

# Safety for Statoil

## with the new reference system RADius

Statoil has implemented a new and improved reference system for dynamic positioning (DP) for support vessels operating the company's installations on the Norwegian Continental Shelf.

The new reference system, RADius has been developed by KONGSBERG. The system consists of transponders that are installed as targets at installations and interrogators carried on the supply vessel, for example. The RADius system measures directions and distance to the transponders, continuously providing information about the vessel's position relative to the target.

Chief Engineer Ole Steinar Andersen at Statoil Maritime Operations explains that the new technology will increase safety during loading and unloading operations on the field. Further, RADius helps satisfy the IMO requirements for three independent reference systems for DP classed vessels acting within a safety zone of 500 metres.

Safety is obviously a key issue, and one that RADius can contribute to: "Operating alongside our installations will be safer with DP technology on the vessels," says Andersen. "This is based on feedback from the crane operators. We feel that this reference (RADius) will ensure that we have a stable system under any and all weather conditions, and it will not be affected by signal shadowing from our tallest platforms."

DP-classed vessels mainly use two global positioning systems (GPS). One gives their absolute position and the other gives their position relative to a target. In this context, safety is enhanced towards moving/floatable installations as the vessel moves along with the installation, i.e. the weather vane principle. In addition to GPS, there are systems based on laser and microwave technology.

One challenge that can arise during operations on the north side of installations is the shadowing of GPS signals. This underlines the importance of using complementary systems and redundancy to ensure safe operations. The technology, which involves radar technology without any moving parts, allows RADius to operate in any weather conditions and be unaffected by the state of the sea.

Importantly, the users of the new system have found it easy to operate and an advantage in terms of safety and efficiency. "The crew of the vessel has no problem operating RADius as one of their reference systems," comments Andersen.

KONGSBERG, Statoil and the shipowners have carried out a year-long test on *Gullfaks A* and *Heidrun* and also at the floating production vessel *Asgard A* on Haltenbanken.

All tests have been executed by the supply vessels *Viking Energy* and *Skandi Sotra*. As the RADius transponders are ATEX certified, they can also be deployed in hazardous areas.

"The trial was performed by KONGSBERG in cooperation with the vessel crew. One challenge was to place transponders on the installations because the original system did not meet the ATEX requirements, but we managed to have them placed as a temporary installation," recounts Andersen.

Statoil has entered into a framework agreement with KONGSBERG to deploy transponders on offshore installations, and requires DP classed vessels operating on Statoil installations to use RADius as one of their reference systems.

"Our job during the testing period was to liaise between the shipowner and the vessel crew. We had a good dialogue with both parties, and they were satisfied with the system's functionality and performance. From our point of view, we realised that we could enhance operational safety close to installations using this system," explains Andersen.

"Statoil will install the system on all their installations. RADius is a reference system that proves stability under all conditions, and it is also useful for any vessel operating close to field installations," concludes Andersen. ■

### FACTS

RADius is a relative positioning system developed for operation in harsh and demanding environments utilising radar technology. As a stand-alone system, or interfaced with dynamic positioning or integrated bridge systems, RADius provides an extremely accurate and responsive aid to loading and unloading procedures for operations in all weather conditions. Benefits include:

- No moving parts
- Complementary to existing GPS Positioning reference system
- Multiple users
- Multiple transponder capability
- Operates in license free area

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Chief Engineer Ole Steinar Andersen at Statoil Maritime Operations