



Enabling Powerful Connections in Oil & Gas Industry

WAVE PTX and Evolve LTE deliver business-critical communications that improve safety and enhance productivity.

Singapore stands as a key hub for Oil & Gas Equipment and Services in Asia, hosting more than 3,000 well-established Marine and Offshore Engineering firms. Despite lacking its own oil and gas resources, Singapore has emerged as Asia's primary petrochemicals hub and ranks among the world's top three export refining centres. Renowned for its premier financial services, robust supply-chain network, and top-notch logistics infrastructure, Singapore comprehensively supports the operational and headquarter requirements of oil and gas corporations situated in the region.

The island of critical communication

Situated on a small restricted-access island that is located about five kilometres to the south of Mainland Singapore, what was once an oil storage installation and later Singapore's first refinery, has transformed into an energy and chemicals park that houses an integrated oil and petrochemicals site with manufacturing facilities for fuels, lubricant base oils and specialty chemicals. Currently, wholly owned by a global energy company, it is the largest refinery in terms of crude distillation capacity, producing 500,000 barrels a day. The complex also houses an ethylene cracker complex and a butadiene extraction unit.

The abundance of metallic structures scattered across the expansive 243-hectare island posed a major obstacle to the installation of a cutting-edge communication network, with metal's disruptive

impact on radio signals presenting a critical challenge. As a solution, a PTT phone system was implemented to overcome this significant hurdle and ensure effective communication across the island. However, how effective is communication that's limited to cable lines?

The island has recently rolled out LTE coverage across its entire expanse to advance its digitalization, automation, and AI systems. Given the availability of LTE coverage, the island sought a replacement solution for its workers and in-house contractors' phone and service. A trusted partner authorized by Motorola Solutions, possessing vast experience in aiding clients during pivotal situations, was invited to recommend a solution offering both mobile phone and PTT radio capabilities.



Not the usual challenges

The presence of hazardous materials such as crude oil and fuel added another layer of challenge, as they presented serious health and safety risks to all personnel involved. In order to mitigate this, the use of intrinsically safe portable devices became a critical requirement for workers operating on the site.

After conducting several meetings and extensive analysis and planning, our trusted partner discovered that they had a mere 3-month period to prepare and implement the new communication system that is capable of accommodating over 3,000 users including both employees and contractors, having a very large talk group across the island.

In addition, the system was required to include a broadcast feature for emergency announcements, such as lightning warning broadcasts by authorised personnel to all users. Despite a tight deployment schedule of less than three months, supported by the Motorola Solutions team, this timeline was deemed feasible with confidence.



Enhancing workplace safety with Evolve LTE

Given the high-risk environment and the necessity for intrinsically safe devices for all communication purposes, Motorola Solutions with its partner proposed the Evolve LTE Handheld with WAVE PTX as the favoured solution for the island's workforce and internal contractors due to its dependable and secure communication features.

Evolve LTE device combines the capabilities of an Android device with the ruggedness and reliability of a push-to-talk device across 3G, 4G and Wi-Fi with dual SIM capacity.

This intrinsically safe IP68 device is designed to withstand tough conditions like extreme temperatures, moisture, and vibrations while ensuring the confidentiality of communications through advanced encryption, hence it was deemed as the ideal answer for the critical communication needs of the oil and gas industry.

In the Oil & Gas industries, only authorised personnel are allowed to use a camera while on duty. Motorola Solutions' Evolve LTE Handheld also comes with a feature that allows administrators to activate or deactivate the camera and video functions as necessary, allowing organisations to balance the need for visibility and situational awareness with the need for safety, security and privacy.

Communication hurdles are prevalent among maintenance workers in the process plant, primarily due to the noisy surroundings caused by large-scale equipment, high-pressure systems, and machinery that usually operate during their routine inspections.

The noise levels can soar to 100dB or beyond, creating a formidable barrier for effective communication, hindering the transmission of spoken instructions or alerts. Such conditions frequently lead to communication breakdowns, jeopardising the safety of workers.

Addressing this critical challenge demands audio output devices capable of delivering exceptionally clear and audible sound within these environments.

Motorola Solution's Evolve LTE device, equipped with noise suppression and echo cancellation microphones, emerges as the prime solution tailored for tumultuous settings like oil process plants. Its specialised features effectively mitigate background noise and echo during communication, enabling users to comprehend one another distinctly, even amidst extreme noise levels.

Specifically engineered to sift through unwanted noise and solely capture the user's voice, these microphones ensure the transmission of clear and intelligible communication to the recipient. In industries like oil and gas, where seamless communication is pivotal for safety and productivity, this capability stands as indispensable.

By curtailing noise interference and amplifying voice clarity, the Evolve LTE device averts misunderstandings and also augments response times, fostering heightened efficiency and safety in the workplace.



Evolve and WAVE PTX: unleash the power of secure cloud-based communication

Evolve is specifically designed as the perfect companion to Motorola Solutions' broadband push-to-talk service, such as WAVE PTX. The Evolve LTE handheld was coupled with the WAVE PTX service as the solution to solve the challenges. WAVE PTX is an excellent solution for critical communication due to its robust features and reliable performance. It offers instant and secure push-to-talk communication, ensuring quick and efficient information exchange in critical situations. The service operates across various devices and networks, allowing seamless connectivity and interoperability. WAVE PTX also provides advanced features like priority communications, location tracking, and multimedia sharing, enhancing situational awareness and facilitating effective decision-making.

Motorola Solutions' WAVE PTX is a subscription-based push-to-talk solution that allows organisations to transform their smart devices into powerful collaboration tools without requiring any capital expenses or long-term commitments. With WAVE PTX, businesses can subscribe to the service on a per-user basis, making it a cost-effective solution for teams of all sizes. The service is designed to be scalable and flexible, which means that companies can add or remove users as needed. Additionally, the low-cost subscription model makes it easy for organisations to budget for the service, ensuring that there are no unexpected costs or fees. Overall, WAVE PTX provides a financially sound solution for enterprises that want to enhance their team collaboration and productivity without incurring large upfront expenses.





The extra mile

As of now, more than 1,000 users have been provided with the Evolve LTE Handheld with WAVE PTX, and these include the island's field workers and its contractors. Each Evolve LTE handheld was provided with a quick reference guide, and the Motorola Solutions Team provided training videos to improve user experience and streamline deployment.

Furthermore, aside from offering a 24/7 hotline support, Motorola Solutions' partner also provides daily on-site support by manpower after the deployment. Finally, Motorola Solutions' industry-leading support and service ensure that any issues can be quickly resolved, allowing workers to stay connected and focused on their tasks.

Enabling powerful connections

With WAVE PTX, Evolve LTE device enables the team to connect faster and more efficiently, regardless of the device, network, or location.

A user with the Evolve LTE handheld device in the field can communicate seamlessly with the control room staff operating desktop applications. Teams can be instantly connected across different networks and devices with just the push of a button, facilitating real-time collaboration, enhancing overall team productivity, expanding situational awareness and improving workers safety - and these are critical factors for the Oil & Gas industry. When hardware, software and accessories work effortlessly together, the result is a device that works seamlessly for you.

Our trusted partner boasts nearly three decades of expertise in the realms of security, networking, and communication.

Over the years, Motorola Solutions' partner has remained a vanguard in technological advancements while upholding a wealth of experience in constructing robust network systems for its clientele. Their engineers possess extensive training and expertise, ensuring proficiency in the suite of solutions they provide. Demonstrating unwavering commitment, as evidenced in this particular case with their round-the-clock support, the partner assures customers of steadfast and dependable support in any critical scenario.



For more information, please visit motorolasolutions.com/waveptx



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