

Underpinning operations at Australia's largest Air Show



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BACKGROUND

The Australian International Aerospace and Defence Exposition and Air Show held every two years at Avalon Airport in Melbourne, Victoria, is the largest civil and military airshow in the Australian calendar. First held in 1988 to mark the Australian Bicentenary, and moved to Avalon Airport in 1992, it is organised by the not-for-profit organisation Aerospace Australia Limited. The airshow has grown rapidly over recent years and now features a strong international military presence including aircraft from the Royal Australian Air Force, United States Navy and the United States Air Force. Representatives from other air arms have also appeared at the air show on many occasions, including aircraft from the Royal Air Force, Japan Air Self-Defence Force, Republic of Singapore Air Force and many others.

The air show takes place every two years, and is attended by up to 200,000 people, with three full days of industry and military attendance only, followed by three days of public attendance. Simoco Wireless Solutions has been providing the communications infrastructure for the Avalon Air Show since 2013, having initially won the work through a public tender process.

Robust and secure radio communications

Public safety has to be paramount at large events like the Avalon airshow, and a strong communications system is key to being able to provide a safe environment. Though there is a very strong military security presence at the airshow, who are responsible for the security of their equipment, planes and other vehicles, the organisers must keep the safety of their attendees in the front of their minds at all times. Reliable voice communications also play a vital part in ensuring all operations and logistics associated with the event run smoothly.

One of the great challenges of providing a communications system for the Avalon Air Show is the breadth of users that the network must cover. Event organisers are not the only ones who use the supplied radio network. Members of the emergency services must also be furnished with communications devices and the network covers a major command and control centre, staffed with police, ambulance services, fire fighters, and military and federal police. All international military delegations must also be given radio devices incorporated into the network, allowing full ease of communication between everyone involved.

The organisers of the airshow provide a shuttle bus service, consisting of 40-50 buses, travelling to distances of up to 20km outside of the air show site. The ideal radio network would be strong and scalable enough to provide coverage to those shuttle buses even at a distance of 20km from the site.

A Scalable user network with Simoco Xd

Simoco Wireless Solutions provided Aerospace Australia Ltd with the company's Simoco Xd network – a DMR Tier III trunked system that provides resilience, scalability and secure communications across the campus-style geography of the show. The network consisted of the following devices:

- 425 x SDP660 Portable Radios
- 5 x SDM630 Desktop Bases
- 12 x SDB680 Repeaters

In addition, the Simoco team also provided a range of air band radios to complement the private DMR network. Air band radio is a group of frequencies on the VHF spectrum, designated specifically for civil aviation. The following equipment was also supplied to aid ground control teams when coordinating plane movements:

- 2 x VHF Airband Desktop Bases
- 8 x VHF Airband Vehicle Radios
- 20 x VHF Airband Portable Radios & Scanners

The Simoco network simultaneously runs 25 independent and disparate radio talkgroups, with volunteers and staff members using the network from 5am until 2am the next morning. During this time the network will facilitate between 500 and 600 conversations every hour, and over the 9 main days of the 2017 event in excess of 37,000 calls were made.

The network operates over a frequency specifically licenced by Simoco for the Avalon Airshow, and this, coupled with the inherent encryption of the DMR network, ensures all voice communication remain private and secure.

For 11 days, covering the set up and the running of the event, Simoco Wireless Solutions provides a managed service for the network, monitoring each device for faults or misuse. From the network's command centre engineers can block specific devices if needed, this preventing the network becoming locked up. The radio management desk was manned by three operatives from 7am to 10pm every day, anticipating and solving potential problems before they became an issue.

Advanced functionality with feature-rich radio

Simoco Wireless Solutions have provided a network to Aerospace Australia Ltd that is secure, private, scalable and resilient. This has allowed them to run a world class event, bringing together international groups from both the military and civil industries, without having to be concerned about the resilience of their voice communications infrastructure.

After the tendered period of three air shows over six years, Aerospace Australia Limited has extended the contract with Simoco for a further four events. Upcoming events are set to see Simoco explore ways of further improving the network by taking advantage of the feature rich nature of Digital Mobile Radio technology. This will include exploring the use of advanced applications such as GPS tracking and geo-tagging functionality, which could be used by managers to track the locations of key mobile assets, such as vehicles, without needing to speak regularly to drivers to determine their locations.



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