

Hytera Ensures Seamless Operations at New Gwadar Airport in Pakistan by Deploying TETRA and DMR Networks



Introduction

The recently opened New Gwadar International Airport in Pakistan needed a highly reliable radio communication system to ensure efficient, safe and secure operations. Hytera supplied a TETRA two-way radio system with a SmartOne dispatch system, NMS and TETRA PT580H Plus handheld radios for use by almost all airport departments and job roles. Hytera also supplied a separate DMR system and HP78X handheld radios for the airport firefighters. With high levels of redundancy built in, the radio systems offer mission critical levels of availability and reliability, while enabling seamless communications between departments to deliver efficient operations.

The Background

The New Gwadar International Airport (NGIA) in Pakistan was built to replace the original Gwadar International Airport and was opened on 14 October 2024. The Pakistan Civil Aviation Authority (PCAA) is responsible for overseeing its management and operation, but ownership is shared between Pakistan, Oman, and China. The airport occupies 4,300 acres (17 km²) of land

Customer name

New Gwadar International Airport
(NGIT)

Project time

2024

Industry

Transportation: Airports

Products/Solutions

TETRA DIB-R5 Outdoor Base Station
TETRA PT580H Plus Hand Portable Radios
TETRA MT680 Plus Mobile Radios
DMR HR106X Repeater
DMR HP78X Hand Portable Radios
SmartOne Dispatch System

and features a 14,300 square metre terminal building and a 3,658 metre-long runway. It is located in Gurandani, 26 km north-east of the existing airport on the south-western Arabian Sea coast of Balochistan Province.



The Challenge

Reliable wireless communications are absolutely critical to ensure airport operations run smoothly, safely and securely. The radio system needs to provide comprehensive coverage across the entire airport footprint, airside and landside, within terminal and cargo buildings, and any underground areas.

The radio system needs to have the capacity to support potentially hundreds of users with many different talk groups such as airport management, airline staff, check-in staff, building and airside facilities staff, baggage handlers, security guards, cargo handlers, aircraft maintenance, fueling and resupply crews and so on. Transmissions of voice, text and data need to be secure.

The Solution

NGIA decided to deploy two separate radio systems. The main network is based on the mission critical TETRA two-way radio standard. Hytera supplied its TETRA DIB-R5 base stations with a SmartOne dispatch system and radio terminals including its TETRA PT580H Plus handheld radios, and mobile radios, which will be used by the operations staff of the airport.

TETRA is a trunked radio network capable of supporting hundreds of users simultaneously along with many different talk groups. The separate talk groups enable different departments to restrict communications just to departmental staff, but to also communicate with other departments whenever necessary.

The Hytera dispatch system enables supervisors to oversee complex airport operations and to dispatch the right staff to carry out day-to-day tasks efficiently, resolve any issues, or respond quickly to any emergency. The Hytera network management system (NMS) allows network supervisors to monitor and administer the network, troubleshoot any issues, and to manage and update the radio fleet.

The second radio network is based on the Digital Mobile Radio (DMR) standard and is for use by the airport's firefighters. Hytera supplied its DMR HR106X repeaters and DMR HP78X handheld radios. It is not uncommon for firefighters around the world to use their own radio system on the fireground or accident site. Usually working in direct mode, this keeps transmissions localised. Separate channels can be assigned to different work crews such as smoke divers and the like.



The Benefits

Efficient Airport Operations

The Hytera TETRA solution is fully IP-based, including call processing, switching functions and connections to base stations. The dispatch system, network management system and two-way radios ensure airport managers and staff can all communicate with each other and work more efficiently to keep the complex task of running an airport on track.

High Levels of Redundancy

The solution provides mission critical levels of redundancy covering the controller, carriers, MCCH (MBMS control channel) and power supply to ensure the necessary network availability.

Private Network for Firefighters

The Hytera DMR repeaters and handheld radios ensure airport firefighters can rely on their own private radio network, so they are not affected by any possible capacity issues or failures on the main network. This way they can concentrate on the task in hand.

Comprehensive Dispatching Solution

SmartOne offers powerful dispatching functions, such as voice calls, GPS positioning services, messaging functions and voice recording.

Products

- TETRA DIB-R5 Outdoor Base Station
- TETRA PT580H Plus Hand Portable Radios
- TETRA MT680 Plus Mobile Radios
- DMR HR106X Repeater
- DMR HP78X Hand Portable Radios
- SmartOne Dispatch System



The Benefits

Worker Safety

The TETRA PT580H Plus radios come with worker safety features including emergency, lone worker and man down alarms, where the radio will generate an alarm if the worker does not respond to a request or if the radio does not move or is tilted over the programmed angle.

Loud, Clear Audio

Both the TETRA and the DMR radios offer loud, clear audio thanks to Hytera noise cancelling technology, which ensures workers can hear transmissions even in the very loud environment of an airport.

Tough and Rugged Terminals

The TETRA PT580H Plus radio is IP67 rated for dust and water ingress protection, while the HP78X is IP68 rated. Both devices offer MIL-STD-810G standard levels of protection against drops, shocks and vibration, so they are extremely tough and durable.



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