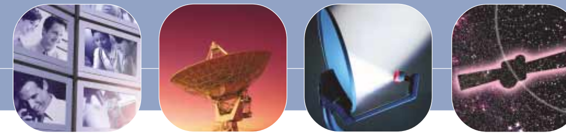

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Digital oilfield applications & satellite communications

Today, mission critical operational success in the oil and gas exploration and production environment is heavily dependent on access to the most efficient information and communications technologies (ICTs), and to a vast array of sophisticated applications that these technologies bring to the teams. Martin Jarrold, Chief of International Programme Development, GVF, reports.

In April 2007 Schlumberger Information Solutions and BT launched the world's first public wireless broadband service for offshore and remote oil and gas drilling rigs and production platforms. The Wi-Fi-based service allowed offshore workers to communicate with their homes and friends more easily using wireless enabled laptop computers and PDAs for e-mail, instant messaging and video/webcam, and using the very same type of satellite links which comprise the backbone of the digital communications infrastructure of oil and gas rigs everywhere. Initially this service was deployed in the North Sea, but increasingly such services are being rolled-out throughout the E&P patch.

Such services are being introduced for the welfare of rig and production platform crews who often work in harsh, extreme and remote locations, particularly offshore. It is only one of very many examples of the use of broadband satellite communications in the search for, and production of, hydrocarbon energy resources. Indeed, the subject of digital oilfield applications and satellite communications commands a far larger canvass.

Today, mission critical operational success in the oil and gas exploration and production environment is heavily dependent on access to the most efficient information and communications technologies (ICTs), and to a vast array of sophisticated applications that these technologies bring to the disposal of teams of geologists, geophysicists, drilling engineers, seismic data analysts, and a wealth of other expertise. Be it, for example, production data management, remote surveillance, or modelling solutions, etc., all integrated into an inclusive web-based visualisation framework, these various constituent elements of the digital oilfield (and gas field) depend on the satellite, and satellite-hybrid, communications environment to provide the necessary connectivity, the required bandwidth, the imperative reliability, and essential cost-effectiveness.

Also today, the growing global thirst for new supplies of hydrocarbon-based energy is driving oil (and gas) exploration investment into ever more extreme environments, not just offshore, but in increasingly deepwater locations. Nowhere is this more-true than in South, East and South East Asia.

Indeed, India's recent discovery of US$100 billion dollars-worth of subsea natural gas is indicative of the fact that regional powers like China, like India, and like the other major regional economies of Indonesia and Malaysia, now account for an increasing percentage of overall deepwater capital expenditures, a proportion that is forecast to reach almost 10 per cent of the global total over the next four years. It is in this context that it is vital to pose such key questions as: How can satellite, and satellite-hybrid, communications solutions help enable the digital oilfield? How does the solutions vendor community compete to satisfy the efficiency and data risk-management needs of the buyers of digital oilfield ICT solutions in the E & P environment? How do we define the applications and communications dynamics of a unique regional oil & gas marketplace, whilst considering precisely how the use of different communications platforms is helped, hindered, and determined by geographically determined supply factors? What are the key regulatory and licensing issues in the region? What is the potential for spectrum allocation conflicts between terrestrial wireless and satellite solutions?

Focused conferences

Since 2006 GVF (in partnership with UK-EMP) has produced three widely acclaimed 'Oil & Gas Communications: Middle East & North Africa' conferences held in Cairo and a highly successful Oil & Gas Connectivity: Digital Applications & Communications Dynamics conference in Aberdeen in 2008. The regional expansion into the European oil & gas patch earlier in 2008 will be followed-up in November this year by Oil & Gas Communications South East Asia: Digital Applications & Communications Dynamics Onshore, Offshore & Deepwater (O&GCSEA).

This further expansion into South East Asia is a direct reflection of a complex and highly dynamic interplay of regional supply and demand factors – factors which have created a particularly vibrant regional energy environment characterised by an accelerated exploration for, and production of, new reserves of oil & gas. In addition, the conference has been recognised as an opportunity to tackle the aforementioned questions by both the private and public sectors – for example, whilst the details are yet to be finalised, both Petronas and the ITU will be involved in the two-day programme over 18th and 19th November.

To be included in the conference programme – which at time of writing is scheduled to cover such key topics as: digital oilfield resilience and security; investment in advanced communications infrastructures; satellite links for floating production platforms and semi-submersible rigs; SCADA and broadband satellite etc – will be an examination of the difficulties associated with the sensitivity of certain types of exploration data which, in the case of a number of countries in the region, cannot be sent outside of the certain national jurisdictions. One example of this relates to subsoil data analytics, the procedures and process of which must be accommodated to some countries having banned data "exports" – presumably for reasons of national security.

Another topic listed in the above agenda for Kuala Lumpur has already entered into the general dialogue surrounding the Oil & Gas Communications conference series – that of the inter-relationship of oil and gas industry levels and flows of investment in advanced communications infrastructures and the price of a barrel of oil.

Over the last sixth months oil has significantly dropped from near the US$150 per barrel level, but nevertheless oil companies have, as a result of the high-price period, accumulated significant additional revenues. I had intuitively supposed that this meant the significantly greater availability resources for just such increased investment in satellite communications infrastructure. However, intuition can, and does, lead to error. Thus it has been clearly emphasised to me, in my capacity as Chairman of the Oil & Gas Communications conference series, that this is not so, and just as much as ever the oil and gas sector demands efficiency and cost-effectiveness as core features of its expanding satellite communications imperative.

More information about O&GCSEA can be found on the GVF homepage at www.gvf.org, or by clicking on www.uk-emp.co.uk/O&G.SEAsia.2008. ■