C-Band FREQUENCY SPECTRUM REQUIREMENTS FOR THE SAFE PROVISION OF AIR NAVIGATION SERVICES WITHIN AFRICA
RR 4.10
“ITU Member States recognize that the safety aspects of radionavigation and other safety services require special measures to ensure their freedom from harmful interference; it is necessary therefore to take this factor into account in the assignment and use of frequencies”

The mission of the Air Navigation Services Providers in AFI region (ANSP) is to ensure the safety of Air Navigation in the fifty-four (54) States of Africa; (Western, Central, Eastern, Northern, southern & Indian Ocean)

The efficient provision of air navigation services relies on the implementation and operation of C-Band infrastructure available, reliable and integrated, to comply to ICAO and WMO requirements
Resolution 154 (Rev.WRC-15) supports the safe provision of air navigation services within AFI region

Consideration of technical and regulatory actions in order to support existing and future operation of fixed-satellite service earth stations within the frequency 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

Aviation safety across the African Continent has been compromised by a lack of reliable fixed aeronautical telecommunications infrastructure used for providing Air Traffic Services

VSAT networks have been established across Africa to resolve the lack of communications
Air Navigation Services Provision in AFI region

- 38 Flight Information Regions (FIR) covering 54 States
- (04) four aeronautical VSAT networks (AFISNET, CAFSAT, SADC-3, NAFISAT) with almost 150 nodes
- Important Communication, Navigation, Surveillance and Meteorological C-band infrastructure
- Increasing traffic: 5 to 6% per year
Four Aeronautical VSAT network operating in C-Band supporting all the Air navigation and meteorological services:

- AM(R)S via VHF
- AFS Aeronautical Fixed Service
- ARNS (via GBAS)
- Meteorological Data exchanges
- Surveillance data exchanges
PROVISION OF AERONAUTICAL SAFETY SERVICES

Controller / Pilot Communication

Area Control Center

Remote VHF Station

FSS segment

AM(R)S segment
RR 5.430A allocates the frequency band 3 400-3 600 MHz to the mobile, except aeronautical mobile, service subject to agreement obtained under No. 9.21. This frequency band is identified for IMT.

The deployment of mobile service systems in the vicinity of airports has led to an increased number of cases of interference into FSS VSAT receivers.

Consequently, some additional measures have had to be adopted to improve the protection of the FSS links supporting aeronautical and meteorological communications.
Harmful interferences affecting AFISNET VSAT station
Conclusions

The availability of the C-band (FSS) is crucial for the AFI Region to ensure the continued growth of air traffic while maintaining the required level of safety in this region.

Frequencies already in use by 4 FSS Networks across Africa:
- 3 650 – 4 200 MHz
- 5 850 – 6 450 MHz

Regulatory measures are required to ensure protection for the FSS C-band spectrum which is used to augment terrestrial communication networks through the use of VSAT technology.

VSAT technology is used to facilitate safety of life CNS services within the aeronautical community.

ATU to support the Civil Aviation Industry C-band requirement for the safe provision of Air Navigation Service within AFI Region.
Thank you