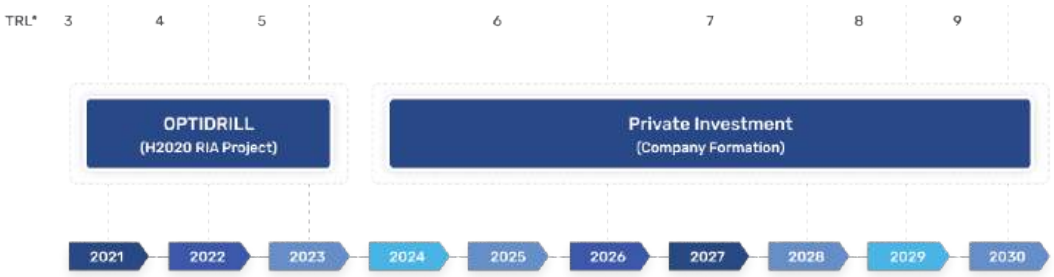
Roadmap

Technology Readiness Level (TRL)



OptiDrill Project Consortium

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Optimisation of Geothermal Drilling Operation with Machine Learning

OptiDrill project is funded by the European Union's Horizon 2020 Research and Innovation Action under grant agreement No. 101006964

> We aim to develop a drilling advisory system utilising novel sensor and machine learning methods to predict ROP, lithology, drilling problems, well completion and enhancement and finally to unite these methods under one system to enable drilling process optimisation and intelligent decision making

Objectives

The overall objective is to develop a drilling advisory system utilising novel sensor and machine learning methods to predict ROP, lithology, drilling problems, well completion and enhancement and finally to unite those methods under one system to enable drilling process optimisation and intelligent decision making.

- Digitalise the mannual drilling data and text based reports through NPL deep learning methods
- Intrumentalise the drilling process through the Implementation of drill rig and BHA compatible sensor strings
- Implement novel system identification methods in the sensor and monitoring system
- Employ the combination of machine learning and novel deep learning in drilling, well completion and enhancement modelling, performance prediction and optimisation
- Federate machine learning scheme in combination with self-learning machine learning algorithms
- Predict and trigger detection of drilling problems through data-driven statistical and machine learning methods
- Understand the real-time lithology prediction of the formation

Work Packages Structure