

Antonio Brufau attends 10th anniversary celebration

## **REPSOL SHOWS ITS SUPPORT FOR THE BARCELONA SUPERCOMPUTING CENTER**

- **Repsol's Chairman, Antonio Brufau, attends the 10th anniversary of the Barcelona Supercomputing Center, reaffirming Repsol's collaboration with Spain's National Supercomputing Center.**
- **Repsol and the BSC began collaborating in 2007 and now work together on several innovative projects, such as Caleidoscopio, Resolver and the Virtual Lab project.**
- **The building to house the new BSC headquarters will be completed next year. Repsol is providing 6 million euros for its construction.**

Repsol's Chairman today attended a conference in Barcelona organized by Spain's National Supercomputing Center (BSC-CNS) to commemorate its 10th anniversary. Antonio Brufau attended to demonstrate Repsol's commitment to the development of the BSC.

Collaboration between Repsol and the BSC-CSN began in 2007 and since then has focused on projects with advanced R&D in the field of geophysics in hydrocarbon exploration. The first project Repsol and the BSC-CSN carried out together was called Caleidoscopio.

Caleidoscopio was born out of a desire to unite science and cutting-edge technology in order to discover new oil and gas fields. To achieve this, the project used a new generation of chips capable of managing complex mathematical algorithms previously tested with the MareNostrum supercomputer.

This technological development has allowed Repsol to process information 15 times faster than other companies in the sector, increasing the reliability of seismic images and thereby increasing its chances of finding oil and gas thousands of meters under the subsoil. With this project, Repsol puts itself at the forefront of exploration in complex subsoil areas with large reserves, such as the Gulf of Mexico or the deep

waters of Brazil, where there are an estimated 100 billion barrels of oil to be extracted. The Caleidoscopio project has evolved and currently uses electromagnetic technology to find fluids in the subsoil layers. This technology also allows the type of fluid found to be identified.

After the first project, two more were added as the result of the creation of the Repsol-BSC Research Center in 2011: Repsolver and the Virtual Lab project.

The objective of the Repsolver project is to simulate any physical system on a supercomputer. While still under development, it has already been used to simulate the propagation of acoustic and elastic waves in the subsoil, the evolution of hydrocarbons in a field and the functioning of a battery for an electric car.

The Virtual Lab project, which complements the Repsolver project in that it uses simulations, aims to optimize the parameters of a system. Its development plan includes the optimization of the operational parameters of a chemical reactor and the design and operation of a battery.

Both projects, with a total investment of more than 2 million euros, started in 2012 and their different development phases will be completed in the second half of this year.

With his attendance at today's event, Antonio Brufau demonstrates Repsol's commitment to innovation and technology, while consolidating Repsol's fruitful relationship with the BSC.

### **Corporate headquarters: the BSC-Repsol Building**

The "BSC-Repsol Building" will be the first corporate headquarters of the BSC-CNS since the center was launched in 2004. The Barcelona Supercomputing Center - National Supercomputing Center currently has over 300 researchers and R&D specialists who work in different buildings within the north Campus of the Technical University of Catalonia (Universitat Politècnica de Catalunya, UPC). This is also the home of the MareNostrum supercomputer, the flagship of the center and considered to be the most powerful supercomputer in Spain.

The BSC-CNS started construction of its future headquarters in May 2011 with a contribution from Repsol of 6 million euros. The project is expected to be finished next year. The new headquarters will house all the center's employees and future facilities.