



**8<sup>th</sup> NAFISAT SUPERVISORY COMMITTEE MEETING  
(Mahe, Seychelles, 25 – 26 March 2013)**

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**Agenda Item 7: Matters arising**

**7.3 Implementation of APIRG/18 Conclusions and Recommendations  
of relevance to NAFISAT Network**

**Outcome of ITU WRC-12 and ICAO AN-Conf/12 – pertaining to VSAT  
Networks and Preparation of WRC-15**

*(Presented by ATNS)*

**SUMMARY**

This working paper presents information on the South African position on the protection of spectrum used to facilitate aeronautical services and to invite the Committee to agree to the proposed action in paragraph 3.

**1 BACKGROUND**

- 1.1 Although frequency bands for safety of life services is protected, the aeronautical industry uses non aeronautical technologies and spectrum to provide auxiliary aeronautical services. For example VSAT, which is used in Africa to provide connectivity for air traffic service communication, navigation and surveillance (CNS) technologies. C-band based VSAT technology also provides a platform in eliminating communication deficiencies within the States in the AFI Region.
- 1.2 Fixed satellite services (FSS) C-band operates in a non-aeronautical frequency band and as a result, it is not protected to the same level as the safety of life services, although remote sites connected to the VSAT network offer the aviation industry with the safety of life services.

**2 DISCUSSION**

- 2.1 Several African countries reported interference on their VSAT ground stations and ATNS has also experienced interference in the operation of the VSAT network.
- 2.2 Despite documented reports of interference and ICAO State, additional spectrum is requested at the ITU level for International Mobile Telecommunications (IMT) services within the C-band (3.4-4.2 GHz) operated by aeronautical VSAT networks.

- 2.3 In South Africa we will enhance VHF coverage in the frequency band 118-137 MHz. As the terrestrial telecommunication infrastructure is inadequate in rural areas, VSAT technology will be used as backup links to remote sites.
  - 2.3.1 DME-DME navigation networks are also planned. C-band VSAT is the preferred technology for the interconnection of the DME sites.
  - 2.3.2 GNSS augmentation in South Africa will also use C-band VSAT technology as a data link.
  - 2.3.3 Presently, C-band VSAT technology is used to link en-route surveillance facilities.
- 2.4 The services identified depict that VSAT technology is used to link remote CNS services, which are protected services, while VSAT connectivity does not have comparable levels of protection.
- 2.5 It is also important that VSAT frequency assignments that may have international implications, have to be notified to the ITU, with a view to their recording in the ITU Master International Frequency Register (MIFR). It is therefore proposed that registration of the NAFISAT VSAT frequency assignments in the MIFR be investigated with the view of supporting the protection of FSS C-band spectrum.

### **3 SUGGESTED ACTION TO BE TAKEN BY THE MEETING**

- 3.1 Long-term VSAT spectrum availability and protection from interference should be guaranteed across the entire African Continent and other parts of the world. It is therefore proposed that:
  - 3.1.1 NAFISAT States should not support additional international mobile telecommunications spectrum allocation in the FSS C-band spectrum at the expense of the current or future aeronautical VSAT networks.
  - 3.1.2 ATNS investigate the status of the recording of NAFISAT network frequency assignments in the MIFR, and where possible address any outstanding registrations. A report on the findings must be submitted to next Supervisory Committee meeting.

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