

NEW RECORDERS OPTIMIZE LAND SEISMIC OPERATIONS

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Recorders are a key contributor to land seismic crew efficiency, as they should enable smooth and continuous operations, while adapting easily to different field configurations, channel count and environments. To comply with these requirements, a new recording system was developed, based on a nodal architecture. This architecture, called X-Tech (XT), enables the combination on a given active spread of cabled channels connected to the recorder central unit, autonomous cabled channels, and wireless Sercel UNITE channels. The recorder can consequently be operated from full autonomous to full real-time mode.

Field equipment has been designed to ease crew inventory, spare part management and line

configuration: line and transverse management units are now ensured by a single device, the concentrator, which is equipped with internal memory. In addition, the land cable, 10% lighter and 50% stronger than the previous generation's lightest cables, combined with the need for less field units and batteries, directly improves the operational efficiency of the seismic crews. A new digital sensor, equipped with next generation QuietSeis® MEMS accelerometer, is also available. With a noise floor as low as 15ng/√Hz and below the ambient noise in any part of the world, it can record seismic signals three times lower than the previous generation.

Reducing or even eliminating the downtime induced by line failure is a key concern for

seismic crews. This is now possible with the multiple levels of redundancies (data transfer, GPS synchronization and power) of the X-Tech nodal architecture, combined with the recorder autonomous capability permitted by concentrator's internal memory. This has two consequences. Firstly, line cuts won't affect production, as the central unit and field components automatically switch to alternative routing to communicate. If the line cuts are numerous, it will trigger the isolated channels in autonomous mode, enabling continuous production. Secondly, line troubleshooting can be performed in an opportunistic manner: trouble shooters do not need to rush to respond to line faults.

Versatile and tolerant to line failure, the 508XT offers the most productive architecture for all environments, from arctic to hot desert, through forests, farmland and cities. Fit for any high productivity vibroseis method, it also enables parallel tasks, such as non-active spread testing during production. The system has been designed to answer the need of the smallest to the biggest crews, and proven itself in the field on numerous crews having various field conditions and configurations, from Siberian 2D with digital sensors to Saudi Arabia 40,000 channel mega 3D crews.

