DexROV gets green light for sea-trials after successful integration testing
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About three months before it begins its first open-sea trials, DexROV has achieved excellent results in its latest integration tests during a meeting at Jacobs University in Bremen.

The seven consortium partners completed specific tasks to streamline efforts towards integration in the €5.3 million undersea-operations project. The respective teams tested the interaction of DexROV's various functions, including the perception and modelling of the underwater environment (JACOBS); the navigation and manipulation control of robotic arms (ISME and Graal Tech); feedback from the cognitive engine (IDIAP); and the effectiveness of simulated operator commands (SPACEAPPS).

In a dress rehearsal for wet trials in June, participants at the five-day meeting used a virtual environment created by a Jacobs University simulator that perceives and reacts to the test-bed conditions the way the robot prototype will operate underwater. "Virtual DexROV," which allows for safe testing without the damage risk of underwater trials, must account for light conditions, data delays (latency), any limits to processing power or the effect of currents. This ensures that all of DexROV's components work, even in the most challenging undersea environment.

"The technologies required for DexROV's success have been confirmed as working together with very good synergy. The knowledge gained from the latest stage of testing indicates that we can approach the wet trials with increased confidence," says Jeremi Gancet, the project coordinator for Space Applications Services, the Belgian company leading the consortium.

DexROV – an abbreviation for dexterous remotely operated vehicle – will be deployed (by Marseille-based COMEX) to a depth of 100 meters in the Mediterranean Sea in the last week of June. The project's ultimate goal is to perform underwater operations at depths of up to 1.3 kilometres using a semi-autonomous ROV and a vessel equipped with a satellite communication link. This will be connected to an onshore control centre that operates the ROV using exoskeleton technologies.

DexROV will reduce the costs, hazards, and number of offshore personnel involved in underwater operations in the fields of energy, communications infrastructure, science, archaeology and shipwreck recovery by enabling delocalized supervision for deep-sea inspection and maintenance work.

The project is financed under the European Commission's Horizon 2020 Research and Innovation programme, a seven-year initiative to safeguard Europe's global competitiveness and to promote economic growth. With

almost €80 billion earmarked for the funding of selected projects, it is the European Union's largest research and innovation programme ever.

"The latest results presented at Jacobs once again validate the time and effort that all of DexROV's partners have invested over the past two years. We are very pleased to be playing a pivotal role on a state-of-the-art project that will lead to widespread application in unrelated industries and even in space," says Professor Andreas Birk, who started the robotics group at Jacobs University in 2001 and hosted last week's meeting.

The DexROV project began in March 2015 and is scheduled for completion in August 2018.

For more detailed information on DexROV, visit the website at:
http://www.dexrov.eu/
For more information on the Horizon 2020 programme, visit:
https://ec.europa.eu/programmes/horizon2020/

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