The subsea factory of the future

Per-Erik Holsten, Global Industry Group Manager, Chemical, Oil & Gas at ABB on how offshore platforms could become a thing of the past.
Could you give us more details about the development project with Statoil? And what is the solution for the oil and gas industry?
In our collaboration with Statoil, we are developing and testing equipment for subsea conditions at a depth of 3000 meters. Here we are talking about solutions for transmission, distribution and power conversion designed to power and control subsea pumps and gas compressors installed in deep water and performing over vast distances. At these depths you need to have quite a bit of redundancy and to make sure that every piece of equipment operates safely, reliably and efficiently. We are currently running a development project with Statoil to ensure that these new technologies perform under these special conditions.

How does this get done at present?
Currently, it is more of a hydraulic solution. The reason for this new technology is that it will help with removing the offshore platform in the long term, and have everything subsea. This is a concept we, together with our partner Statoil, call the ‘subsea factory’. It also means supplying power and control to enable separation of the oil and gas down there which is generally done on the offshore platform. This can now be done subsea.

What’s new about the approach and why do you think it will be successful at this time?
The approach we are taking is delivering our entire portfolio to be utilized at depths of 3000 meters. So you take your control equipment, electrical and telecommunication equipment and bring them to this depth, which is a very harsh environment. This will enable all oil and gas companies to go to subsea structure, even in the very difficult locations where your have difficulties in setting an offshore oil platform.

This new technology enables the vision of “The Subsea Factory of the Future”. As we progress in our testing, we are quite confident that this will be a successful development, and oil and gas companies will adopt it in their projects.

If you succeed, what difference will it make?
I think this technology will be a game changer for the oil and gas industry, as it will allow companies to access offshore fields that they can’t access now. Also, this new technology is cost effective, as it will reduce maintenance costs.

What other challenges do you expect to face?
It’s important to ensure that of the equipment we provide is safe and reliable. That’s why we are having this heavy testing process with Statoil, the whole concept is that is has to be put it down there for a long period of time, and to ensure that it works perfectly for that period of time.

How long will it take to see oil and gas companies to adopt this type of technologies?
Currently we are testing and selecting the right technology, and we expect that this technology will be available for use between 2018 and 2020. Some parts of the solutions are already available like the subsea transformer that can be used subsea to a depth of 3000 meters.

What are the midterm and final “exams” to check for success?
We need first to ensure that this technology works under the high pressure conditions that exist subsea, and also we need to make sure that this technology can work for long time without failure, which are the two key points being verified.