

Hytera PoC Solution Supports Seamless Communications Along West Java Toll Road



Introduction

The concession managers of the Cileunyi–Sumedang–Dawuan Toll Road on the island of Java in Indonesia needed a reliable and cost-effective radio solution to enable staff to communicate along the length of the highway. Hytera's local partner provided a Hytera PoC solution including PNC380 handheld and MNC360 mobile radio terminals. The toll road staff can now communicate seamlessly with each other over existing mobile network operator 2G/3G/4G cellular and Wi-Fi infrastructure. The solution operates seamlessly even in heavy rain and inside the toll road tunnel section.

The Background

The Cileunyi–Sumedang–Dawuan (CISUMDAWU) Toll Road is a 62.6 km highway connecting the areas of Bandung, Sumedang and Majalengka in West Java, Indonesia. The highway, which opened on 11 July 2023, is part of the toll road that connects the two major cities of Bandung City and Cirebon in West Java to Surabaya in East Java. It consists of six sections. Due to the construction

Customer Name

PT Citra Karya Jabar Tol,
PT Citra Persada Infrastruktur

Project time

2024

Industry

Highways

Products/Solutions

PNC380 Handheld PoC Radios
MNC360 Mobile PoC Radios

difficulties, the Indonesian government financed Sections I and II, which includes a 472 metre-long tunnel. Sections III to VI were constructed by Toll Road Enterprises (BUJT), a consortium of Indonesian companies. The toll road will be connected to the Cikopo-Palimanan Toll Road, which is part of the 1,167 km Trans-Java Toll Road.



The Challenge

A cost-effective solution was required, and preferably one without the need to acquire radio frequency licenses or to invest in private radio infrastructure such as towers, repeaters and antennas.

Hytera suggested using a Push-to-Talk over Cellular (PoC) solution. PoC provides all the advantages of traditional two-way radio technology, including instant PTT one-to-many, one-to-one, and emergency calling, but over existing mobile phone operator 2G/3G/4G cellular infrastructure. All that is required is a PoC management platform, mobile SIM cards and subscriptions, and PoC terminals. Hytera's partner offered to conduct a proof of concept trial using the Hytera PNC380 handheld PoC terminal.

The Solution

The proof of concept trial with the PNC380 went very well and the device even continued to operate smoothly during a heavy rain storm. In addition, the signal transmit quality proved to be very stable in the tunnel sections. Tests of the PNC380 inside a car also provided a good result, but an even better performance was achieved by deploying an MNC360 mobile PoC terminal with two external antennas in a vehicle.

Products

- PNC380 Handheld PoC Radios
- MNC360 Mobile PoC Radios



The Benefits

Wide Area Coverage

The management and staff of Toll CISUMDAWU can communicate seamlessly with each other along the length of the toll road using the existing nationwide cellular infrastructure of the Indonesian mobile phone operators. The management can efficiently organise day-to-day operations and quickly coordinate a response to any traffic accident or emergency situation.

Cost-effective Solution

The managers of Toll CISUMDAWU did not need to apply and pay for any new radio frequency licenses or invest in new radio infrastructure. The signal from the cellular operators remains very stable even during heavy rain and there are no coverage blank spots, even within the tunnel section.

Multiple Talk Groups

Unlike traditional two-way radio systems where the number of talk groups is limited by the channel availability, PoC supports as many talk groups as required.

Rugged Radio Terminal

The Hytera PNC380 is extremely durable as it is 1P67-rated against dust and water ingress, and can operate in heavy rain. It also meets the MIL-STD-810G standard against shock, vibration and drops (up to a 1.5m drop).

Worker Safety

The dedicated orange emergency button on the top of the radio enables staff to send an emergency call to a dispatcher or supervisor in case of an emergency.

Video Feature

The PNC380 has a 5MP rear camera, which allows the user to transmit videos from the field to the dispatcher or supervisor in real time over 4G network. This helps improve situational awareness and facilitates decision-making in the event of a road accident or damage to the road, for example.

Location Services

The PNC380 provides positioning services by using GPS, GLONASS and BDS in combination, together with the assisted GPS technology, so supervisors can see where staff are in real time. This aids the dispatch of the nearest and most relevant staff to fulfil a particular task.

Loud, Clear Audio

The PNC380 features dual-mic noise reduction technology, so the radio can always pick up the right voice from a noisy background. The advanced acoustics design substantially elevates sound loudness and sharpness.



Hytera Communications Corporation Limited

Stock Code: 002583.SZ

Address: Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, P.R.C

Tel: +86-755-2697 2999 Fax: +86-755-8613 7139 Post: 518057

Http: //www.hytera.com marketing@hytera.com