

Hytera's PoC Solution Enables Nationwide Communications and Real-Time Tracking of Ready-Mix Concrete Supplies in South Korea



Introduction

South Korea's Dongwon Ready-Mix Concrete supplies concrete to construction sites all over the country from its plants via its fleet of concrete-mixer vehicles. Specific types of concrete are required at particular times on construction sites, so timely deliveries are essential and that can only be ensured via excellent communications between plants, vehicles and sites, along with real-time tracking of deliveries. Dongwon replaced its old analog radio network with Hytera's HyTalk PoC solution and GPS-enabled terminals. This delivers nationwide coverage via public cellular networks and WLAN, which is helping to ensure the timely delivery of concrete and reducing construction site delays.

The Background

Dongwon Ready-Mix Concrete supplies high-quality concrete to major construction sites throughout South Korea. It operates a large-scale network

Project Name

Dongwon Ready-Mix Concrete
PoC Solution

Client Name

Dongwon Ready-Mix Concrete (DWC)

Project Start/End Dates

Feb 2025

Industry

Construction / Logistics

Products/Solutions

HyTalk PoC Platform (Ver 3.2)
PNC380 PoC Handheld Terminals
MNC360 PoC Mobile Terminals
Smart Dispatch Plus
MRPS (Multimedia Recording and Playback System)
MDM Pro (Mobile Device Management)

in which multiple concrete batching plants and hundreds of ready-mix concrete transport vehicles operate simultaneously. The plants manufacture batches of concrete specific to each construction job requirement and deliver it to site at scheduled times. For this reason, real-time communication between sites and safe vehicle operation control are key factors in ensuring both product quality and on-time delivery. However, the company's existing analog two-way radio system had limited coverage and noise issues, which made efficient communication difficult.



The Challenge

The existing UHF analog radio system suffered from dropped calls and noise interference during vehicle movement. Radio communication dead zones existed in many areas such as outside factory premises or in more remote construction sites in mountainous areas.

In addition, it was difficult to manage and track equipment usage history during shift operations, which led to less efficient vehicle operations and a reduction in the quality of safety control. Some sites used mobile phone apps as a temporary means of communication, but this solution had clear limitations in terms of reliability and real-time responsiveness.

All these problems highlighted the need for a new LTE-based radio communication infrastructure capable of providing reliable communications between ready-mix concrete dispatch offices, operations management teams, and concrete delivery drivers out in the field.

The Solution

Hytera provided its 4G LTE-based HyTalk PoC (Push-to-Talk over Cellular) radio communication solution. PoC operates in a similar way to two-way radio networks providing instant PTT voice services including one-to-one and one-to-many calls, but over existing public mobile phone and local WLAN networks.

By deploying a PoC solution, the customer did not need to invest in any expensive new radio infrastructure and gained access to nationwide 4G coverage over South Korea's mobile phone operator networks.

Hytera also supplied approximately 50 PNC380 handheld PoC terminals, which were supplied to the dispatch and management teams, enabling reliable voice communications both indoors and outdoors. Each terminal's audio output level was customized and optimized through on-site testing to achieve the best sound settings.

About 30 MNC360 in-vehicle mobile radios were installed in the vehicles to ensure clear call quality even in the high-noise environment inside the truck cabs. These radios support seamless communication during driving, while the in-built GPS technology is integrated with the Hytera Smart Dispatch Plus system. This enables supervisors to monitor the location of each vehicle in real-time, so they better organise operations and can update construction site managers as to when to expect the ready-mix concrete delivery.

In addition, a multimedia recording and playback system (MRPS) was implemented, enabling managers to immediately review communication issues or on-site incidents during operations. This allows managers to make faster and better-informed decisions and respond more promptly to situations happening in the field.



The Benefits

Nationwide, Flexible Calling with Hytera HyTalk Platform

Unlike the old analog radio system, which suffered from coverage blind spots, Dongwon Ready-Mix Concrete staff can now reliably connect with each other all over South Korea, as long as there is a 4G LTE signal.

More Efficient Operations

Every step of the ready-mix concrete manufacture and delivery process from dispatch instruction to on-site task completion is now seamlessly connected through the LTE-based PoC radio network, thereby significantly improving operational efficiency and safety.

Multi-voice Services

The Hytera HyTalk solution enables instant PTT one-to-many group calls and also one-to-one individual calls. Users can easily switch between the two. The HyTalk platform provides reliable services and supports integrated management, so administrators can remotely control and upgrade radios from anywhere.

Easy-to-Use Technology

Hytera provided the easy-to-use PNC380 radios to operations staff. They quickly grasped how to use the terminals after only a short explanation and demonstration.

Products

- HyTalk PoC Platform (Ver 3.2)
- PNC380 PoC Handheld Terminals
- MNC360 PoC Mobile Terminals
- Smart Dispatch Plus
- MRPS (Multimedia Recording and Playback System)
- MDM Pro (Mobile Device Management)



Rugged and Robust

The PNC380 is also extremely tough, as it meets IP67 and MIL-STD-810G standards to provide stable performance in harsh environments such as rain, dust, extreme temperatures, shock and vibration. The 4,000 mAh Li-ion battery offers over 24 hours of talk and standby time on a 5-5-90 duty cycle, while built-in GPS provides location tracking. Loud, clear audio is ensured thanks to the dual-mic noise reduction technology.

Mobile Radio for In-vehicle Communication

The Hytera MNC360 mobile radios feature an innovative design to provide reliable, loud, clear voice service for various field communication scenarios. The built-in 4-watt speaker comes with distortion suppression, howling suppression and noise cancelling technology, which enables the MNC360 to transmit loud and clear audio even with the window rolled down in construction sites or bustling streets.

Conclusion

Dongwon Ready-Mix Concrete has a nationwide concrete supply system designed to ensure the timely delivery of concrete to construction sites across the country. The company's goal is to contribute to improving construction quality and shortening project timelines, but to do this it needs a highly efficient and reliable communication solution, which it now has in the shape of the Hytera HyTalk PoC platform and radio terminals. The network supports as many users as required, so it is easy to expand as the company grows.

Customer Testimonial

"Previously, calls were frequently disconnected and filled with noise due to distance limitations between vehicles, but with the Hytera LTE radios, communication is possible nationwide without any range restrictions, ensuring uninterrupted connection between the headquarters and field sites even during operation. In addition, even in the high-noise environment of ready-mix trucks, voice is transmitted clearly, greatly reducing communication errors while driving. Thanks to the long-lasting battery that can be used all day on a single charge, there is no need for additional charging during shift work, which is highly satisfying."

—Dongwon Ready-Mix Concrete Dispatch Team



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