Hydraulics modelling for drilling automation

Fact Sheet

Project Information

<table>
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<th>HYDRA</th>
<th>Funded under H2020-EU.1.3.1.</th>
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<tr>
<td>Grant agreement ID: 675731</td>
<td>Overall budget € 773 624,16</td>
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<td>Project website</td>
<td>EU contribution € 773 624,16</td>
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<td>Status</td>
<td>Coordinated by</td>
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<td>Closed project</td>
<td>TECHNISCHE UNIVERSITEIT EINDHOVEN</td>
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<td>Start date</td>
<td>End date</td>
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<tr>
<td>1 March 2016</td>
<td>29 February 2020</td>
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<td>Netherlands</td>
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Objective

Societal uses for the drilling of deep wells are abundant and have enormous impact on global economies; examples include the exploration of minerals, geothermal energy, oil and gas. The future sustainable harvesting of these resources requires the exploitation of difficult-to-access, unconventional reserves and is threatened by concerns on the environmental safety and high cost of drilling operations. To overcome these threats, there are strong needs for advanced tools for virtual drilling scenario testing and drilling automation and for multidisciplinary employees with adequate technical and transferable skills.

The HYDRA EID research and training program addresses both needs by founding an intersectoral doctoral school. The consortium represents top-level expertise in all scientific and engineering disciplines needed to take on the main challenges of HYDRA: multiphase flow dynamics, model reduction, control and mathematics.
Moreover, the consortium houses expertise ranging from academic research & training (TU/e, MINES) and industrial R&D (Kelda) to industrial practice and training (MH Wirth, Well Academy), therewith offering a broad spectrum of training.

The scientific objective of HYDRA is to develop a framework for multi-phase hydraulic modeling and model complexity reduction for drilling operations, delivered in software directly usable in industry. The resulting models uniquely combine high predictive capacity and low complexity enabling their usage in both virtual drilling scenario testing and drilling automation. The main training objective is to launch 3 doctoral students into future leading scientific positions with an intersectoral network to support them throughout their careers.

The envisioned results form the necessary basis for revolutionary advances in the (environmental) safety and cost-effectiveness of resource exploration in Europe and beyond and will provide the human capital base for sustaining such efforts beyond this program’s lifetime.

Field of science

/social sciences/sociology/industrial relations/automation
/engineering and technology/environmental engineering/energy and fuels/renewable energy/geothermal energy

Programme(s)

Topic(s)

Call for proposal

H2020-MSCA-ITN-2015

Funding Scheme

MSCA-ITN-EID - European Industrial Doctorates

Coordinator

TECHNISCHE UNIVERSITEIT EINDHOVEN

Address

Groene Loper 3

Activity type

Higher or Secondary

EU contribution

€ 510 748,56
Participants (2)

**KELDA DRILLING CONTROLS AS**
Norway

EU contribution
€ 0

Address
Hydrovegen 6
3933 Porsgrunn

Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)

Contact the organisation

**ECOLE NATIONALE SUPERIEURE DES MINES DE PARIS**
France

EU contribution
€ 262 875,60

Address
Boulevard Saint Michel 60
75272 Paris

Activity type
Higher or Secondary Education Establishments

Contact the organisation

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