

### Background

During wellhead system installation, manual techniques are commonly employed to verify correct placement of each component. Drawing inferences by using space-outs and weight indications, inspecting marks, and opening outlets to check marks on internal components increases likelihood of errors and HSE risk.

An operator decided to try Cameron's software-based solution that provides real-time feedback for equipment positioning and can be used on any wellhead. The nonintrusive, modular package comprises a human machine interface (HMI) device or laptop with automated workflows, position sensors, and a data transmission unit. The sensors were placed on the wellhead and communicated with the software, which analyzed the equipment position and sent binary signals (green or red) to the HMI outside the hazardous zone. These signals indicated whether the hanger or packoff assembly was successfully landed, eliminating NPT due to misalignment, debris, or both.

### Technologies

- Wellhead installation digital position sensing
- SOLIDrill\* modular compact wellhead system

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# Industry-First Digital Position Sensing Streamlines Wellhead Installation, Middle East

## Real-time positive confirmation of properly landed hangers and packoffs on two wells avoids subjective judgments and NPT and minimizes risk



*During casing hanger installation, once it was confirmed that the equipment had landed out properly in the wellhead, the sensors were left in place to ensure that no lift occurred during cementing. Subsequently, they were moved to monitor the packoff assembly installation. Machine learning enhances the reliability and accuracy of the landing indication. The operator was able to observe the status of the ongoing installation and proceed with confidence once the green lights confirmed success. This solution removes HSE risks resulting from personnel exposure to the line of fire.*