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Making offshore communication a reality

Reality Mobile is introducing its RealityVision collaboration tool to the energy market. Pipeline discusses state-of-the-art communications technology with Reality Mobile's Mike Odell, Vice President of Global Energy Markets.

RealityVision is a real time, mobile collaboration software platform. The technology opens up possibilities for better remote operations monitoring and improved HSE practices for the energy industry. Imagine that an inspection team uncovers a pipeline integrity problem in a remote location. Using RealityVision's platform, field engineers can instantly bring a team of experts, from anywhere in the world, to the same level of visual understanding by shooting video from a smartphone.

Pipeline: In the energy industry, how important is visualisation and collaboration in remote, field operations?

Modern day oil and gas operations are vastly complex, decentralised, data rich environments with a wide variety of disciplines working together to ensure safe, economical and efficient performance. Quite often subject matter experts are in different locations from where the task at hand is undertaken. Complicating operations further is the challenge associated with the expected "crew change" that will occur over the next five to ten years when many of the most seasoned and experienced employees will retire – leaving the industry with a knowledge void.

These factors make it critical for employees and experts located in disparate locations to be able to efficiently and effectively collaborate.

This kind of collaboration is enabled by real-time visualisation of data and information from the field.

RealityVision addresses these challenges by allowing users to share data and video with other users anywhere, giving them the ability to instantly create a shared vision of an asset or event. Users can connect to the network and share information via a number of devices ranging from their desktop computer to intrinsically safe devices to smart phones. Once connected, users can both push and pull video, data and GPS tracking information over the network. The result is faster and better informed decision making, better monitoring of remote operations and improved HSE practices.

Pipeline: Can you describe the current state of offshore communications?

Offshore communication operations vary widely from basin to basin. The most developed assets run fibre optic cables to a base, while lesser developed assets rely on satellite communications. In places like Brazil, additional bandwidth for satellite communications is unavailable, but they do have a robust cellular network. Currently, most real-time visualisation is done in large integrated operations centres where field data is piped to the centre for analysis and to support decision-making. It is also common to have video conferences from stationary meeting rooms in the field.

The mobile, real-time qualities of Reality Mobile's RealityVision software give energy companies many of the capabilities of the visualisation centres they are used to using, but in a much more dynamic way; better suited to the unpredictable nature of offshore projects.

RealityVision is built on industry-standard infrastructure so is easily implemented, and operates on existing communications networks including cellular and satellite.

Pipeline: Which is the more efficient offshore communications technology – wireless, cellular or satellite? Which does the market prefer?

With the introduction of EX certified routers, wireless is becoming more popular for intra-field networks. From the field to base, the more sophisticated fields use fibre, while the less sophisticated use satellite or cellular. The industry trend is towards more adoption of fibre because it offers increased bandwidth. The cost-benefit-availability trade-off is what drives most decisions about which communications technology should be utilised.

“ Experts no longer have to be on location to view and troubleshoot problems and time no longer needs to be wasted describing incidents when real-time video can bring everyone up to speed immediately ”

Pipeline: How is RealityVision different from other visualisation and collaboration software?

Functioning as a dynamic real-time data and video sharing network, RealityVision enables a powerful visual link between field employees and experts or a central command center. A variety of devices can connect to the network, most of which are already in use at many energy companies, such as intrinsically safe devices, fixed cameras, desktop computers, lap tops and smart phones. Once connected, users can securely push and pull live, real-time video, previously recorded video, data, schematics and much more.

The key difference between RealityVision and other tools is its mobility, and that information on the network can be securely accessed by a large number of users simultaneously. Users don't need to travel to a visualisation center or teleconference suite, they can view data or video on the devices they already have with them. This makes it especially applicable to the unexpected events that arise in oil and gas operations.

Pipeline: What can it offer HSE operations?

Energy is a global industry with a majority of its operating assets located in remote locales. Further, most of these assets represent an HSE risk if not managed properly. HSE is at the forefront of all operators' agendas and often represents their "license to operate."

RealityVision's ability to help organisations make faster and better informed decisions is the key to

improving HSE operations. Experts no longer have to be on location to view and troubleshoot problems and time no longer needs to be wasted describing incidents when real-time video can bring everyone up to speed immediately.

For example, if a medical emergency occurs in the field today, the conventional approach is to contact medical professionals via phone and describe the injury. This method makes diagnosis difficult, time consuming and potentially very dangerous. Using RealityVision via a smart phone, first responders can stream real-time video of the injury directly to the appropriate medical professionals for immediate diagnosis, and begin treatment right away.

RealityVision can also support employee safety in potential dangerous locations. In oil and gas operations located in unstable regions, RealityVision can be used with the GPS capabilities inherent in most smart phones to track employee movements. This allows employers to ensure that field personnel make it safely to the company site. The real-time video capabilities can also be used to monitor conditions on the ground and enable a faster security response if an incident does occur.

Pipeline: Tell us about the video aspects of your package...

Users connecting to RealityVision from a mobile phone or a PC can access any available video source on the network including those originating from other users or fixed cameras. All incoming video streams are also tagged with GPS coordinates if they are available and stored so that they can easily be

retrieved at a later date for analysis and review. In addition to video streams, users can use RealityVision's Screencast feature to select a region of their PC screen, perhaps a section of a schematic, or a video, and send it directly to another user as if it were a live video source. Users working the main operating console for the network can also push video out to a user's device causing it to automatically display live or archived video.

Pipeline: What types of data can it transmit? Is it secure?

At the push of a button, a user can transmit live or pre-recorded video feeds from virtually any camera source, including supported mobile phone cameras, handheld camcorders, telephoto cameras or any other video source that you would typically be able to view via a TV. Text messages, still photos or images, document formats including PDFs, as well as maps and schematics can also all be transmitted over the network.

In terms of security, out of the box, all

communications to and from the server, including live video streams, are secured with user authentication and high-level SSL encryption. The system works within an existing VPN framework, including FIPS 140-2 compliant VPN solutions.

Pipeline: Is it easy to install and use? What are the technical requirements?

Our platform requires no special infrastructure. All RealityVision software components run securely on commercially available hardware and our software functions on every available commercial network, including cellular, Wi-Fi and satellite networks. Installation and configuration are simple. In fact, you can be up and running in just a few hours.

Here's what's involved and how the components can work together:

The RealityVision server software is the system hub. It is installed inside a company's firewall and creates a private, secure communication channel for the organization's users.

The system includes two user components for maximum flexibility.

RealityVision Mobile runs on a wide variety of Windows Mobile and Blackberry devices. We are developing RealityVision Mobile for Android, Symbian and iPhone platforms and expect to announce its availability soon. The second component, RealityVision PC, runs on your Windows-based computers.

A third component, The RealityVision management console, allows for the visualisation, monitoring and control of all the data traffic within the system from a central command centre. Installed on a PC or laptop, the console allows an organisation to track the location of all system users and video sources, share any video source immediately with some or all system users, and remotely compel a user's device to take specified actions, such as displaying a video stream, to share urgently needed information.

The RealityVision Screencast feature runs separately on your organisation's computers and allows you to stream any portion of a computer screen to anyone in your RealityVision network. Using a selection box, users can capture and stream text, images, video feeds, sensor readings, schematics and other critical operational details. This information can be viewed on other computers or mobile devices in real-time.

“ All RealityVision software components run securely on commercially available hardware and our software functions on every available commercial network... ”

Reality Mobile

Share critical, real-time information securely **anywhere in the world.**

