

# Making technology work for deep sea exploration and exploitation

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Konsortium Deutsche Meeresforschung

# Message

- ☞ If we want to tackle the issue of deep-sea resources at the European level, then we need to develop concrete projects that:
- reflect the sustainable development of the oceans as the grand societal challenge that they are, and
  - are attractive to universities, research institutions and industry.



# Marine technologies are becoming more important ...

The  
Economist

Exploring the oceans

## 20,000 colleagues under the sea

Fleets of robot submarines will change oceanography

Jun 9th 2012 | from the print edition

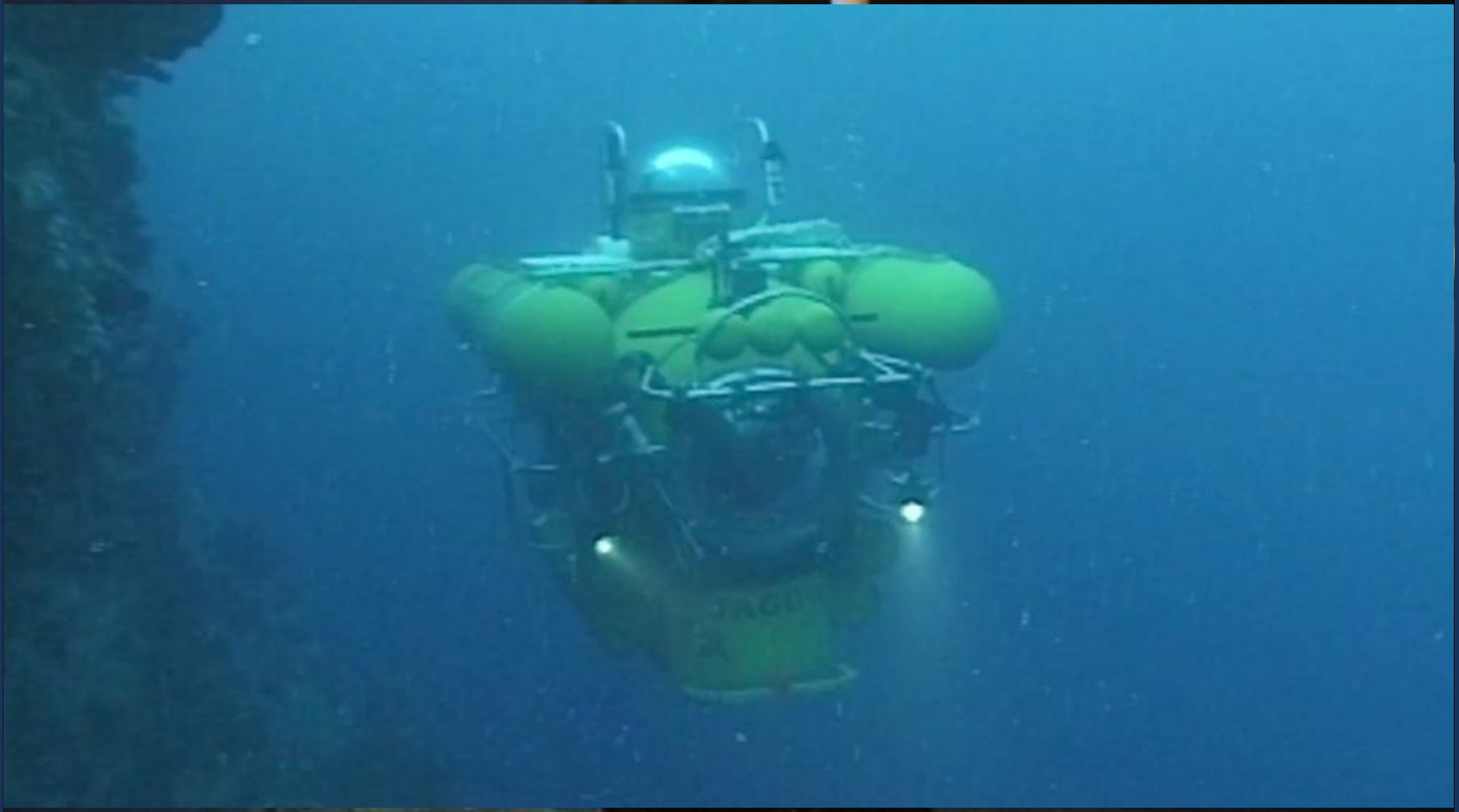
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**KDM**

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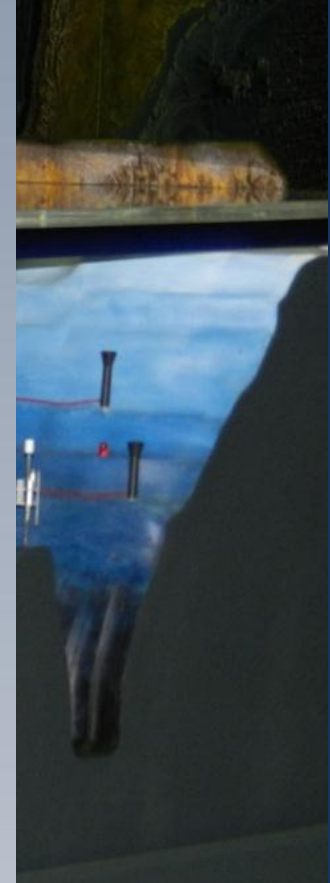
... we have developed many technologies to  
better understand the deep oceans



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# And new technologies are on the horizon ...



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... new technologies are also being developed for the purposes of offshore resource extraction and maintenance



Using tactile sensors...



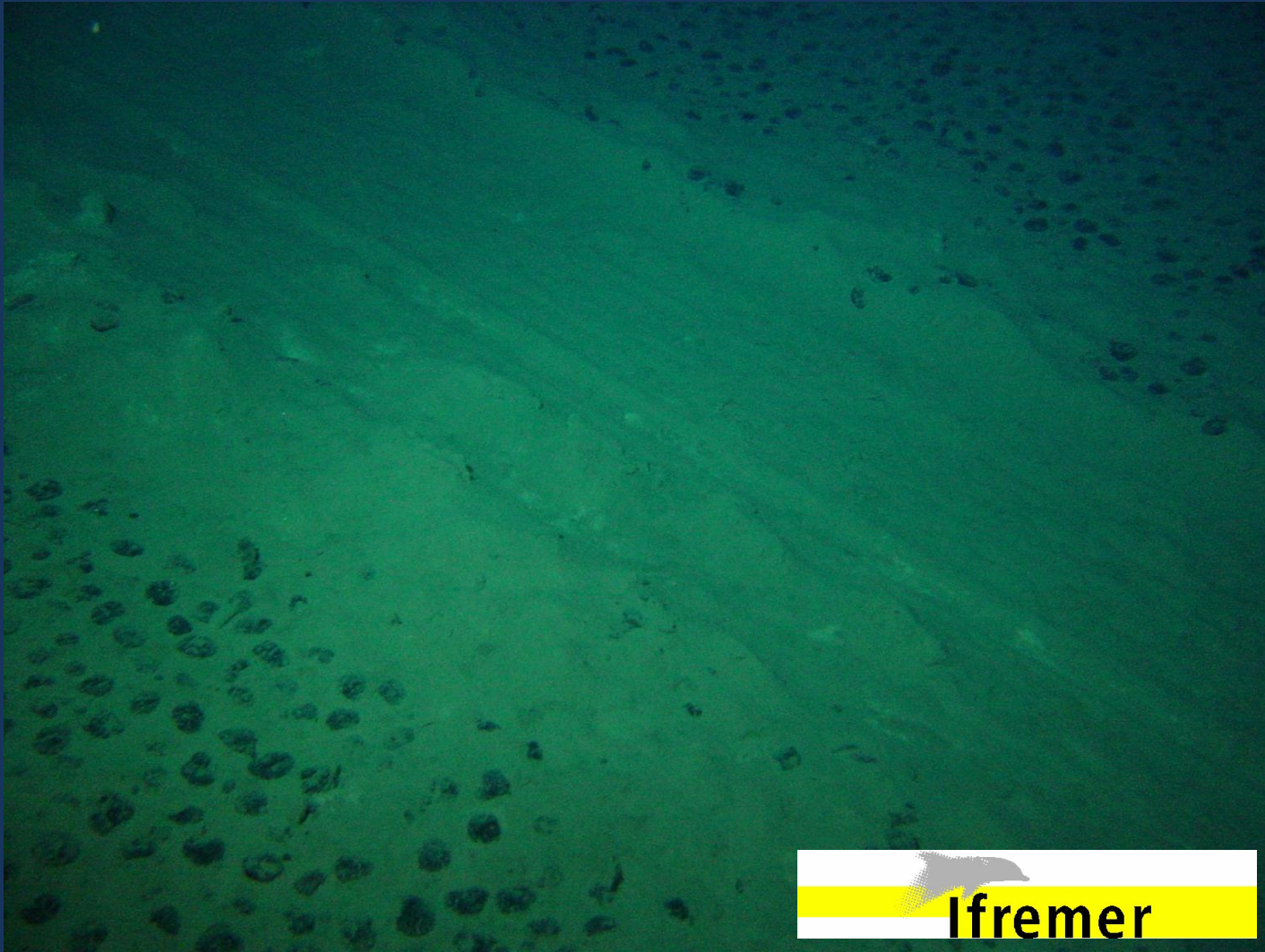
Deutsches  
Forschungszentrum  
für Künstliche  
Intelligenz GmbH

Robotics Innovation Center



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... but technologies need to developed carefully



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... and there are precious places we have yet to fully discover



**marum**

**GEOMAR**  
Helmholtz-Zentrum für Ozeanforschung Kiel

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# The issue isn't really technology

What is really at stake in the deep seas is that we need to decide:

- What it is we want? and
- What is important to us?

On that basis, we need to take an integrated approach:

- Newest technologies
- Best possible understanding
- Highest standards (environmental, safety, technology)
- Economic strategy
- Legal clarity



# What can Europe add to this process

- ➔ Integrated approach – expertise from along the value-chain and across Europe
- ➔ Research and technology funding
- ➔ Development of environmental, safety & technology standards
- ➔ International support at WTO, Int'l Seabed Authority, IMO, etc.

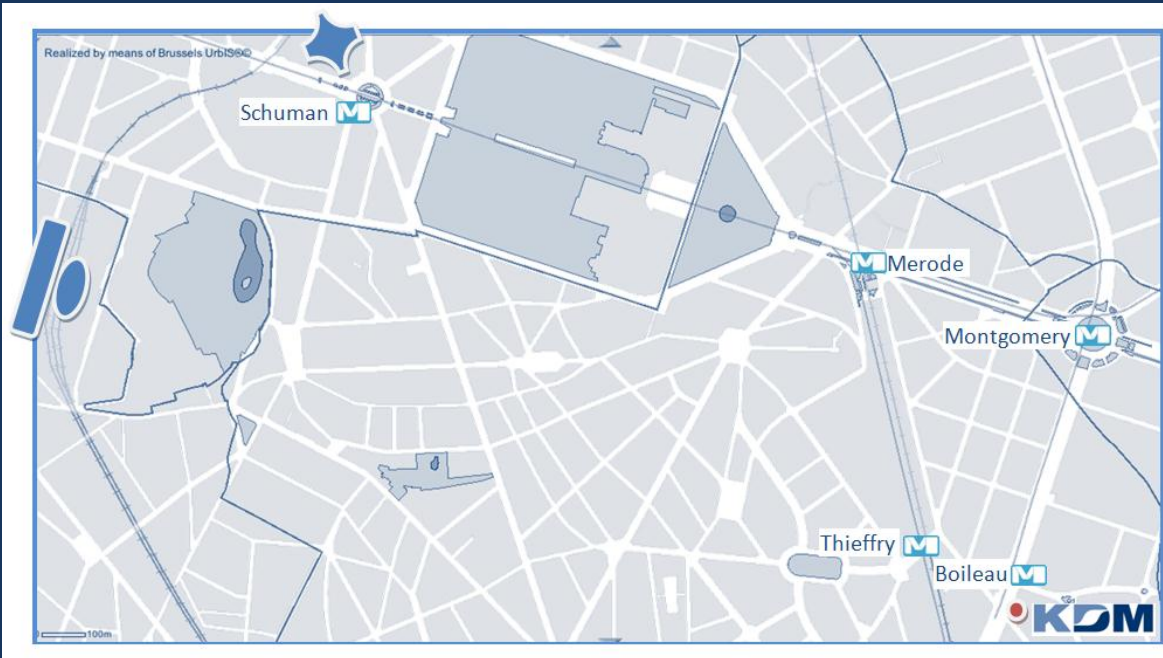


# But we need concrete actions ...

To this end, we propose two medium-term initiatives:

- An EU marine mining strategy and a deep-sea mining test facility – testing technologies, developing environmental and safety standards, and planning market development all within European waters.
- Marine KIC – to promote the ‘integrated’ development of marine resources by supporting and promoting the newest technologies and highest standards for new commercial activities in the oceans. See [www.marinekic-initiative.eu](http://www.marinekic-initiative.eu)





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