

HEADS join project wins at World Oil Awards

REPSOL AND INDRA WIN AWARD FOR TECHNOLOGY TO IMPROVE SECURITY OF MARITIME FACILITIES

- **HEADS pioneering project, jointly developed by Repsol and Indra, has been chosen as the best technological project by trade magazine World Oil in the “Health, Safety, Environment/Sustainable Development Offshore” category.**
- **This unique cutting-edge technology ensures the utmost security for energy industry operations at sea.**
- **Repsol has contributed to HEADS through its extensive knowledge of exploration and production in hydrocarbons and the marine environment.**
- **Indra has provided its knowledge of image interpretation algorithms and its experience in the development of real-time data processing, construction and the use of radars and infrared cameras.**
- **The pilot phase took place at the Repsol Technology Center (CTR), and the first industrial set-up has been operating on the oil platform off the coast of Tarragona since 2013.**
- **Indra and Repsol offer this innovative technology to the energy industry by means of a joint Marketing Agreement for HEADS.**
- **This award is additional recognition of Repsol's efforts in developing cutting-edge technology for the exploration, development and production of hydrocarbons, such as with the projects Excalibur, Sherlock and Kaleidoscope.**
- **The World Oil Awards honor the most innovative technological projects in the oil industry, and give particular emphasis to companies that solve future technological challenges.**

Repsol and Indra have been chosen by the trade magazine *World Oil* for their HEADS project (Hydrocarbon Early and Automatic Detection System), a unique technology for the early detection of hydrocarbon leaks in the sea, leading to increased security in energy industry facilities.

Developed at the Repsol Technology Center (CTR), Repsol has contributed to HEADS through its extensive knowledge of exploration and production in hydrocarbons and the marine environment. Indra has supplied its knowledge of image interpretation algorithms and its experience in the development of real-time data processing, construction and use of radars and infrared cameras and command and control consoles.

HEADS won the award for Health, Safety, Environment/Sustainable Development Offshore, facing the competition of companies that specialize in developing and marketing offshore technology, such as Halliburton and GE Oil & Gas.

A benchmark publication in the oil sector for almost 100 years, the prestigious magazine *World Oil* honors the most innovative companies working toward technological development to solve the industry's challenges.

HEADS uses different detection sensors in combination with the automatic interpretation of infrared and radar images in addition to the capacity to launch alarms with no human intervention. The coordinated use of infrared and radar images guarantees a substantial increase in reliability, while the automated process enables continuous monitoring and very high reliability, significantly improving existing systems.

This project, which was rolled out in late 2011, was developed by a multidisciplinary team formed by over twenty top-level experts and researchers from the fields of the oil industry, physics, chemistry, radar, algorithm science and software integration. Both companies have registered the patent by means of a Patent Cooperation Treaty (PCT) in over 147 countries.

Repsol has become a leading company in deepwater exploration by investing in innovation and technology. The 400 researchers at CTR have developed technological projects focused on the exploration, development and production of hydrocarbons. The project was developed at this center, and its first set-up operates on the platform in Tarragona.

Once the research and development phase of the project was successfully completed, both companies have jointly marketed the HEADS systems to the energy industry across the world.

Indra has extensive experience in the development and implementation of technological solutions for the hydrocarbons sector, in which it has a worldwide presence with 1,500 professionals and projects over the five continents.

Indra

Indra, chaired by Javier Monzón, is one of the world's largest consultancy and technology multinationals, a leader in Europe and Latin America and is expanding in other emerging economies. Innovation is the cornerstone of its business, which is highly focussed on the customer and on sustainability. The multinational is one of the leaders in its sector in Europe in terms of investment in R&D and innovation, having invested more than €570M in the last three years. With sales approaching €3,000 million, it employs 43,000 professional and has customers in 138 countries.

Repsol

Repsol is an integrated global energy company engaged in activities in over 30 countries, and employing 24,000 people. It is specialized in the exploration of hydrocarbons and has been responsible for some of the world's most important discoveries in recent years. Repsol operates in some of the most challenging areas on the planet -many of them inaccessible to the industry until a few years ago-requiring highly-advanced technological resources.

The Repsol Technology Center located in Móstoles (Madrid) is one of the most advanced in Europe and the largest in Spain, with a built area of some 56,000 m². Over 400 scientists and researchers work here throughout the whole of the company's value chain.

HEADS is an example of Repsol's commitment to science, technology and innovation to ensure the supply of smart energy, and is a further addition to other Repsol successes such as the Kaleidoscope project carried out in partnership with the BSC and Stanford University, and the Sherlock project which has made the CTR a byword for innovation and technology worldwide.

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