

Saipem attaches Omni-ID EPC Gen 2 passive tags to cranes, drilling rigs and thousands of other items, to improve safety and reduce wastage and delays.

By Claire Swedberg

Mar. 2, 2010—[Saipem](#), an Italian engineering and construction company for subsea oil and gas production, has been tracking its large equipment on production sites. The system went live in November 2009, with the intention of tracking 20,000 items, including offshore vessels (used to access oil drilling site), as well as cranes, drilling rigs, steel pipe, slings, shackles and buoys. Approximately 1,000 items have been tagged to date.

Saipem expects the RFID system to reduce the practice of acquiring excess inventory due to items ending up missing. The company also expects the system will decrease the amount of waste it generates. Without an RFID-based tracking system, assets often had to be scrapped, because it was impossible to trace how old they were, or when they had been inspected and certified. "In addition," says Gianni Franzoni, Saipem's operation department logistics coordinator, "the system will provide employees with easy access to what material is on hand, and reduce errors" related to misunderstandings regarding which equipment is actually delivered to a drill site.

Saipem uses these assets at offshore sites around the world, in a harsh environment that contains saltwater and experiences vast temperature fluctuations. Such equipment was typically tracked manually, via pen and paper, and required phone calls to learn what had arrived or been shipped, as well as scrambling onto piles of pipes and other equipment to ascertain serial numbers. If a piece of equipment was missing, Franzoni says, the drilling operations could be delayed.

Saipem began seeking a solution to reduce labor hours spent searching for missing items, as well as to decrease the incidence of delays caused by equipment not arriving at the correct location at the proper time, or going missing entirely. The other challenge Saipem wanted to address was safety. The company wanted to find a system that would eliminate the need for field operators to climb onto equipment in order to visually locate a serial number on an item, which they would then have to manually record.

The firm chose an RFID solution that would enable its management to know the location of equipment on offshore sites throughout the world, as well as allow employees to safely identify equipment. The solution, installed by Milan systems integrator [ACM-e](#), includes passive ultrahigh-frequency (UHF) EPC Gen 2 tags provided by [Omni-ID](#), which can be read from a distance of 8 meters (26 feet) or more. The tags needed to be tough, so that they could not only be read in the presence of steel and water, but also withstand temperatures ranging from -60 degrees to +50 degrees Celsius (-76 degrees to 122 degrees Fahrenheit). Therefore, the tags were enclosed in an impact- and crush-resistant proprietary material specifically chosen for this application, says Chris Hood, Omni-ID's channel sales manager.

Saipem fastened Omni-ID Max tags to its own assets, first tagging its steel items, then placing tags on

floaters and buoys. When a piece of equipment is found without a tag, operators can program a new one, inputting data regarding the item to be linked to the tag's unique ID number—such as its serial number, description and manufacturer—and then bolting or welding it to the asset. The data related to that item is stored in Saipem's own proprietary logistics support software, known as New Asset Material Automatic Searching Technical Equipment (NAMASTE).

Saipem's staff uses a [Motorola](#) handheld computer with a built-in RFID interrogator around the work site, to locate missing items and determine which items the company has on site, says Mauro Bianchi, ACM-e's director. Using the handhelds, workers are now able to identify items without climbing onto piles of equipment, or the vehicles onto which they are loaded.

When a piece of equipment is needed, it is first requested from its storage location (based on inventory data maintained in the NAMASTE software), where its tag is scanned with a handheld reader to create a record of its shipment. When that item reaches the shore of the drilling site, the asset is again scanned to produce a record of which items have been sent to the offshore site. Once an asset is returned to storage, that same process is carried out, with the tags being scanned as they reach shore, and once more when they are placed in one of Saipem's storage facilities. The Motorola handheld computer can store the read data, which is then uploaded to a PC at the end of a day via a USB connection.

Saipem's employees can log into the NAMASTE system to view what has been shipped out of storage or to the offshore site, and when. The system can also alert users if a requested item has not been shipped, or if a piece of equipment destined for one location was received at a different one.

"Our greatest challenge," Franzoni, "was the awareness of inventory levels, number of assets lost and found—tracking these huge assets through logistics process."

The tags are also scanned when assets are certified by an inspector as safe for use, and recertified once they leave the drill site and are again inspected. In this way, the company's management knows when each piece of equipment was last certified, and can provide that record for insurance purposes, if necessary.

"Our expectation was to find a technology that would provide our valued employees with a safer job environment," Franzoni states, "and allow them to do their jobs faster and more effectively," but the system is also intended to provide Saipem with greater efficiency and inventory accuracy that he says will help the company "remain a leader in the offshore oil industry."

"We have loaded more than 1,000 items into the NAMASTE program already," Franzoni says, "and are actively tracking that inventory. This RFID solution, using Omni-ID tags, will improve safety and security, and help our valued employees better perform their jobs in a dangerous environment."

And that, he says, "is the best ROI Saipem can have."

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In the future, Saipem plans to expand its use of RFID tags to include drilling equipment and the tracking of underwater oil steel pipelines, by installing Omni-ID tags into grout (a concrete material covering the pipe). "Even further down the line," he says, "we would like to see all inventory tagged with RFID as it leaves the manufacturer, such as drilling pipes, gas bottles, anchors, hydraulic hammers, etc."