



Motorola's Broadband Wireless Solution Propels Communications at World's Largest Military Air Show to New Heights



Organising Communications for the World's Largest Military Air Show

Launched in 1971, The Royal International Air Tattoo (RIAT) is the world's largest military air show, according to Guinness World Records. The air show currently takes place at the Royal Air Force (RAF) Fairford in Gloucestershire, United Kingdom and is sponsored by the Royal Air Force Charitable Trust Enterprises to support the charity's two key aims: to back the RAF Family of Charities and to promote RAF recruiting and efficiency.



To kick off this year's event, 90 aircraft flew over RAF Fairford on July 11 to mark the 90th anniversary of the Air Force. The Queen was there to celebrate and present new Colours – or ceremonial flags – to the RAF at a parade comprising of more than 800 RAF personnel and attended by 5,000 invited guests including some 25 chiefs of air arm from around the world who were attending RIAT over the weekend. Unfortunately, although the weather remained beautiful for this portion of the event, inclement weather caused the cancellation of the rest of the Royal International Air Tattoo event, which was scheduled for July 12-13, 2008.

Needed: High-Capacity Communications to Ensure Air Show Operations Remain Non-Turbulent

Effective, widespread communications are critical to supporting an air show as large as the RIAT. But the air show's Fairford location meant that the Royal Air Force Charitable Trust Enterprises faced a big challenge: The communications network supporting the air show had to reach across the entire airfield grounds, from the air show offices and the emergency operations center in the north to the actual air show operations in the south. And the only communications system available was an outdated, low-bandwidth copper pair network that did not reach across the entire airfield grounds.

There was another complication as well. Given that the Fairford air base is actually a *U.S. Air Force (USAF)* facility, Royal Air Force Charitable Trust Enterprises was not allowed to install any permanent communications system that it would control, such as a fiber-based communications system, for security reasons. And it was unable to use any of the existing USAF.

Organisation name

The Royal Air Force Charitable Trust Enterprises

Industry name

Charity Organisation

Product

- Motorola 5.4 GHz Canopy Point-to-Multipoint Equipment
- Motorola 4.5 GHz Point-to-Point Backhaul Radio Links

Solution Features

- Broadband Internet Connectivity
- Aviation Coordination
- Emergency Command Center communications
- Hospitality access to broadband

Benefits

- Delivers high-performance widespread coverage
- Supports high-bandwidth communications
- Highly reliable, easy-to-install solution

“The bandwidth and availability requirements of the Royal International Air Tattoo have dramatically increased, and I don’t believe we could have supported the communications needed without the Motorola Canopy equipment. The system worked brilliantly and carried an amazing amount of communications traffic while remaining unbelievably reliable.”

**Lyn Sherburne, Communications & Information Systems Manager,
The Royal Air Force Charitable Trust Enterprises**

Motorola’s High-Capacity Wireless Broadband Communication System Enables Smooth Air Show Operations

The Royal Air Force Charitable Trust Enterprises needed a high-capacity temporary communications system that could cover a large area to support its biggest yearly event, a military air show. The organization found the ideal solution in Motorola’s wireless broadband suite of solutions. The Motorola network hosted a record number of mission-critical applications for the RIAT. More than 160 work stations were connected to the network, which supported 13 different mission critical applications in 15 geographically separate locations. Applications ranged from security communications and video surveillance streaming, and the option for point-of-sale operations.

Motorola’s Wireless Broadband Delivered Smooth Operations for RIAT Air Show

The Royal Air Force Charitable Trust Enterprises needed a communications solution that could support robust yet temporary communications. So it turned to Motorola’s Point-to-Point and Point-to-Multipoint Canopy® solutions.

To support communications for the RIAT, a Canopy 400 was installed at 5.4 GHz. The system supported nine subscriber modules and three access points. Two pairs of Point-to-Point 4.5 GHz backhaul links connected the show office to a 60-meter high mast and were used to transfer communications traffic across the airfield grounds. When fully installed, the network covered significant areas of the airfield grounds – which spans around 10km².

Installation for the system was very easy, according to show organizers. Setting up the links on the control towers took only a few hours, and installing the backhaul links took just one day.

Enabling Sky-High Numbers of Applications, from Flight Planning and Security to Point-of-Sale

The Motorola wireless broadband network hosted a record number of mission-critical applications for the RIAT. More than 160 work stations were connected to the network, which supported 13 different mission critical applications in 15 geographically separate locations – all to support communications up to and during the event. Applications ranged from security communications and fast intranet access – which connected the RIAT control center to emergency personnel such as fire, medical and security and allowed the RIAT emergency personnel in the control center to be in constant data access.

The network was robust enough to support a last-minute change in the communications plan. Just a few weeks prior to the RIAT, the National Air Traffic Service found that it could not support its military flight planning system (MEAMS) using a fiber-based communications system, as it had planned to do. So the National Air Traffic Service asked the Royal Air Force Charitable Trust Enterprises if it could use the Canopy network to access an Internet-based flight planning system. It would then use that system to coordinate all of the landing and take-off of the military planes taking part in the air show.

Knowing that the Canopy network was up to the challenge and could easily support the extra bandwidth, the Royal Air Force Charitable Trust Enterprises agreed to allow the National Air Traffic Service to use the Canopy network. The result: The Canopy system still supported a long list of other applications while also enabling more than 300 aircraft to plan their flight routing across the globe on departure.

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