MTR Corporation

Intelligent Connectivity Anywhere® and
Surveillance Solution for Critical Infrastructure

Anywhere
INTELLIGENT CONNECTIVITY

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

Products Deployed

A-NN X20
(Formerly known as MeshRanger)

Competition

Conventional point-to-multi-point wireless system

Success Story

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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 and the 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 A-NN X20 (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 andbridge 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 when using 40 MHz channel
- Strong Signal strength of -47 dBm at a transmit power of 5 dBm
- Negligible latency and packet loss

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The conventional point-to-multi-point 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.
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Surveillance camera managing incoming sea traffic for safety height limit
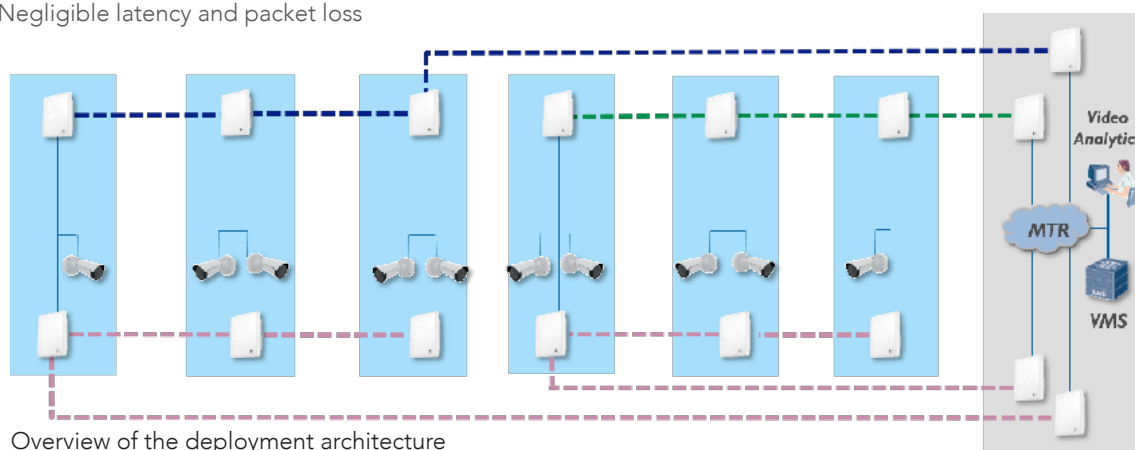
Overview of the deployment architecture

About Anywhere Networks

Anywhere Networks (AN) is a leading wireless mesh technology company offering flexible and expandable network solutions for bandwidth-demanding SmartCity / Safe City, intelligent transport, IOT, industrial and mission-critical infrastructure applications.

Anywhere Networks' Intelligent Connectivity Anywhere (ICA) technology revolutionizes the way multiple devices are connected. Our flagship Anywhere Network Node series eliminates the constraints of extensive fiber optic cabling to enable an easy and rapid deployment for IP cameras, Sensors and IoT devices. AN's ICA -based network is simple to setup using fiber-like ring or Daisy-Chain topology. This flexible mesh architecture provides high bandwidth, low latency and self-healing connections to meet the most demanding connectivity requirements.

Visit www.anywherenetworks.com or contact **sales@anywherenetworks.com** for more details.