

## MTR Corporation

### Surveillance Solution for Critical Infrastructure

## Overview

Railway is the backbone of a city's public transit system, carrying citizens around for daily commutes. With an average weekday patronage of 5.5 million passengers, the MTR Corporation in Hong Kong is world-renowned for its commitment to railway operation safety, reliability, customer service and cost efficiency.

In October 2015, the service of MTR Airport Express suspended after Kap Shui Mun Bridge connecting Ma Wan and Lantau Island were struck by a vessel, triggering the ship impact alarms of the bridge. This incident prompted MTR to consider building a video surveillance network on Tsing Lai Bridge to oversee the vessels traveling along the Rambler Channel, to ensure all passing vessels are within the safe height limit.

With Anywhere Networks' Intelligent Connectivity Anywhere® technology, MTR achieves a rapid deployment of a highly reliable and secured wireless surveillance system that provides the abundant throughput for the demanding numbers of IP cameras. The flexibility of Anywhere Nodes overcomes the physical constraint of the bridge structures.

### Customer

MTR Corporation



### Deployment Location

Hong Kong

### Application

HD Surveillance for Critical Infrastructure

### Product Deployed

Anywhere Network Node  
X20 Series

### Competition

Conventional Point-to-multi-point Wireless System

## The Challenge

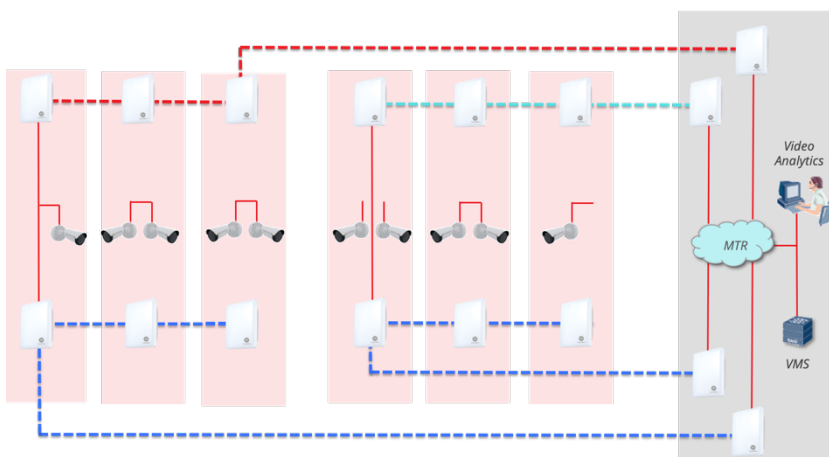
- High throughput requirements—support up to 25 IP cameras, totally up to 800 Mbps data rate
- High interference between congested parallel signal paths—all bridge pillars & remote-control center lie in a straight line
- The entire system requires full hardware redundancy—for both mesh nodes and data switches
- Fast auto-recovery time for critical infrastructure—less than 10 seconds
- 6 kV surge protection is required for the wireless equipment

## The Solution

- A dual-ring-4-hop layer-2 wireless mesh network is built using totally 16 units of X20 A-NN (formerly known as MeshRanger)
- Each mesh ring contains 5 units of X20 supporting ring redundancy
- One extra X20 is added at each of the six-pillar sited to support node redundancy, both X20 at a pillar site are connected using a network switch
- Various IP cameras for vessels travelling and bridge bearing monitoring are connected to the respective network switch

## The Benefit

- X20 delivers an impressive throughput and stability performance, despite the congested interfering environment
- The dual rings support 400 Mbps at 20 MHz channel bandwidth. 800 Mbps data rate is attained (40 MHz channel)
- Strong signal strength of -47 dBm at a transmit power of 5 dBm
- Negligible latency and packet loss



*"The conventional point-to-multipoint wireless system requires a master site and makes radio planning very difficult. It also poses the threat of single-point-of-failure.*

*Anywhere Networks' ICA technology overcomes this problem entirely with the robust ring design and self-healing redundancy."*

## Anywhere Networks

**Anywhere Networks** is a leading Wireless Mesh Technology company offering scalable, high-capacity and secure network solutions and services for Smart and Safer City Applications with a focus on public safety, Internet of Things (IoT) connectivity, video surveillance, transportation networks and industrial environments for provinces, governments, industrial and enterprises. **Anywhere Network Node A-NN** is our flagship product line of ultra-high performance industrial-grade wireless products, its full mesh capabilities designed for flexible and expandable deployments regardless of physical constraints. The entire network is managed by **Anywhere Node Manager A-NM**, a Provisioning and Centralised Network Management Software and Platform of all-in-one dashboard for configuring, monitoring, and managing AN network and devices.