

Space Technology and oil and gas activities Arena IO program contributes to new solutions

Arena integrated operations has this spring (2009) been co-organizer of conferences with themes ranging from autonomy and remote control of installations in the North Sea, to driverless cars, spacecraft, and rovers on Mars.

- The petroleum industry must seize the opportunities that new technologies and new and collaboration approaches represent, says Martin Sigmundstad, project manager for the Arena IO - program.
- Remote control and real-time activities (integrated operations) will play central roles in the future operation of oil and gas fields. Through the use of integrated operations, we will be able to operate these fields independent of distance, e. g. between land and sea. This could save the oil and gas industry billions of dollars.

We aim to ensure that Norway stays at the forefront internationally in these areas, "says Sigmundstad. Our plans include a network of the leading players within e.g. autonomy, data and space technology.



The illustration shows a rover on Mars. Remotely controlled from Earth, it was driven in many directions, collected samples, and searched for water. Image www.jpl.nasa.gov.

Improved value creation through the use of robots, integrated and real-time operations

Can Space technologies be applied to a drilling rig on the seabed?

This is what the SeaBedRig founders are discussing with space technology experts in Europe and the USA.

- The fully automated drilling installation will be placed on the seabed and will be remotely controlled. Perhaps already developed space technologies could be utilized for parts of our project, says Kenneth Mikalsen, technical director of SeabedRig.
- We are in contact with the Norwegian Space Center, the European Space Association - ESA, and this summer we will visit the Jet Propulsion Laboratory (JPL/NASA) in the US to learn more about their technologies.

Mikalsen, was one of the speakers at the conference on technology transfer between spacecraft and the oil and gas industry that Arena Integrated Operations (Arena IO) and StatoilHydro recently arranged at Forus, Stavanger.

Gianfranco Visentin represented ESA, while Dr. Knut Øxnevad was on the big screens via video directly from the US. He showed remote control of rovers (different vehicles) on Mars as examples of potentially relevant technologies.

SIMTANO AS

Øxnevad grew up with oil activities in Stavanger, but have worked many years with space technologies at JPL/NASA. Through the company SIMTANO AS in Ipark, he is a driving force encouraging experience transfer between the oil and gas and space sectors.

"Autonomy in IO"

At the conference "Autonomy in IO "earlier this spring Øxnevad started by showing driver-less cars driving autonomously on narrow mountain roads. Automation and autonomy have been used very successfully in both the space and nuclear industries.

Arena IO and the Norwegian Association for Automation (NFA) had assembled a wide range of experienced speakers who asked many

questions and provided some answers.

What challenges and opportunities do these technologies represent to the oil and gas industry? How far we have come, for example in drilling, subsea operations, pipe inspection, or gas compression on the seabed? Are these technologies safe enough? Are the technologies good enough? Do we have enough qualified experts to use these technologies? Will this remove too many jobs?

The participants were willing to let themselves be both challenged and inspired.

Rolf Wiborg, for many years director of Ekofisk and now principal engineer at the Oil Directorate (OD), feels we have technologies and systems making it possible to communicate across time zones with the world best experts. – Why are we using more time making decisions, he asked.

Martin Sigmundstad is the driving force behind the Arena-IO program, with long experience from technology development and implementation from both contractor companies and oil and gas companies.

Implementation is important, but difficult, he said. - It is not as simple as just introducing a new technology. Work processes all the way from planning to operations will have to be adapted to the new technology.

But, in more and more areas automation and autonomy will over time enable us to replace our current manual work processes.



SeaBedRig

Seabed Rig is an unmanned fully automated drilling rig to be place on the seabed.

The founders will this summer visit JPL/NASA to study their robotic technologies. Here lies the future jobs for youth who today handles GameBoy/ Playstation /computer games and computer tools with the greatest of ease.

////////////////////////////////////

Do not go where the path may lead. Go instead where there is no path and leave a trail, " wrote Ralph W. Emerson. Now this is the motto for JPL/NASA that Ipark, Seabed Rig, Arena IO and StatoilHydro are working with.

Selected Articles from Ipark Newsletter (ipost). No. 2, 2009