

GPS CORS Technology Implementation in the Oil Industry- Benefits and Challenges

Mpaka Erekosima and Benjamin Onoriode (Nigeria)

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SUMMARY

Continuously Operating Reference Stations (CORS) use the Global Positioning System (GPS) technology to provide precise spatial positioning, data harmonization, and enables geodetic data integrity assurance with real-time data streaming and management in a network mode with Leica Spider software to extend the data coverage and enables real-time field crew monitoring.

Usually, most survey activities in Nigeria are executed using conventional methods which require extensive control pillar search and in-situ checks in often difficult terrains with significant costs and serious health, safety, security and environment (HSSE) exposures. The survey is also prone to coordinate inconsistencies between fields due to discrepancies in control origins. Hence, a compelling reason to establish CORS technology to address these issues. Leveraging the GPS technology, sites were selected, installed with GPS system and configured to acquire process and transmit differential corrections on a continuous basis to reference survey projects. This technology has been used in the oil and gas industry to establish primary (geodetic) control pillars, as-built surveys and large-scale seismic acquisition project with significant cost savings and reduced HSSE exposure. The deployment has enabled geodetic data integrity, data harmonization, reduced turnaround time, and HSSE exposure which have eased project delivery within the difficult terrain of the Niger Delta. The implementation of GPS CORS technology obviously is a game changer in survey service delivery within the oil and gas industry, and should be extended to developing Land information system speedily throughout Nigeria and cost effective, quick and accurate update of Nigeria utility infrastructure.