

# MARINE STREAMER CONTROL

## NEW SEISMIC STREAMER MODULES REDUCE COSTLY INFILL

Technological advancement is a key to continuing success. To maintain improvements in operational efficiency and data quality, Fugro-Geoteam is investing in new steerable steamers throughout its 3D seismic survey fleet.

*“Steerable DigiFIN modules improve lateral and depth control of our seismic streamers, when used in conjunction with conventional levelling devices, or ‘birds’, fitted with compasses,” explained Hans Meyer, President of Fugro-Geoteam AS.*



DigiFIN in operation

The technology has numerous advantages. Unlike ‘omni-directional’ steering devices, the DigiFIN approach allows a homogenous set of lateral forces to be applied throughout the deployed streamer array.

### Promising Results from Trials

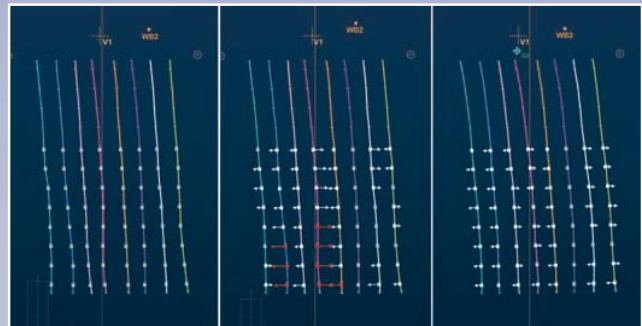
An eight month evaluation of the DigiFIN Lateral Control System began in December 2007, on the *Geo Atlantic* off the coast of Western Australia. The trials were performed to test functionality and reliability, to gain operational experience with the equipment and to understand the system’s noise and stability characteristics. The exercise was deemed a huge success.



DigiFIN deployment

Very few technical problems were experienced, even though most tests were scheduled during streamer deployment and on line changes. All trials successfully demonstrated stable lateral control of the streamer and streamer tail, despite strong currents in the work area. There was no adverse impact on depth stability and noise levels recorded in the streamer were unaffected by the introduction of DigiFIN.

One of the test reports records, *“DigiFIN proved its usefulness in both deployment and in production. The deployment spread was widened for faster and safer deployment operations. The ability to achieve equidistant separation of the streamers removed the so-called ‘trouser effect’ caused by propeller wash. Streamer deployment angles were adjusted online to help provide optimal coverage. As a result infill is expected to be minimal - less than ten per cent.”*



**No control**  
Trouser (mid spread flaring) present due to propeller wake

**DigiFIN even separation**  
Trouser adjustment to improve far trace coverage

**Spread stabilised in 5 min**  
Trouser eliminated and probability of infill reduced

Based on these promising results Fugro invested in a full spread of DigiFIN equipment for *Geo Atlantic* and implemented the system on board *Geo Celtic*. Both vessels subsequently completed two projects each.

### Great Client Interest

*“The DigiFIN system was used successfully on board Geo Celtic for Statoil-Hydro’s entire summer 2008 acquisition programme in the North Sea and Barents Sea,” reported Ronny Bøhn, Vice-President – EAME Region with Fugro-Geoteam in Oslo. “The client was very happy with the results, especially with the reduced infill.”*

DigiFIN was also trialed as a way to improve 4D repeatability during a survey over the structurally complex Heidrun Field. The survey objectives involved tests on the steering capability of a seismic spread incorporating both DigiFIN equipped streamers and Statoil-Hydro’s SOS technique for source control. The programme compared the geophysical response of the streamers with results from previous surveys in the area.

*“Preliminary results look very encouraging,” commented Ronny Bøhn. “The DigiFIN system contributed greatly to streamer control and to efficient deployment of the streamers. Overall, source and receiver repeatability appeared very good.”*

