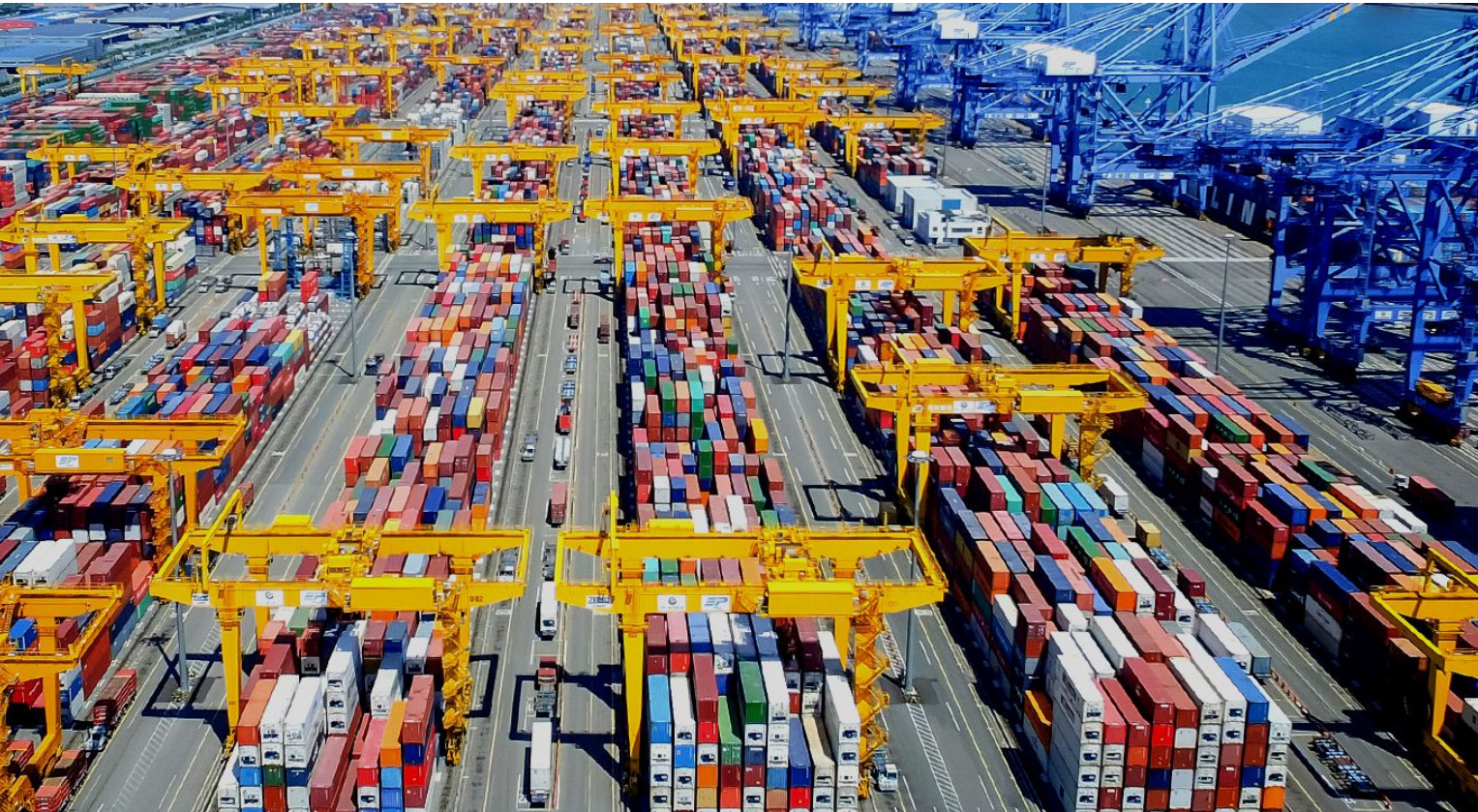


Hytera Customizes PoC Solution to Solve Audio and Connectivity Issues at Busan New Port



Introduction

The Busan New Port Company in South Korea had switched to a PoC system, but quickly discovered that the audio on the PoC terminals supplied by other manufacturers was too low and the connectivity with the server was poor, leading to delays and dropped calls. Hytera was able to solve these problems by customizing the volume controls on its PNC380 PoC portable terminals and by installing MNC360 mobile radios in the port cranes and vehicles. A local server eliminated the delays and dropped calls, while GPS technology allowed managers to locate equipment and personnel in real-time, leading to more robust and efficient operations.

Customer name

Busan New Port (PNC)

Project time

2024

Project Location

Busan, South Korea

Industry

Transportation

Products/Solutions

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



The Background

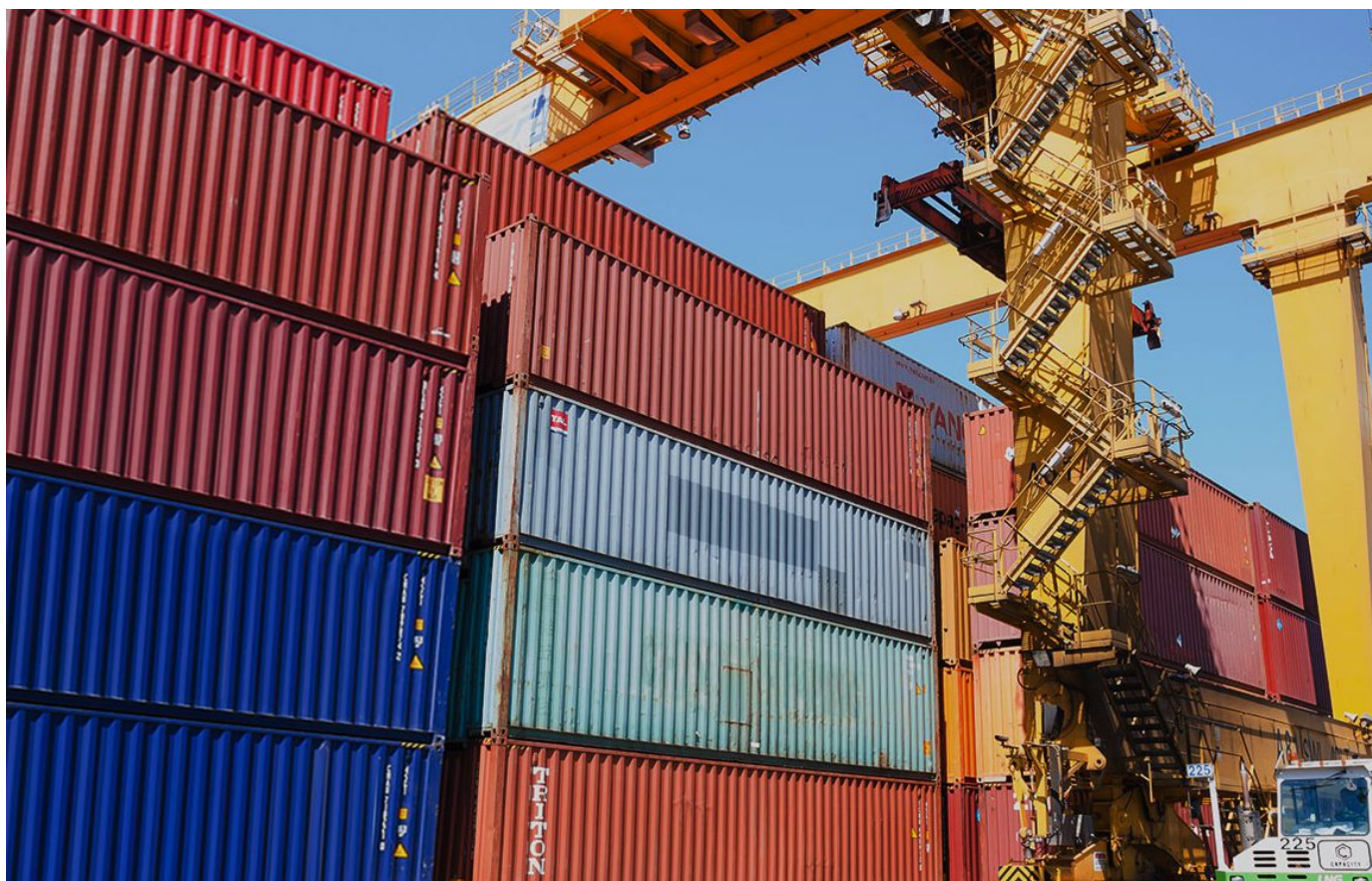
Busan (formerly Pusan) New Port Company (PNC) is a subsidiary of DP World, the Dubai-based multinational logistics and port operator company. PNC operates the largest terminal in the Port of Busan, South Korea, the world's second busiest transshipment port and one of the highest performing ports in Asia. The port provides deep water berths able to accommodate container ships of over 20,000 TEU (twenty-foot equivalent unit). The port has a terminal capacity of 2.6 million TEUs per year with 22 quay cranes, 73 rail-mounted gantry cranes, 154 yard tractors, 12 forklift trucks, 5 reach stacker vehicles and 17 empty handler vehicles.

The Challenge

Robust and reliable radio communications between quay crane and gantry crane operators, vehicle drivers, dockworkers, railway yard workers and port managers are essential if the port is to work safely and efficiently. Various devices and personnel working in the port use equipment with connectivity supplied by South Korean mobile network operator KT's private P-LTE (4G-only) communication service.

PNC had initially replaced its original TETRA two-way radio system with a 4G Push-to-Talk over Cellular (PoC) broadband system. However, as soon as the new solution was implemented, issues were raised by end users such as shipyard and rail transport operators, quay crane operators, yard tractors, reach stackers, and empty handlers, regarding equipment noise affecting the volume of reception.

In the yard, frequent signal drops occurred during movement of vehicles and containers. Additionally, because the server was overseas, users were experiencing slow speeds and frequent radio outages. As a result, an urgent need arose for a PoC solution capable of resolving these issues.



The Solution

Hytera has built up considerable experience over the years in providing wireless communications for transportation using its PoC 4G LTE communication technologies and solutions. Hytera supplied 350 PNC380 PoC handheld terminals and 250 MNC360 PoC mobile terminals for the vehicles and cranes.

Hytera overcame the low receive volume experienced by port staff on the PoC devices supplied by other manufacturers by customizing multiple volume settings for the PNC380. This allows port staff to test and select the optimal volume required for their needs. The solution was also successfully tested on-site, confirming seamless handover was achieved without any interruptions or dropped calls.

To compensate for the high-noise environments, MNC360 mobile terminals were installed in vehicles such as yard cranes, trucks and other heavy equipment to ensure smooth communication.

The GPS feature of each device was utilized to display locations of equipment, vehicles and personnel on the Hytera Smart Dispatch Plus platform to enable real-time tracking of equipment. To address any issues that arose during use, a Hytera Multimedia Recording and Playback System (MRPS) was set up to allow for issue verification.

Products

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



The Benefits

Nationwide, Flexible Calling

PoC operates over existing mobile phone networks, so as long as there is a private LTE (4G) signal, users can connect all over South Korea. It is a cost-effective solution as PNC does not have to invest in any new radio infrastructure.

Improved Network Management

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

More Efficient Port Operations

The Hytera PoC solution facilitates better decision-making, as managers can see on the dispatch display screens where all equipment and personnel are in real-time, which enables them to quickly communicate with the most relevant staff and address tasks or resolve issues efficiently.

Easy-to-Use Radios

The PNC380 radios are easy to set up and use for dockworkers and port operations staff. Users were quickly able to grasp how to use the terminals after only a short explanation and demonstration.

Rugged and Robust Portable Terminals

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.

Excellent In-vehicle Communications

The Hytera MNC360 mobile PoC radios provide reliable, loud and clear voice services for crane operators and port vehicles as they move around. The simple-to-use design enables ease of radio installation, removal, and operation. Versatile accessories are available to meet the requirements of different work environments.

Local Server

The server for the Hytera PoC system is based locally in Korea, which guarantees real-time communications with no delays or dropped calls.



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