



Case Study **Saipem**

# Asset Tracking in the Oil and Gas Industry

Tagging items like floaters and buoys in addition to the large industrial equipment.



[omni-id.com](https://omni-id.com)



Saipem is organized in three Business Units: Offshore, Onshore and Drilling, with a strong bias towards oil & gas related activities in remote areas and deepwater. Saipem is a leader in the provision of engineering, procurement, project management and construction services with distinctive capabilities in the design and the execution of large scale offshore and onshore projects and technological competencies such as gas monetization and heavy oil exploitation.

### Results

#### Address

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#### Industry

Oil and Gas

### The Challenge:

Saipem transports many types of large industrial equipment around the world. Manually tracking these assets is prohibitively time consuming and costly.

A system was needed to automate the tracking of these assets — one which would perform with the highest levels of safety and accuracy. The asset tracking solution needed to be able to work in the presence of steel, water and withstand temperatures of  $-50^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ .

### Solutions:

ATEX-compliant Omni-ID Max passive UHF RFID tags met all of the system requirements. Omni-ID and ACM-e SRL then worked with Saipem to pilot the asset tagging system across a number of offshore oil drilling bases.

### Results:

Saipem is able to accurately track the location of valuable assets, saving money and improving control. And, more importantly, the remote identification system protects the health and safety of Saipem's operators.

The new system exceeded initial expectations and delivered additional benefits. Because the tags work on metal and plastic, Saipem is able to tag items like floaters and buoys in addition to the large industrial equipment. Operators are also able to program and attach new ID tags on the spot. Tagging large pipe stacks, another key component of drilling projects, allows Saipem to monitor their use from production through completion of pipe-laying operations.

**Summary:**

Omni-ID Max RFID tags have a read range of up to 12 meters in the US, and up to 8 meters in Europe, even in environments full of metal and salt water – such as an offshore oil rig.

The oil and gas industry has thousands of large assets made of steel that must be tracked at locations around the world. Control of equipment is essential for safety purposes and is required for insurance certifications. Omni-ID Max passive UHF RFID tags were the perfect solution for Saipem Corporation, helping them to increase safety for their personnel and also track inventory efficiently.

These two innovative companies, Omni-ID and Saipem, with support from integrator ACM-e SRL, have partnered to bring RFID to the offshore oil industry.

**The Challenge:**

International oil and gas contracting services requires investment in many types of large industrial equipment such as vessels, cranes, slings and shackles, drilling rigs, drill pipes, and more. This equipment is transported and used in locations around the world, and keeping track of it manually is prohibitively time-consuming. In this industry, time is money, and locating equipment quickly is critical for a project's success. Saipem's first challenge was to automate location tracking of all its assets.

The second challenge for Saipem was finding a way to track assets that provided the highest level of safety for its employees. Huge oil pipes stacked in a facility, for example, present a safety hazard if personnel have to climb onto the equipment to find an identification tag. For this reason, Saipem was interested in the use of RFID, which can be read at distances of 2 meters or more without direct line of sight between the tag and the reader. Passive RFID was selected over active RFID to eliminate the ongoing need for battery replacement.

While there are many different kinds of assets in Saipem's asset base, they have one thing in common: steel. In addition, offshore drilling locations are dominated by another source of RFID interference: large quantities of salt water. Saipem's third challenge was finding a passive RFID solution that worked successfully in an environment with so much metal and liquid.

**The Solution:****Designed and Supplied by Omni-ID**

ATEX-compliant Omni-ID Max™ passive UHF RFID tags provided a solution for Saipem which met all of their requirements.

With a standard read range of 8 meters or more and a 2m read range with hand palm PC readers, these tags could be read successfully even in offshore applications. Omni-ID and ACM-e then worked with Saipem to install the asset tagging system across a number of bases as a pilot. Using RFID in offshore applications is a new frontier, and Omni-ID has partnered with Saipem to understand the needs and challenges of this application and help to create a successful RFID system. The new system has exceeded initial expectations, delivering the expected benefits and more.

**“Using RFID in offshore applications is a new frontier, and Omni-ID has partnered with Saipem to understand the needs and challenges of this application”**



A number of trolley bases stacked on top of each other.

### The Benefits

With this system, Saipem can accurately track the location of valuable assets, saving time and money and also improving control of certificates for better insurance reporting purposes. Perhaps more importantly, Saipem's asset tracking system protects the health and safety of operators with remote identification of assets.

Omni-ID RFID tags offer Saipem numerous advantages:

- Omni-ID Max™ tags work on metal, plastic, or a combination of the two. Saipem tags items like floaters and buoys in addition to the vessels, cranes, pipes, and drilling equipment originally planned. Using one tag for all equipment types saves the company money and time.
- When a piece of equipment is found without a tag, operators can easily find the asset in the database, program a new tag with the correct ID number, and attach it to the asset. Other systems would have required waiting for a new ID tag to be issued, and welding equipment to attach the tag. Omni-ID tags are a much easier solution for tag attachment.
- Omni-ID tags have tested successfully in challenging environmental conditions. Saipem's bases around the globe can vary from  $-60^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ , and tags must work in all these conditions.
- Omni-ID tags have successfully been tested on large pipe stacks, a key component of future drilling projects, and can be used to monitor pipes using RFID from production until

### Next Steps

By using Omni-ID tags, Saipem maintains its lead in technology and efficiency in the oil and gas industry. Saipem plans to expand its RFID system to all its locations across the globe over the next few years, and is also working with Omni-ID to test the newly released Omni-ID Ultra™ tag, which has a read distance of up to 35 meters and can provide even greater safety and efficiency benefits for Saipem.

### About Omni-ID

Omni-ID is an industry leader in passive UHF RFID tags. Using technology developed by researchers in the defense industry, Omni-ID offers a patented line of RFID tags which work in the presence of metal and water, materials which typically interfere with RFID operation. Omni-ID continues to lead innovation in the RFID industry.

### About ACM-E SRL

Based in Milan, ACM-e operates in all parts of Italy as technical-engineering and managerial advisor in the field of maintenance engineering, logistics and other operations processes of business. ACM-e develops innovative technological solutions, in its own areas of expertise, focusing on plant and equipment, infrastructure of large Italian and international companies. Furthermore, ACM-e as system integrator proposes and carries out technological Automatic Data Collection (ADC) solutions.



The tags are so strong that if pulled it is the metal fixing on the trolley that will often break off before the tag breaks (the average tensile strength of the tags is 120kg+).



#### Designed



High UV tolerance



Label should adopt as little dirt as possible (slippery/low moisture absorption)



Weight below 23 grams



Label pull strength above 15kg



If the label is removed, it should be visibly damaged and not be reusable



RFID performance should be the same or better as with the red tag



#### Tested



Water resistance (non emersion: exposure to rain and watering of plants)



Resistant to solvent and chemicals used in agriculture grower and retail operation (like chloring solutions)



Storing temperatures from  $-30$  to  $+70$ , operating temperatures from  $-10$  to  $+60$



Material tested for the automotive industry



Visit [www.omni-id.com](http://www.omni-id.com) to learn more or email [sales@omni-id.com](mailto:sales@omni-id.com) for all product or technology inquiries and we will be pleased to get in touch.

Omni-ID is the leading supplier of passive, low-profile UHF RFID solutions. Through our patented technology, Omni-ID "cracked the code" to overcome the problems traditionally associated with RFID, enabling a broad range of new applications that improve accuracy and efficiency in asset tracking, supply chain management and work-in-process. Our family of versatile RFID tags works reliably in the harshest environments, including on, off, and near metal and liquids and excels in solving tracking and identification challenges with unprecedented accuracy. With offices in the USA, UK, Asia and India backed up by a purpose-built manufacturing facility in China, our mission is to drive the widespread adoption of RFID and wider IoT technologies as the optimal tracking and identification devices.