Wired Pipe Technology is Here!

Wired pipe telemetry is now being put to use in the oil field, about 12 years after the original concept was initiated by Novatek and developed in partnership with Grant Prideco.

Original prototype development and field testing were funded in part by the Department of Energy’s National Energy Technology Laboratory (NETL), in an effort to accelerate commercialization of this technology. Since then, National Oilfield Varco acquired Grant Prideco and added the IntelliServ Broadband Network™ high-speed telemetry drill pipe to its portfolio of oil field technologies.

According to Roy Long, a Technology Manager at NETL, wired pipe broadband telemetry is a good example of a technology that would not have made it this quickly from concept development to commercialization without the support of DOE.

Wired pipe telemetry can transmit data from downhole tools to the surface more quickly and more reliably than conventional mud pulse telemetry. In fact, data transfer rates are about 5 orders of magnitude faster with wired pipe telemetry. This allows evaluation of the down-hole drilling environment, accurate characterization of the formation being drilled, and precise navigation of the well bore to targeted reservoir intervals—all in real time. The result is reduced drilling time, more accurate well placement, and corresponding savings in drilling costs.

The IntelliServ™ system utilizes a milli-hop telemetry system, where electrical conductors inside neighboring pipe segments are coupled electrically by a transmitter that sends data across each threaded drill pipe connection to the next segment. Electrical coupling takes place automatically as each tool joint is made up, and no special handling procedures are needed on the rig floor (See photo).

Successful utilization of the technology was highlighted in March 2009, at the Society of Petroleum Engineers and International Association of Drilling Contractors Conference held in Amsterdam. Chris McCartney of Occidental Petroleum said that the IntelliServ Broadband Network utilized in Occidental’s Elk Hills field in California worked efficiently and led to a 10% reduction in drilling time. A representative of National Oilwell Varco IntelliServ explained that the technology allows data acquisition from multiple locations and multiple tools along the drill string, as well as real-time surface control over down-hole instruments.

The IntelliServ Broadband Network™ has been deployed successfully in North America, South America, the Far East, and Europe in onshore and offshore applications and will be the topic of several presentations at the upcoming June, 2009 World Drilling Conference in Dublin, Ireland.