



A Mission Critical Wide Area Wireless Network by ANLX

Introduction

The Royal International Air Tattoo (RIAT) is an annual event held at RAF Fairford in Wiltshire, over a three day period each July. The show attracts 140,000 spectators who watch breathtaking aerobatic displays from fast jets, transport aircraft, helicopters and classic warbirds.

The 2014 Air Tattoo featured 240 aircraft from 31 air arms representing 25 countries, including two classic Cold War ground-attack strike aircraft, the Sukhoi Su-22s from Poland and Seven aerobatic display teams who flew in to join the Red Arrows' 50th display season celebrations.

A core team of 40 work year round on the event, and this number increases to 2500 during the Tattoo. ANLX provides year round core network and IT services for The Royal Air Force Charitable Trust Enterprises, who stage the Air Tattoo, including the network connectivity to the Internet via twin, 100Mb diversely routed Fibre cables. During the Air Tattoo, the



core network expands to provide connectivity for an additional 100 fixed computers and up to 10,000 WiFi users. However, the real challenge is to extend the core network using wireless links, to enable mission critical coverage to key remote offices, including the Control Tower, Flight Centre, Security, emergency response units and a field hospital as well as the entrance ticket scanners, all of which are located around the 1170 acre site.

The ANLX Solution – Wired & Wireless Networking

ANLX provide external connectivity to the RIAT network via twin, 100Mb diversely routed Fibre links to create a secure, resilient Local Area Network (LAN). The LAN is then extended during the Air Tattoo to include a Wireless Local Area Network (WLAN) using an encrypted 300Mb wireless ring around the Air Base with nodes at key points to enable access to the Ring from WiFi hot spots or core network extensions.

The wireless ring uses Point to Point (P2P) infrastructure by Sub10 and Cambium and operates in the 5.8 GHz unlicensed spectrum, to deliver a self-healing 300Mb network, with 25 dBm of transmit power with up to 168 dB system gain using 22 dBi antennas.

WiFi access was enabled for Staff, exhibitors & visitors through the system that is capable of handling 2,500 concurrent sessions.

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Application Hosting: In addition to the onsite connectivity and associated services ANLX provides the hosted environment for the RIAT and charitable trusts' websites, which are used for online ticket sales, portals for volunteers, visiting air crews and contractors as well as being the primary point for Air Show information & status updates. These websites and portals are mission critical and not only need to be online 24/7, they must scale to handle several seasonal massive increases in demand on bandwidth.



Disaster Recovery: As well as maintaining onsite infrastructure, ANLX has designed and implemented a multi-tier backup and DR system, that uses both onsite and near site locations and includes a complete replica of all critical systems to enable near real-time total system rebuild and recovery.

Business Benefits: The flexibility and scalability of the ANLX LAN & WLAN solution means that RIAT can scale up and down rapidly with the knowledge that the network will be reliable and secure.



Steve Gunyon, one of RIAT and RAFCTE's Directors comments. "A Secure, reliable network is a key requirement for RIAT throughout the year, and the ability to increase the size of our network for just one month of the year, not only saves us money, but also enables us to manage a very intense, fast moving and complex situation efficiently. The successful delivery of this network is due to the knowledge, experience and sheer graft that the team from ANLX bring to the project each year.

Technical Summary: The resilient backhaul network was built using Cambium Networks' Point-to-Point (PTP) radio solutions are based on breakthrough Orthogonal Frequency Division Multiplexing (OFDM) technology, Cambium Networks' PTP solutions deliver exceptional near-Line-of-Sight (nLOS) and Non-Line-of-Sight (NLOS) coverage in locations where foliage, tall buildings, or other obstructions limit wireless broadband access. Local WiFi hot spots were linked off of the main backhaul network to provide segregated coverage for the general public, exhibitors and staff.

For more information on ANLX's Wired or Wireless connectivity solutions, email sales@anlx.com or call us on 020 7127 0500

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