

Boeing Defence Australia
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Network & Space Systems - Australia



High Frequency Modernisation Project

Description and Purpose:

The High Frequency Modernisation Project (HFMOD) is providing the Australian Defence Force (ADF) with a world leading Modernised High Frequency Communication System (MHFCS) for the transmission of voice, data, email, and facsimiles.

Customer(s):

Boeing Defence Australia is contracted by the Commonwealth of Australia to deliver the MHFCS system to the ADF. The MHFCS consists of two phases identified as the core system and the final system.

The core system, delivered in 2004, replaced three ageing HF communications systems used by the Australian Army, Royal Australian Navy and Royal Australian Air Force, with a single integrated system consisting four HF radio stations and two purpose-built control centres.

The final system, which was introduced into service with the ADF on 24 Sept. 2009, provides greater levels of automation, performance and capability for ADF users. It includes a back-up network management facility in Canberra, Australian Capital Territory, and two Generic Mobiles Upgrade Systems, including one for air platforms completed in March 2009 and another for land and sea platforms completed in June 2009. Final system acceptance by the Commonwealth of Australia is expected in March 2010.

General Characteristics:

The MHFCS has four radio stations, called nodes, in Australia located at:

- North West Cape, West Australia
- Darwin, Northern Territory
- Townsville, Queensland
- Riverina region, New South Wales.

These are connected to two purpose-built control centres (primary and backup) in Canberra, Australian Capital Territory. Redundancy is built into the MHFCS to allow it to provide the required level of service in the event that one or more stations or control centres are not operational.

The MHFCS support multiple application protocols and waveforms over High Frequency voice and data links:

Circuit Management	Voice	Data	Waveforms
<ul style="list-style-type: none">• Legacy (Manual)• Automatic Link Establishment (ALE)• Fully Automatic	<ul style="list-style-type: none">• Secure• Non-Secure	<ul style="list-style-type: none">• Formal Messaging<ul style="list-style-type: none">- ACP-126- ACP-127- ACP-128- DOI/103• Email<ul style="list-style-type: none">- SMTP• Fax• HTTP	<ul style="list-style-type: none">• MIL-STD-188-110A• MIL-STD-188-110B• ALE iaw MIL-STD-188-141A• FSK

The Final MHFCS provides multi-level secure direct end-user to end-user communications for both voice and data without operator intervention. The MHFCS architecture uses control and access channels separated from traffic channels to make highly efficient use of radio assets. Fully automated frequency management and asset selection, combined with centralised control and management of the system significantly reduces staffing required to support traffic compared to traditional HF communication systems.

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