

## **The Complexity of Drilling Digitalization, a Display of Potential Pitfalls During Implementation**

A. Lettner, G. Thonhauser  
Montanuniversität Leoben, Austria

### **Abstract**

In modern society, digitalization is the key to a company's survival. Many oil and gas companies are currently implementing digitalization initiatives, but struggle to leverage the full potential of the technology. This paper presents potential pitfalls during the implementation of such initiatives and introduces a recommendation for intelligent decision making.

A process chain analysis from initial planning to the final decision making is carried out to highlight different aspects of digitalization. The investigation includes workspace design, the sensor placement, and calibration, up to the data transmission and data quality. For specific steps along the process chain, individual use cases are introduced that support the need for a holistic approach in such complex systems.

The presented cases show that shifting towards a more digital environment requires a holistic approach in order to create digital value from all the information which is gathered. Intelligent decision making is not about replacing dysfunctioning processes and out of date methods with digital tools, but to use the technology smartly and adequately to have an impact.

The approach looks at the problem from an overall standpoint and addresses multiple aspects. The benefit of this approach is that it can be applied to any process that is instrumented with sensors and where decisions are partially based on the gathered data from the sensor readings.