



International Civil Aviation Organization

**Eight Meeting of the Communications/Navigation/Surveillance and
Meteorology Sub-Group (CNS/MET SG/8) of APANPIRG**

Bangkok, Thailand, 12-16 July 2004

Agenda Item 7: Aeronautical electromagnetic spectrum utilization:

2) review preparations for WRC-2007

**PREPARATIONS FOR WORLD RADIOCOMMUNICATION CONFERENCE 2007
(WRC-2007) BY AUSTRALIAN AVIATION**

(Presented by Australia)

SUMMARY

This paper outlines the preparations under way in Australia for the World Radiocommunications Conference in 2007 (WRC-2007). It summarizes the preliminary Australian views adopted on particular aviation spectrum bands which are on the agenda for this WRC-2007 and suggests actions that could be taken by States within the Asia Pacific region to strengthen support for aviation spectrum requirements.

1. INTRODUCTION

1.1 The agenda for WRC-2007 proposed at WRC-2003 and approved by the Council of the International Telecommunication Union (ITU) in June 2004 is published in the ITU Resolution 802. The agenda contains at least 11 items of interest to aviation with 3 directly affecting aviation spectrum.

1.2 A national committee organised by the Australian Communications Authority (ACA) and formed by representatives from the public and private sectors, with strong representation from the telecommunications and broadcasting industries, is tasked with the development of Australian proposals and positions for WRC-2007. Meetings of this committee have begun and prepared preliminary views (see shaded areas in Section 2). These meetings are generally timed to fit in with established programmes for ITU Study Group meetings and meetings of the Asia Pacific Telecommunity Group for WRC preparation (APG).

1.3 The progress of studies within the ITU, ICAO, CEPT¹, CITEL² and in other organisations such as Eurocontrol and the FAA are closely followed and interim positions on WRC-2007 aviation issues are developed as appropriate. These positions are further reviewed and refined following international meetings such as the APG where Australia seeks to align as far as possible with regional administrations in order to gain leverage at the WRC through common proposals. Australia is currently preparing for the ITU-R SCRPM³ (21-27 October 2004) and APT APG2007-2 (expected to be 6-10 December 2004) meetings.

¹ European Conference of Postal and Telecommunications Administrations - CEPT

² Inter-American Telecommunication Commission (CITEL)

³ Special Committee on Regulatory and Procedural Matters.

2. **WRC-2007 AGENDA ITEMS WITH SIGNIFICANT POTENTIAL TO AFFECT AUSTRALIAN CIVIL AVIATION**

2.1 Upgrading the radiolocation service to primary allocation in the bands 9000-9200 MHz and 9300-9500 MHz and extending by up to 200 MHz the existing primary allocations to the Earth exploration-satellite service (active) and the space research service (active) in the band 9500-9800 MHz (AI 1.3)

The band 9000-9500 MHz is used internationally for aeronautical radionavigation including precision approach radar, airport surface detection equipment (ASDE) and airborne weather radar. It is also extensively used for defence (radiolocation) & maritime (radionavigation) radars.

Australia aviation makes use of this band for Surface Movement Radar (SMR) which is critical to airport operation during poor weather operation. RPT aircraft also use this band for airborne weather radar (AWR).

Australian Position: Australia supports the upgrading of the radiolocation service to primary status in the bands 9 000-9 200 MHz and 9 300-9 500 MHz only on the express condition that no harmful interference be caused to the Aeronautical Radionavigation Service and the Radionavigation Service and that no protection is required from these radionavigation services, taking into account the results of relevant ITU-R studies and Recommendations.

Australia will monitor the progress of ITU-R studies related to the compatibility of earth exploration-satellite service (active) and the space research service (active) with the radionavigation service in these bands before forming a position on sharing.

2.2 Spectrum requirements for aeronautical telecommand and high-bit rate aeronautical telemetry, in the 3-30 GHz band. (AI 1.5)

These spectrum requirements are to support test flight programmes for modern aircraft and the operation of unmanned aerial vehicles (UAVs). The UAV requirement is primarily being driven by defence interests but civil UAVs are being introduced. In both cases civil aviation has an interest where UAVs operate in civil airspace and must be compatible with piloted aircraft. Since Sept 11 applications like cockpit video surveillance are also being considered.

Australia civil aviation has no immediate need for this spectrum but will follow the development of this agenda item noting its international implications.

Australia's position is still to be developed.

2.3 Consider additional allocations for the aeronautical mobile (R) service in the range 108-6000 MHz (AI 1.6 Resolution 414)

This issue is important specifically in Europe due to congestion in the air-ground VHF communications band. In the US there are plans to use the 5 GHz band to reduce runway incursions through the use of Airport Network Location Equipment (ANLE).

Australian aviation is unlikely to need additional air-ground voice communications bandwidth in the foreseeable future but supports the need for global ICAO standards noting that Australian aircraft operate internationally. Australia may have long-term needs for runway incursions systems.

Australian Position: Australia supports global allocations to the Aeronautical Mobile (R) Service in the frequency bands 960-1 164 MHz and 5 091-5 150 MHz if shown to meet global CNS/ATM requirements on the basis of compatibility with the existing services and it cannot operate in existing aeronautical mobile (R) spectrum. In the 5 091-5 150 MHz band compatibility will be required with FSS Earth-to-space feeder links. Australia has three operational feeder links in this band.

2.4 Study current satellite frequency allocations that will support the modernisation of civil aviation telecommunication systems (AI 1.6 Resolution 415)

This agenda was proposed by Kenya and Uganda as a method of improving developing countries CNS/ATM aviation infrastructure. Studies will consider access to satellite communication systems such as VSAT to reduce reliance on expensive and unreliable terrestrial systems. There are also considerations to include the implementation of systems on-board aircraft in different allocations to serve aeronautical purposes other than safety requirements.

Australia supports this agenda item in order to assist developing countries and provide possible benefits to countries with sparsely populated countries such as Australia.

Australian Position: Australia supports identification of appropriate regulatory and technical measures that can be used in current satellite frequency allocations that will allow the modernization and future use of aeronautical communications systems for CNS/ATM, especially in developing countries, noting that this spectrum may also support other non-aviation users.

Australia supports allocation of the following bands for the use of the aeronautical mobile-satellite service on a secondary basis:

Region 1: 10.7-11.7 GHz and 12.5-12.75 GHz (s-E)

Region 2: 10.7-12.2 GHz (s-E)

Region 3: 10.7-11.7 GHz and 12.2-12.75 GHz (s-E),

providing such allocation does not have any adverse impact on existing services in these bands.

3. RECOMMENDATIONS

3.1 That the meeting notes that:

a) The Australian positions for WRC-2007 are preliminary and will mature as the results of the ITU-R studies progress;

b) There are significant issues that have implications for aviation in the Agenda for WRC-07 including co-primary allocations in the 9000 MHz aeronautical radar band, spectrum requirements for wideband aeronautical telemetry and telecommand, air-ground voice communication and runway incursion systems, and modernisation of civil aviation telecommunication systems through current satellite allocations; and

c) The 2nd APT World Radio Conference Preparatory Meeting (APG2007-2) is planned for the first week of December 2004.

3.2 That the meeting urges Contracting States to:

a) Carefully consider State and international requirements for aeronautical services identified in the WRC-2007 Agenda and adopt national positions to ensure the availability and protection of this spectrum for aviation use; and

- b) Actively participate and support WRC-2007 aeronautical spectrum issues through national and international fora including the APT World Radio Conference Preparatory Meetings (APG2007) and ITU-R World Radio Conference 2007 (WRC-2007).
