

Fugro supports your offshore work with a global network of reference stations, monitoring signals from GNSS (GPS, GLONASS, Beidou and Galileo) satellites and generating corrections to significantly improve the accuracy of unaugmented GNSS signals. Correction messages are transmitted to vessels via a robust, fault-tolerant broadcast infrastructure, providing precise, reliable, real-time satellite positioning that is accurate worldwide, to just a few centimetres.

• APPLICATIONS

A 'precise position' is the fundamental parameter for your survey and engineering operations at sea. Such operations rely on a global infrastructure and expertise to deliver high accuracy positioning, globally, at any point in time.

- **3D/4D Seismic** – We regard system redundancy as a key factor in precise positioning for 3D/4D seismic operations. Our DGNSS systems provide two fully independent precise positioning solutions for your vessel. In addition our remote tracking system, StarTrack, provides independent and innovative remote tracking for gun floats and tailbuoys.
- **Survey/Hydrographic Operations** – With precise positions as the basis for vessel positioning, we can also supply software dedicated to timing, controlling and logging bathymetric and other survey sensors.
- **Pipelay and Cable Lay** – Offshore pipelay and cable lay operations require advanced modelling of the product being installed. As a market leader, we have developed advanced software utilising the industry standard Orcina model to allow precise monitoring of the product during deployment. Combined with precise positioning, this ensures a safe and efficient operation.
- **Dynamic Positioning (DP)** – Precise GNSS is an essential position input source for DP operations within the offshore oil and gas industry. Exploration in new areas and increased operation in deeper waters together with more advanced DP2/DP3 systems increases the demand for a high-class DGNSS service.

Our superior DGNSS service for DP vessels provides the vessel's DP desk with not

only the most accurate positioning service available, but also the most robust, stable and redundant.

- **Rig Moves** – Rig moves require remote tug tracking in addition to precise positioning. Our integrated positioning package comprises precise positioning, remote tug tracking and advanced software to control all aspects of the anchor positioning and catenary chain monitoring operations.
- **Renewable Energy** – We understand what drives and constrains your business, and we work alongside you to support each stage of your operation, from resource exploration and infrastructure development to energy production and transportation. We supply the data and services that enable the safe, reliable and efficient design, construction and maintenance of global facilities.
- **Vessel Berthing and Manoeuvring** – The Marinestar® Manoeuvring System (MMS) can be used for position in ECDIS, and assist vessels with safe and efficient berthing supported by safety alarms managing risk.
- **Energy Efficiency** - The Marinestar® Manoeuvring System (MMS) is based on our High Performance GNSS service to enhance fuel efficiency by dynamic trim measurements and precise heading information.