



International Civil Aviation Organization  
Eastern and Southern African Office

**Air Traffic Management Coordination Meeting for Southern AFI  
Flight Information Regions (ATM/CM-SAF)  
(Johannesburg, South Africa, 3-5 February 2015)**

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**Agenda Item : ANY OTHER BUSINESS**

**VSAT SPECTRUM PROTECTION**

(Presented by South Africa (Carel Gersbach))

**SUMMARY**

This paper is to propose to the AFI member states in taking technical action in supporting the protection of VSAT frequency spectrum in preparation of the upcoming World Radio-Communication conference -2015. During the WGF-31 meeting, ICAO has taken a position to support the ITU agenda item 9.1.5 in considering technical and regulatory action for the support of fixed satellite service earth stations within C-Band frequency spectrum.

**ACTION**

It is proposed that the AFI member states represented at the ATM/CM-SAF meeting take the action of registering the Fixed Satellite Services (VSAT earth stations) in their FIR's.

**1. INTRODUCTION**

1.1 ITU - AGENDA ITEM 9.1.5 for WRC-15 states "Consideration of technical and regulatory actions in order to support existing and future operation of fixed-satellite service earth stations within the band 3400-4200 MHz, as an aid to the safe operation of aircraft and reliable distribution of meteorological information in some countries in Region 1.

1.2 Resolution 154 (WRC-12) invited the ITU-R to study possible technical and regulatory measures in some countries in Region 1 to support the existing and future FSS earth stations in the 3400-4200 MHz band used for satellite communications related to safe operations of aircraft and reliable distribution of meteorological information, considering that where an adequate terrestrial communication infrastructure is not available, FSS earth stations are the only viable option to augment the communication infrastructure in order to satisfy the overall communications infrastructure requirement of the International Civil Aviation Organization (ICAO) and to ensure distribution of meteorological information under the auspices of the World Meteorological Organization (WMO).

1.3 Recognizing the importance of this band for aviation and meteorology services, WRC-12 adopted Resolution 154(WRC-12).

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1.4 Furthermore, in line with ICAO Assembly Resolution A36-25, the 12th ICAO Air Navigation Conference adopted Recommendation 1/12 requesting ICAO and Contracting States not to support additional international mobile telecommunications spectrum allocations in the fixed satellite service C-band spectrum at the expense of the current or future aeronautical VSAT networks.

1.5 ICAO is to pursue this matter in the International Telecommunication Union – Radio-communication Sector (ITU-R) and during the next World Radio-communication Conference (WRC-15), to prevent any international mobile telecommunications spectrum allocation that compromises the availability of the aeronautical VSAT networks.

## **2. DISCUSSION**

2.1 The efficient provision of air navigation services requires the implementation and operation of ground communications infrastructure with high availability, reliability and integrity.

2.2 In the African Region, the difficulty of fulfilling these requirements, given the extent of the airspace and weakness in terrestrial communication infrastructure, have led to the extensive deployment of an aeronautical communication infrastructure based on VSAT systems operating in the fixed-satellite service (FSS). The frequency band of operation is the 3400-4200 MHz band, which, due to more pronounced rain attenuation at higher frequency bands, is the most viable option for satellite links with high availability in tropical regions.

2.3 This infrastructure currently spans the entire region and is crucial to ensure the continued growth of traffic while maintaining the required level of safety. The same band is also used for the distribution of meteorological data via satellites under the auspices of the World Meteorological Organization.

2.4 WRC-07 allocated the frequency band 3400-3600 MHz to the mobile telecommunication, except aeronautical mobile service on a primary basis in some countries, including Region 1.

2.5 This was subject to regulatory and technical restrictions (RR No. 5.430A). The deployment of mobile service systems in the vicinity of airports has led to an increased number of cases of interference into the FSS (VSAT) receivers. Consequently, some additional measures need to be adopted to improve the protection of the FSS links supporting aeronautical and meteorological communications.

## **3. ACTION BY MEETING**

3.1 Considering the criticality of the telecommunication infrastructure in the safe and efficient provision of air traffic management, the AFI Region member states are requested to discuss strategies to support the ICAO Position for WRC-15, and secure the operation of aeronautical VSAT networks, in accordance with ICAO Twelfth Air Navigation Conference (AN-Conf/12) Recommendation 1/14 and WRC-12 Resolution 154.

3.2 It is therefore recommended that member states start the process of registering Fixed Satellite Services VSAT earth stations in the region.

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