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How Real Time Wireless Systems Can Ease Operational Logistics Whilst Avoiding Data Vulnerability and Out of Specification Acquisition

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ABSTRACT

During the second half of 2014 a 3D seismic survey was conducted in the Kurdish Autonomous Region of Iraq using a real time capable wireless seismic acquisition system. The survey proved that it is possible to use a
real time wireless system to acquire data from many thousands of channels cable free without compromising data security or data quality whilst enjoying the eased logistics and enhanced productivity that characterize cable-less acquisition techniques.
This paper will present a case study on how the real time wireless system improved operational logistics through eased movement of the equipment, with fewer personnel, vehicles and consequent reduction in camp size and number of channels on the crew. It will also show how these improvements allowed a high-density wide-azimuth survey to be efficiently acquired to enable reservoir fracture characterization be done in subsequent processing. Results from the initial processing of the data will be presented showing the high quality of the acquired data.
The survey took place through a heavily cultivated area, the local farmers and the seismic contractor were able to work together without system cables impeding agricultural operations.
As data were transferred in real time, theft of equipment, whilst inconvenient, was not catastrophic in terms of data coverage. The continuous QC and noise monitoring of the system gave the contractor complete command and control over the spread, enabling the contractor to maximize productivity by continue to acquire data to the permitted limit of contract specifications and also the ability to close down acquisition owing to interference associated with warfare (bombing and artillery raids out of earshot), earthquakes and background seismicity, weather and cultural activities. The cable free real time radio network avoided downtime due to replacing cut and damaged cables and re-shooting interrupted shots, as the data safe feature of the system ensured that all data were recorded to the end of the record and could be collected immediately the radio network was restored.