DISRUPTIVE TECHNOLOGY AND FRESH THINKING: a smarter subsea perspective

Tore Erntsen, Chief Technology Officer, Proserv, reveals how opportunities to break with traditional approaches offer gains around cost and carbon footprint.

Technology has been the enabler for change across industry since before the dawn of the steam engine. In today's energy sector, machine learning presents leading technology companies like Proserv avenues into cutting-edge predictive data analytics, real-time optimisation and an ability to extend the life of critical infrastructure significantly. Meanwhile, sustainable energy accelerates into pioneering openings in hydrogen and carbon capture to stem the tide on global warming.


Tore Erntsen, CTO, Proserv

The oil and gas segment has been driven by innovation but, like all sectors, it can also be tied to tradition. This is understandable when regular methods become familiar and change involves uncertainty. But thinking outside the box can often be ground-breaking and provides efficiency gains affecting time, cost and, crucially, carbon footprint.

INNOVATION IN OUR DNA

At Proserv, we are renowned for developing technologies giving unique benefits and harnessing our ability to listen to market needs and identify trends to build impactful solutions. This is exactly what we are doing right now in offshore wind, as we create systems delivering real-time condition-monitoring and intelligence insights.

Our value proposition in oil and gas has set us apart from the competition for years and we continually challenge operators and other suppliers to think differently about operational strategies. Our technology ethos is underpinned by regeneration and life extension, not removal and replacement.

This philosophy, allied to market-leading coexistence capabilities and subsea controls reliability, has meant we have always been able to supply an offering where there are obvious advantages around cost and time savings. But in a world where it is increasingly imperative that all industries think of a cleaner, smarter way of doing things, our template also has tangible environmental benefits.

REDUCING EMISSIONS

When operators deploy our subsea control module technology through the estimated 25-year lifespan of a field, Carbon-Zero, a division of Data Engineering Projects Limited, a sustainability and energy consultancy, has calculated that Proserv can deliver a 56% reduction in emissions, or 77 tonnes of CO_2e, when compared to standard industry subsea control modules. The reason? The reliability of our technology, meaning a vastly reduced frequency of maintenance campaigns, and no need for the retrieval of our equipment throughout the life of field – a notable outlier when placed alongside the patchy performance of other controls providers.

Consider the potential environmental gains from fewer inspection trips to site, mitigating the carbon footprint of multiple vessels and regular maintenance campaigns, not to mention lessening the exposure of personnel to HSE risks when visiting an installation.

Subsea production is undertaken in inaccessible environments yet, conversely, obsolete subsea electronics and reliability failings are perpetual worries for operators. Its ability to confront these issues head-on makes our augmented controls technology (ACT) a genuinely disruptive solution for inefficient mature assets locked into a steady decline.

ACT SMART

Proserv's independent and OEM agnostic mindset towards innovation has meant we have engineered an offering to solve the perennial issue of obsolete subsea control systems no longer supported by a legacy OEM provider that has already moved on to newer models. When electronics modules fail, the solution put forward by the original supplier is usually a full system upgrade.

This would not only mean the expense and time of a major offshore campaign to rip out the failing subsea infrastructure but the associated carbon footprint of an intensive intervention, the manufacture of replacement components and their shipping to site. But ACT represents a much smarter and less intrusive alternative that can extend life significantly.

Its rationale is the same as across our whole portfolio: our methodology is to reuse as much of the original equipment as possible. We seek to avoid the needless waste of replacing faulty equipment that, via our technologies, might actually be refurbished and rejuvenated.

Our Artemis 2G (A2G) subsea electronics module (SEM) can be retrofitted to coexist with the legacy control system meaning we can make 'pinpointed' interventions targeting problem SEMs, replacing them with A2G, regenerating performance and leaving much of the legacy system in situ.

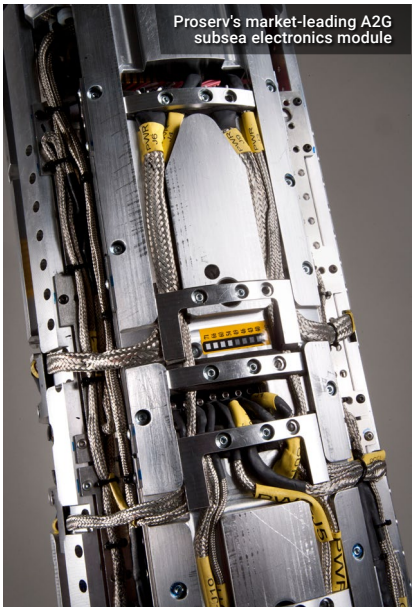
Our communications bandwidth allows us to integrate further functionality as a simple add-on to the existing infrastructure with minimal impact (such as leak detection sensors) to improve visibility on condition and integrity. A reliable system is also an efficient one.

INTELLIGENCE INSIGHTS

Effective real-time data analytics, supplying early detection of irregularities, are not only integral to building a joined-up approach where maintenance becomes condition based and asset performance is optimised, alleviating inefficiencies and supporting life extension, but intelligence also buys time.

If an operator is aware of a developing issue in advance, it can avoid the typical time, and carbon intensive, urgency to ship components and rush personnel to site, and can potentially find smarter, cleaner alternative transit solutions instead.

Ultimately, though, by adopting a more innovative, and less traditional, philosophy regarding subsea operational strategy and embracing the right technologies, an operator can find real benefits around life extension, environmental impacts and its bottom line.


Proserv's market-leading A2G subsea electronics module