

Remote video streaming comes of age

By Christy Hartman, CapRock Communications

Roustabout Energy International



www.energyinternat.com

Issue 436

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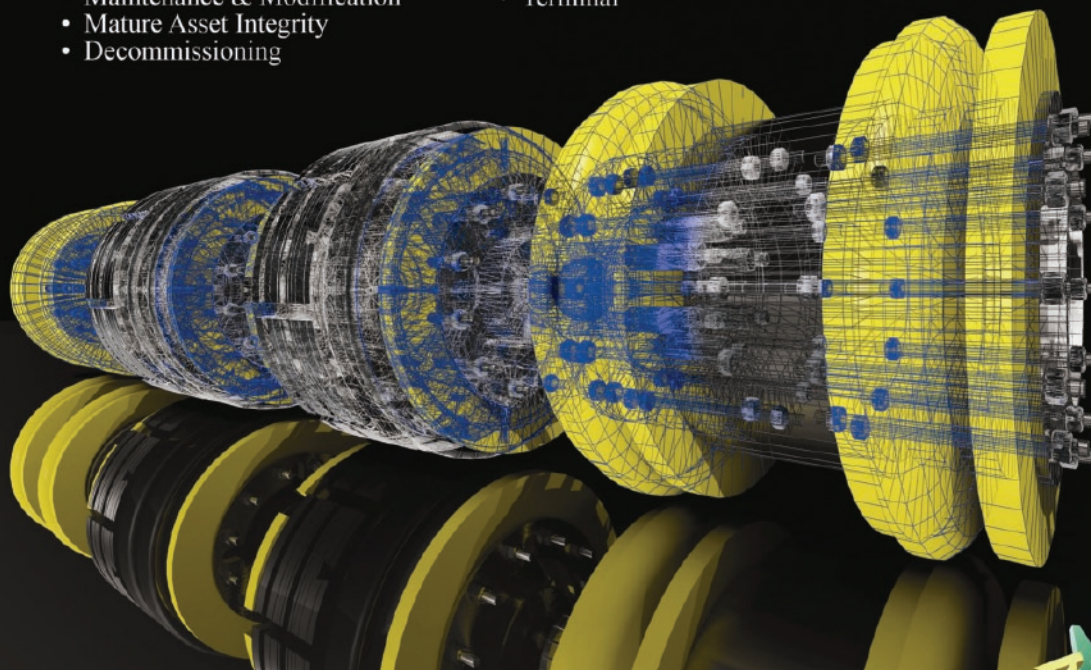
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and :

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STATS GROUP

Process & Pipeline Integrity Solutions

+ 44 (0) 1224 772461

www.statsgroup.com

info@statsgroup.com



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Remote video captured by cameras mounted to subsea divers' helmets provides pipeline managers a first-person perspective of the problem



Remote video streaming is available in scalable packages to provide increased visual clarity, image size and frames per second at a moment's notice for more detailed operations



ROV's equipped with cameras and leveraging remote video streaming services extend video to managers' and technicians' desktops in real-time

Imagine that you're an operations manager responsible for a large offshore pipeline network and you've just received word that there may be a leak in one of the lines. In addition to the stress you're putting on yourself to get the leak stopped immediately, you've got your bosses wanting to know how bad the leak is and how it's going to be resolved, and they want answers now.

Luckily for you, you've contracted a diving services team equipped with remote video streaming capabilities. You e-mail the remote streaming link to your bosses, provide them with the secure login information and watch as everyone links in to the real-time video stream, just as the dive team reaches the leak 25 meters below the surface. While monitoring the remote video streaming feed taken from one of the diver's helmet cameras and listening in as divers discuss the source and repair of the leak in real-time, you assure your manager that the leak will be fixed in no time.

Remote video streaming deployed over VSAT (Very Small Aperture Terminal) has made scenarios like this a reality. The integration of subsea video cameras with satellite links and IP networks has completed the visual link between a world of underwater uncertainty and knowledge. No longer must companies and managers be in the dark about offsite operations or critical subsea facilities. Now, executives and onboard crews can have instant access to real-time video streams anywhere in the world.

Remote personnel onboard vessels, drilling rigs, platforms, and offshore facilities have relied on VSAT services for broadband communications for decades. Today, communication providers are focusing on delivering solutions beyond just a broadband link. These solutions are designed to deliver managed services that are integral components of critical business operations. Remote video streaming is one of these services that is providing more efficient and cost-effective methods of managing subsea operations. And with

recent technological advances, it is easier than ever for businesses to gain a visual window into vital operations.

Modern compression technology has enabled service providers to offer better video clarity through less bandwidth than previously required. Today, 512 Kbps provides clients with a business-class video resolution that in the past would have required significantly more bandwidth for the same image. Technology has also enabled service providers to stream remote video content to multiple users simultaneously via web browsers while also providing a means to grant access only to those authorized to view the footage. The stream also can interface with legacy analog video distribution systems so that clients do not need to purchase an additional system for local distribution if needed. By enabling multiple user access, managers and technicians can react more efficiently when a situation arises and can receive instant input from qualified staff regardless of their location.

To make video streaming even more flexible, this technology can be scaled to adapt to changing conditions as requirements can drastically change from one job to the next. Companies no longer have to pay for unnecessary bandwidth to complete projects which have lower demands for picture quality or resolution. Applications typically call for at least 64 Kbps of always-on connectivity so that the service is ready to use at a moment's notice without wasting valuable time during a crisis waiting on a technician to set up the service. Once the connection is established, customers can easily transition to speeds such as 256 Kbps or 512 Kbps as needed to increase visual clarity, video image size and frames per second so that more accurate assessments can be made.

Remote video streaming over VSAT is impacting the energy market in more ways than just divers and subsea pipeline repair. Video streaming is being used for inspections and installations to general cleanup of undersea structures. Companies operating ROV (Remotely

Operated Vehicle) support vessels use remote video streaming to literally have an "eye" into what ROV's are seeing and extend the images to managers' desktops back at the regional offices.

Onshore operations also benefit from remote video streaming. Surveillance cameras monitoring offsite operations can help onsite management keep track of what's happening in the company's other locations, such as what is going on in key supply and equipment areas. Information is received instantly and no time is wasted waiting for a daily report.

The biggest advantage companies are seeing from remote video streaming is the significant reduction in downtime. There's no easier way to come up with a solution to a subsea problem than when an entire team can look at it simultaneously and discuss the situation in real-time. By streaming live video from a leak or other underwater scenario, it eliminates the need for divers to describe the problem to the engineer back on the surface, who then has to describe the problem to someone else who has to tell it to someone else to get authorization to resolve the problem. All the while, details on the problem slip between contacts and new questions arise like, "how quickly are the bubbles coming out?" Poor communication leads to increased downtime. The real-time video enables the engineers, managers and executives to see the problem – in some cases, even hear it – and engage in immediate discussion on the situation and how to fix it.

Remote video streaming over VSAT isn't just a luxury; it is fast becoming an essential tool for reducing costs and decreasing downtime of remote facilities. Offshore pipeline networks are just one example of the critical elements of the energy industry that must operate with uncompromising quality and minimal downtime. By taking advantage of new technologies to make faster decisions and improve productivity, well equipped support teams are minimizing interruptions and significantly improving the bottom line. ■