Improved DGPS Suite for Offshore Survey

Fugro is to introduce the first phase of a completely new, Next Generation (NG), suite of precise-positioning software Starfix.NG starting in 2011. This package is building upon the expertise and quality that is provided by the existing software. It will see the implementation of several enhancements that are the result of the company's R&D efforts.

Development centres are located in United States, the United Kingdom, the Netherlands, India and Australia. The software is developed under ISO 9001 and is subjected to strict testing and release procedures. An early release of the software will commence its offshore endurance testing mid-2010.

The software will cater for all the survey activities Fugro conducts world wide, and will be completely modular to ensure that simple jobs remain simple, while allowing for the addition of ‘expert', modules to support more complex work.

Modern ways to visualise data, and the environment, provide an extremely powerful tool providing additional insight in otherwise complex processes and hardware configurations. Therefore 3D visualisation and the associated computations will be fully supported in the new Starfix.NG software. All maps and displays will be presented in 3D and will equally support relatively simple plan views as complex immersive 3D environments.

Sitting alongside 3D is accuracy, also referred to as ‘variance' or ‘Total Propagated Error' (TPE), Starfix.NG has a variance engine embedded throughout all computations from simple trigonometry to complex geodetics calculations and Kalman filters. All error estimates are rigorously propagated throughout the system resulting in an accurate total propagated error for positions, observations and results. As a minimum, the TPE values are compared with the limits as defined by the IHO SP44 standards to permit impartial decisions on data quality.

GNSS technologies have revolutionised surface positioning over the past decade, and sub-decimetre accuracies in the horizontal plane, are commonplace. More recently it has become possible to extend these accuracies to the sub surface world by means of Inertial Navigation Systems (INS). These methods are computationally complex but carry the promise of improving the efficiency of many subsea operations and will be fully supported by Starfix.NG.

Standard work instructions are embedded into the application. For every sensor or system that is added to a project, the work instructions for the installation, calibration and verification become immediately available to the people that operate the system. An associated intelligent ‘tick' list ensures that important tasks are not omitted and provides verification that all actions required for the project are completed in a satisfactory manner. An automated system will further, in real time, analyse and compare the various data streams available in the system to provide warnings to the operator whenever a contradiction or error condition is identified.

Fugro has adopted the EPSG initiative from Shell, BP and others, a standard that provides a transparent and robust means of controlling geodetic specifications and geographic integrity. Fugro has also adopted the S57 standards for the utilisation and display of navigational charts.

In addition to a Windows-based user interface, a rich web interface is made available. This permits access to data from the system via web browsers across a LAN or WiFi. A wealth of data is available via web pages and web services even to the extent that data can be readily accessed on mobile devices such as iPhones and tablet computers.

By embracing new technologies, standards and an open architecture, Fugro continues to lead the offshore survey industry into the next decade.

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