

**Information Paper**  
**on Radio Spectrum for Aeronautical Services**  
**LegCo Panel on Information Technology and Broadcasting**

**Introduction**

The World Radio Conference of the International Telecommunication Union to be held in May 2000 (WRC-2000) will discuss, among other items, the sharing by telecommunications services of radio spectrum now allocated to radionavigation satellite service<sup>1</sup> (RNSS) and aeronautical radionavigation service<sup>2</sup> (ARNS). This paper provides Members with the information on the agenda items concerning aeronautical services at this conference, the existing situation of the frequency bands covered by those agenda items and the views of Hong Kong on these matters.

**Discussions in WRC-2000 concerning Aeronautical Services**

2. Agenda items of the WRC-2000 relevant to frequency allocation for ARNS and RNSS are summarized below:

- (a) consideration of allocation to mobile satellite service (MSS) in a portion of the band 1559-1567MHz (agenda item 1.9);
- (b) status of allocation to services other than the RNSS in the band 1559-1610MHz (agenda item 1.15.3);
- (c) additional frequency allocation for IMT-2000 expansion (agenda item 1.6);

<sup>1</sup> Radionavigation Satellite Service: A service used for the purpose of guiding the aircraft by satellite.

<sup>2</sup> Aeronautical Radionavigation Service: A radio guidance service intended for the benefit and for the safe operation of aircraft.

- (d) use of the band 1525-1559MHz and 1626.5-1660.5MHz by the mobile satellite service (agenda item 1.10);
- (e) new allocation to the RNSS in the range from 1 to 6GHz required to support development (agenda item 1.15.1); and

### **Present Situation**

3. The latest developments with regard to the agenda items set out in paragraph 2 are summarised as follows :

4. Items (a) and (b) concern frequency sharing between ARNS/RNSS and MSS/Fixed Service. In World Radiocommunication Conference 1997, there was a proposal to consider new allocation of MSS in the band 1559-1567MHz and review the status of frequency sharing between Fixed Service and RNSS in the 1559-1610MHz band. These frequency bands are now used for ARNS/RNSS. The decision was that the ITU should assess whether or not the sharing is technically feasible. ITU Study Group has now concluded that sharing between ARNS/RNSS and MSS is not feasible in any portion of the band 1559-1567MHz. As a result, it does not recommend sharing between RNSS and Fixed Service in the band 1559-1610MHz.

5. Item (c) concerns additional spectrum allocation for IMT-2000, the third generation mobile phone. One of the candidate bands for consideration is 2700-2900MHz. The band concerned is now allocated to ARNS/Meteorological Aids in Hong Kong and is currently used by the weather radar of Hong Kong Observatory.

6. Item (d) concerns new allocation for Aeronautical Mobile Satellite (Route) Service<sup>3</sup> (AMS(R)S) in the bands 1525-1559MHz and 1626.5-1660.5MHz, to be shared with existing mobile-satellite service. There is a proposal from some ITU Members that AMS(R)S should have

<sup>3</sup> Aeronautical Mobile Satellite (R) Service: A satellite guidance service for communications relating to safety and regularity of flights, primarily along national or international civil air routes.

priority access to the spectrum. According to the ITU studies, further technical and regulatory studies would be required before deciding on such priority arrangement.

7. Item (e) concerns new allocation to the RNSS in the range of 1 to 6 GHz required to support development. Candidate bands to be considered by WRC-2000 for this purpose are 960-1215MHz, 1260-1300MHz, and 5000-5150MHz. In Hong Kong, the bands 960-1215MHz and 5000-5150MHz are already allocated to ARNS and the band 1260-1300MHz to radiolocation service.

### **Review of the Telecommunications Authority**

8. In Hong Kong, the Telecommunications Authority consults the telecommunications industries through the Radio Spectrum Advisory Committee (RSAC) on all matters about spectrum planning. Civil Aviation Department is a member of RSAC and provides expert advice and views on aeronautical services. The Telecommunications Authority also consults the Director of Civil Aviation directly on important spectrum issues which may affect aeronautical services. This includes assignments of individual frequencies in the aeronautical bands or frequencies to services which may interfere with aeronautical services to ensure that aviation safety is not compromised. The consultation process ensures that the views of the Civil Aviation Department and the aviation industry are fully taken into account.

9. At the recent meeting of the RSAC, the agenda items of the WRC-2000 were discussed. CAD strongly supports the position of the International Civil Aviation Organization that there should not be any sharing of ARNS/RNSS with mobile satellite service in the 1559-1567MHz band. The study conducted by the ITU Study Group has also concluded that sharing of the ARNS/RNSS with MSS is not technically feasible. Accordingly OFTA concludes that Hong Kong should not support such sharing at the WRC-2000. OFTA also will not support the

sharing between RNSS and FS in the band 1559-1610MHz.

10. The band 2700-2900MHz is used for the weather radar in Hong Kong. Accordingly OFTA will not support using this band for IMT-2000 expansion.

11. ITU has indicated that priority use by AMS(R)S of the band 1525-1559MHz and 1626.5-1660.5MHz will need further technical and regulatory studies. OFTA will monitor the progress of these studies.

12. Depending on the decision of the WRC-2000, OFTA will consider making available the appropriate bands 960-1215MHz, 1260-1300MHz and 5000-5150MHz for RNSS.

13. Hong Kong representatives take parts in the WRC-2000 as members of the Chinese delegation. OFTA will liaise with their counterparts in the Ministry of Information Industry on the views we propose to put forward at the conference.

OFTA

7 March 2000