Performance to the Extreme
Trusted Experts for Offshore Asset Care
We Take Performance to the Extreme

Performing in the offshore arena means performing under extreme conditions. This applies to the people that work on platforms and vessels as well as the assets themselves. 24/7 operation in remote locations under harsh climatic and environmental conditions takes its toll on both people and equipment. Therefore, experts and technologies are called for that not only cope with, but excel in the face of the challenges they are presented with. Turn to ROSEN’s experienced team of offshore experts for flexible, multi-purpose, and future-proof solutions.

harsh environment deep water long distance extreme temperatures
Future-proofing your asset

Proper asset care means ensuring its integrity and performance at all times. This requires a comprehensive understanding of the asset’s current and predicted future condition, as well as actions to ensure sustainable, safe, efficient, and reliable operation for many years to come. To achieve this, sophisticated solutions for planning, inspection, maintenance, and monitoring are vital.

Naturally, all of these solutions can be applied at any time. However, a typical flow can be identified.

In the planning phase, detailed, individual asset integrity management (AIM) strategies are defined on the basis of system audits or risk-based analysis, for example. Then external and internal inspection solutions provide accurate and reliable data, the prerequisite for precise information on the asset’s condition. This, in turn, enables the development of effective maintenance programs. Finally, the information gained from inspection and maintenance facilitates targeted monitoring, leading to a demonstrably well-maintained asset.

During each phase, three factors play an important role as they are requisite for any operation and impact quality significantly.

Constant training and qualification of all personnel ensures their overall competence, thereby increasing the efficiency of all operations.

High-performance digital solutions for data alignment and evaluation preserve the value of any data gathered for future decision-making.

Expert engineering consultancy ensures that questions can be answered and uncertainties minimized, thus providing crucial information for every phase of AIM.

ROSEN Group understands the challenges operators are facing and offers innovative solutions for the many facets of asset care.
Planning

In the management of an offshore asset, the smallest inaccuracy may have severe consequences. Reliable information on an asset's integrity status is critical to speedy decision-making so that safe and efficient operation can be guaranteed.

Our asset integrity experts possess decades of experience. Inspection and assessment projects around the world, give us unique insight into what works and what does not. We can audit existing systems to identify gaps in order to help define and implement a best practice.

With a unique combination of expertise, practical experience, and digital solutions, we can:

- Develop robust risk-based inspection programs
- Define state-of-the-art corrosion management strategies
- Complete complex wave in-deck analyses
- Evaluate anchor snagging
- Identify and predict corrosion growth
- Calculate flexible pipe fatigue life
- Identify repair and rehabilitation options
- Ensure robust anomaly management

Whether you require high-level procedural and organizational definitions or detailed action schedules, our services allow operators to achieve effective and sustainable asset management.

In this market of high capital intensity, operators cannot afford to make educated guesses. They must make well-informed decisions. Quickly.
The efforts required for the inspection of an offshore asset—be it a subsea system, a pipeline, a jacket structure or topsides facility—are enormous. It is therefore crucial for operators to maximize the information collected and minimize the time required to do so.

At ROSEN, we offer a wide variety of external and internal inspection solutions for pipelines, flexibles, structures, and pressure equipment. Combining sensitivity with durability and reliability, our in-house developed and manufactured inspection systems deliver accurate and repeatable results—even under the harshest conditions.

Instead of the typical, and limited, spot measurements, or time-consuming detailed pipe-wall mapping, ROSEN offers:

- Electromagnetic Acoustic Technology (EMAT) that enables rapid screening at high sensitivity for both internal and external corrosion in addition to reliably identifying corrosion under supports
- Ultrasonic confirmation by API-570-certified professionals
- Technologies such as long-range UT, thermal imaging, and flexible pipe annulus volume testing
- Verification of repairs to aging structures by our accredited inspectors.

ROSEN’s inline inspection solutions include both free-swimming and tethered ILI tools as well as powerful autonomous crawler systems, all of which are able to carry the latest high-resolution geometry, including magnetic and ultrasonic sensors through a pipeline. These systems are also able to successfully navigate pipelines which present various challenges associated with accessibility, negotiability, and propulsion—including those with multiple diameters, offtakes, inlets, wye pieces, heavy walls, high velocity gas, low flow and low pressure—in order to deliver the high-quality results operators depend on.

We have the experience, competence, and technologies to tackle any inspection challenge.
At ROSEN we know that optimal flow is the single most important prerequisite for efficient pipeline operation. The buildup of debris, wax or liquids can restrict flow, however, if excessive liquids or wax are removed too quickly, the sudden absence of debris can cause the system to trip. In addition, debris and liquids can prevent successful inspections and encourage corrosion damage, limiting the safe operating life. The costs of loss of production, repair, and rehabilitation are substantial, particularly for offshore systems. Therefore, an effective cleaning program is crucial for maintaining pipeline efficiency and integrity.

We combine state-of-the-art flow modeling with decades of practical experience to help operators develop exactly those programs and strategies that are best suited for their specific purposes. Our high-performance equipment can be combined with several technologies that ensure the tool travels at ideal cleaning velocity, even in multi-diameter pipelines or pipelines requiring bidirectional run capacity. This way, operators can be sure that every run delivers excellent results, thereby enabling optimal flow, i.e. maximum throughput.

Our customizable cleaning solutions comprise cup and disc tools that can be fitted with an array of cleaning support elements, including but not limited to, brushes, magnets, descaling and dewaxing equipment, as well as smart geometric gauging and bend detection technologies. Moreover, in a proactive approach to maintenance, we offer cleaning services that collect valuable data regarding the type, volume, or nature of debris removed, and catalogue it for future use. This provides operators with tangible information on the effectiveness of the cleaning program or the feasibility of a subsequent inline inspection.

With the highly volatile prices for oil and gas, it is essential that operators maximize throughput. Safely.
Monitoring

An inspection can only provide knowledge about an asset’s current integrity status. Some findings may be classified as critical, yet not severe enough to merit immediate mitigation. In these cases, precise and reliable monitoring targeted to previously identified defects may be of great benefit to the operator.

Our monitoring solutions utilize state-of-the-art sensor systems in robust packages. Services include:

- Structural natural frequency monitoring to identify changes that may result from damage
- Wall thickness monitoring to identify corrosion issues
- Monitoring of anti-abrasion coatings to identify thickness reductions
- Systems to monitor the buildup of internal deposits in a pipeline

The detailed, real-time information collected by these monitoring systems enables the operator to immediately make critical asset management decisions.

Operators need solutions that provide long-term information on their assets to make integrity management both more effective and more efficient. Targeted. Precise. Reliable.
Unique Assets Require Versatile Solutions

Depending on their type and geographical area of operation, offshore assets have to withstand extreme temperature ranges, high pressures, and/or biological, chemical, and physical impact. Yet, complex logistics and a lack of standardized design make maintenance challenging, which is why sustainable and efficient integrity management is all the more important.

Your asset is unique, and this is why our solutions are versatile. Be it pipeline end manifold (PLEM), flexible riser or topside structure, we have the expertise and equipment to provide you with an AIM solution tailored specifically to your needs.

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*Metal loss, crack, geometry and leak inspection
Training and Qualification
Companies must ensure a proper knowledge transfer between the departing and the succeeding generations. ROSEN supports operators with the training and qualification of their personnel by sharing the expertise we have acquired in decades of serving the offshore oil and gas sector. We provide well-structured learning programs—made by practitioners for practitioners—that focus on the acquisition of different skillsets, subject knowledge, and practical experience. A Qualification Panel made up of industry leaders with strong links to educational institutions certifies our qualifications as meeting the required industry standards.

Digital Solutions
Good decisions require reliable information which in turn relies on good quality data. Data is generated constantly by monitoring and inspection, but important historical data is also available in multiple legacy formats. With a history of generating vast quantities of data and working with assets that may be over 100 years old, we are adept at digitizing, storing, aligning, and manipulating data to make sure that the full value can be realized in risk assessments, engineering evaluations, and management planning. Our cutting-edge integrity management software, developed in collaboration with our customers worldwide, allows for large volumes of data to be processed and evaluated both quickly and efficiently.

Engineering Consultancy
Our specialized, multidisciplinary integrity management team, led by more than 30 world-class principals, has unrivalled expertise. They specialize in fields as diverse as data management, welding, stress analysis, corrosion, fracture mechanics, risk assessment, geographic information systems, safety, coatings, reliability, testing, materials, and inspection. This worldwide team is ready to help with system development, inspection plans, and engineering evaluation to ensure enhanced performance and extended asset life.

Competence is Our Promise to You
More than ever, operators must rely on companies that are competent. With ROSEN, they can count on a partner who is known not only for its capabilities, but also for its dependability throughout the industry.

ROSEN has been your reliable partner in all areas of asset care for almost four decades. Today, with a workforce of more than 3,000 operating in over 120 countries, we complete challenging projects in all sectors of the oil and gas industry.

We operate highly innovative technology and research centers that focus on the collection and development of an extensive pool of knowledge. Combined with our world-class manufacturing competence, this results in the state-of-the-art AIM solutions for which the ROSEN Group is known and respected.

The competence we possess in all components of asset care is what makes us the industry leader we are today, and the right team to turn to for expertise in the offshore arena.