

GLOBAL OPERATIONS
A global market requires global and local solutions. Therefore, Huisman expanded its engineering and production capacity in 1997 from Schiedam, The Netherlands, to Sviadnov, Czech Republic, in 2007 to Fujian, China, and in 2015 to Santa Catarina, Brazil. The Huisman production locations together generate a total production surface of over 115,000m². For additional local sales, engineering and service support, Huisman holds offices in Houston (USA), Bergen (Norway) and Singapore.

QUALITY
The equipment delivered by Huisman is often the critical main equipment and its reliability is of utmost importance to our clients. Delivering high quality products has therefore been a key company value since our establishment. As a result, our equipment is internationally known for its high quality and reliability during operations. It meets the most stringent performance criteria and is certified by recognised authorities such as Lloyd’s, DNV, ABS, TÜV, API, etc.

INNOVATIVE SOLUTIONS
We are constantly working on new solutions and systems, which we believe add value to the market’s existing technologies. These innovations have been implemented into many of our products. As we have extensive operational experience with a wide variety of heavy construction equipment, we are able to use the best solutions for new products and projects. Our internal disciplines include Mechanical, Structural, Naval, Hydraulic, Electrical and Software Engineering.

SERVICE
A dedicated worldwide operating service team of skilled professionals is on stand-by to provide advice, training and service support before, during and after installation and delivery. These services are offered for both Huisman equipment and third party equipment. Our service network is managed from Huisman Global Services in The Netherlands, our local service offices are on stand-by to provide service support, on location, as well as by remote access.

SAFETY, HEALTH AND ENVIRONMENT
We have high values on being a responsible company. Therefore, the safety, environmental and health impact of our operations is a priority within all stages of the project including product design.

TURNKEY DELIVERY
Our in-house design and engineering expertise, in combination with our production, testing, commissioning and installation facilities, enable us to deliver custom designed equipment on a turnkey basis.

RELIABLE PARTNER
Due to our strong belief in long lasting partnerships with our clients, our commitment to finding new technical solutions and our dedication to delivering them as turnkey projects, we are internationally valued as a solid, reliable partner. Our extensive track record and the large number of long lasting client relationships prove that we deliver state-of-the-art equipment, fully tested, within schedule and ready for commercial operation.

TRAINING
From various locations worldwide, Huisman services facilitates the training of knowledge and skills to safely and efficiently use heavy construction equipment.

HUISMAN PRODUCTS
CRANES
PIPELAY SYSTEMS
DRILLING EQUIPMENT
WINCHES
VESSEL DESIGNS
SPECIALS

Huisman location in Schiedam, the Netherlands, with the Huisman Innovation Tower (HIT) at the quaiwde.
Huisman is a worldwide market leader in the turnkey delivery of deepwater pipelay systems. We deliver dedicated systems such as Flex-lay systems, S-lay systems, J-lay systems and Reel-lay systems. We also deliver combined systems such as the Multi-lay systems. In addition to fully integrated pipelay systems, we can also provide a full package of related standalone equipment such as baskets, reel drive systems, etc.

The complexity of our projects and their innovative character require solution-oriented thinking, technical excellence, creativity and a drive for innovation. This is why we not only provide standardised pipelay systems, but also highly customised pipelay systems. By closely cooperating with our clients and their vessel designer of choice, we can meet client specific lay requirements and create the pipelay systems of the future, equipped for deeper waters and higher capacities.
PIPELAY

FLEX-LAY SYSTEMS

Over the years Huisman has designed and delivered a large number of Flex-lay systems. The Flex-lay method combines capabilities for the installation of flexible pipelines, risers and in-line structures. The most notable features of a Flex-lay system are its vertical ramp, equipped with one or more tensioners, and a chute or wheel on top.

The ramp is kept upright by two fixed struts to the deck or can be made adjustable with an adjuster system. The flexible pipe is spooled from a reel, carousel or basket, and then bent over the chute and guided through the tensioners into the water and onto the seabed.

Flex-lay systems offer an efficient pipelay method with a specific advantage: the installed pipelines are less sensitive to fatigue and therefore require less complex installation and abandonment and recovery procedures. Flex-lay systems are less suitable for the installation of rigid pipe, but can be adapted to perform J-lay or Reel-lay.

The large variety of Flex-lay systems we have delivered has broadened our scope of expertise, from concept design to start-up of operations. This has enabled us to easily customise and further develop Flex-lay systems for larger water depths and the handling of larger PLETs.

FEATURES FLEX-LAY SYSTEM

- Installation of flexible pipelines, risers and inline structures
- Suitable for laying pipe in shallow to deep waters
- High lay rates
- Pipes are flexible and therefore less sensitive to fatigue
- Less complex installation and abandonment and recovery procedure for pipelines and in-line structures
- Not suited for installation of rigid pipe in standard configuration
J-lay is used to install subsea rigid pipelines in deep water. With a J-lay system pipe stalk, consisting of up to six pipes with a total length of 72m, are upended and welded to the seagoing pipe in a near vertical ramp.

The ramp angle is adjusted so that it is in line with the pipe catenary hanging to the seabed. This way bending of the pipe is kept to a minimum. The J-lay method is very suitable for deep water pipelaying because the pipe leaves the lay system in an almost vertical position and the pipeline is only bent once during installation (on the seabed). This reduced amount of bending is beneficial for installing pipelines that are sensitive to fatigue. Compared to other lay methods, J-lay has a relatively low production rate due to the limited number of workstations. The J-lay method is less suitable for shallow waters as this requires a close to horizontal departure angle.

We have solid experience in delivering complete J-lay systems including tower structures, tower angle adjustment systems, pipe handling equipment, line-up systems and the control system.

FEATURES J-LAY SYSTEM

- Installation of deep water rigid subsea pipelines
- Installation of large diameter and concrete coated pipelines
- Beneficial for installation of fatigue sensitive pipes such as risers
- Equipped to install special items such as PLETs
- Relatively low production rate due to the single welding position
- Very high pipelay tension
- Less suitable for shallow water pipeline installation
With the S-lay installation method, pipe joints are welded onboard, leave the vessel horizontally and are guided by a stinger; a pipe supporting structure that is supported behind the vessel and controls the bend radius of the seagoing pipe string to prevent excessive bending.

Due to the high production rate and the possibility to install concrete coated pipe, S-lay is extremely suitable for pipe installation in shallow and intermediate water depths. Larger water depths are also possible, but require a relatively long stinger and a large vessel to support it.

An example of a Huisman designed and delivered S-lay system can be found onboard Subsea 7’s ‘Seven Borealis’. This vessel combines a 600mt S-lay system with a J-lay tower for pipelaying purposes and a 5,000mt Offshore Mast Crane for heavy lifting and deep water construction.
Another method for the installation of rigid subsea pipelines is by Reel-lay. Long pipe segments are welded, tested and coated onshore and then spooled onto a large, usually vertically oriented pipe reel, in one continuous length. Once the Reel-lay vessel is in position, the pipe is unspooled, straightened and then lowered to the seabed as the vessel moves forward.

The major advantages of Reel-lay are the high production rate as well as the controlled welding and inspection conditions onshore. These advantages make Reel-lay an extremely efficient method for the installation of pipelines in all water depths. To make Reel-lay efficient, a spoolbase is required nearby the Reel-lay vessel to reduce transit time to and from the pipe installation location.

We can deliver complex Reel-lay systems including main and piggy-back reels, traction and storage winches, tensioners and supporting cranes.

An example of Huisman’s innovative drive is the development of a modular skidding reel. This type of system can carry several reels with pipe on deck, which can be lifted onboard the vessel using her own main crane and can then be skidded over deck rails to unspool over the ramp. With this setup it is possible to exchange the empty reels with full reels without the pipelay vessel having to shuttle between the pipelay location and the spoolbase. This results in a more efficient use of the pipelay vessel and a higher effective lay rate. Reel-lay can be easily combined with Flex-lay capabilities.

### FEATURES REEL-LAY SYSTEM

- Suitable for shallow to ultra-deep waters
- Very high production rate
- Pipe welding in non-critical vessel time (onshore)
- Dedicated spoolbase required for pipe preparation
- Diameter of the pipe is restricted by the size of the reel
- Not suitable for installation of concrete coated pipe
- Used for pipelines with thermal outer coatings or inner linings
- Due to the plastic bending less suitable for fatigue sensitive pipes
Pipeelay contractors more and more often decide to combine pipeelay methods onboard one vessel as the infrastructure of an oil and gas field often consists of different types of pipe that require different lay methods. This allows for large flexibility and cost efficiency as one vessel is capable of operations in most water depths and is equipped with the most cost efficient installation method for the specific pipe.

One of our Multi-lay systems, onboard Subsea 7’s “Seven Seas”, features a single firing line - combining Flex-lay, J-lay and Reel-lay - and has been awarded the Maritime Innovation Award 2008. Our innovative and compact design of retractable tensioners and J-lay and Reel-lay modules that allow for installation onboard relatively small-sized vessels, is mentioned as a remarkable feature, as it offers more flexibility and efficiency.
Huisman has developed a range of small pipelay systems that can be easily transported and mobilised on relatively small vessels that are available on the local market. The systems can be disassembled in parts that can be transported by road. The systems can also be delivered as fully containerised versions. The range comprises S-lay, Reel-lay, J-lay and Flex-lay systems.

Pipelay systems can be enhanced with other capabilities such as deep water lowering and handling of subsea modules for well servicing. The functionalities can be combined without compromise because the Huisman tensioners, either retractable or fully opening, can clear the firing line to make way for other operations.
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