

# **GVF Response to the public Consultation Process Published by ICASA:**

## **Draft Frequency Migration Regulation**

**And**

## **Frequency Migration Plan**

**GG 35598 (vol 566) 17 August 2012 (ICASA notice 606)**

### **Introduction**

The Global VSAT Forums (GVF) welcomes the opportunity to comment on the above regulations and plan published by the Independent Communications Authority of South Africa (ICASA).

GVF is supportive of ICASA's commitment to improving the efficient use of radio frequency spectrum in South Africa. GVF is however very concerned the proposal tabled in the Draft regulations and migration plan impact significantly on the proper and efficient utilisation of satellite capacity available over the region. In particular, our members are very concerned regarding the negative impact the proposal to extend Broadband Fixed Wireless Access (BFWA) in a band traditionally allocated to C-band satellite services. Many users of services provided to consumers and large corporate in South Africa and Sub-Saharan Africa depend on these services for connectivity. Some of the services in current use are cellular backhaul connectivity, connectivity for existing wireless terrestrial networks, Internet Backbone Connectivity, satellite TV service Contribution and Distribution links, Satellite News Gathering services and Point-to-Point communication services.

All the above services will be compromised by the proposed C-band migration plan.

In particular, ICASA's attention is drawn to the fact that the South African National Antarctic Programme (SANAP) is almost entirely dependent on C-band FSS services for all its connectivity between South Africa, Marion Island, Gough Island, the main South African Antarctic base as well as the supply ship SA Agulhas II.

There are also bases belonging to other countries in the Antarctic dependent on C-band connectivity between South Africa and those bases.

Furthermore, the proposal to migrate all VSAT satellite services and operations from 3600-3800 MHz to the Ku-band without due cognisance of the impact on service quality and services costs, especially in rural areas, will risk reducing the availability of satellite-based communication services.

Additionally, we are concerned that the proposed new allocations in bands reserved for Mobile Satellite Services (MSS) have overlooked the high risks of interference to these services and in some cases the proposed allocations are contrary to international trends and even in contradiction to ITU regulations governing these bands.

GVF is the leading voice of the international VSAT community. It is composed of more than 200 members from every major region of the world and from every sector of the industry, including satellite operators, manufacturers, system integrators and other service providers. A complete list of GVF members is available at [www.gvf.org/about-gvf/membersdirectory.html](http://www.gvf.org/about-gvf/membersdirectory.html). The GVF works with regulators around the world to design and promote regulatory structures that permit effective satellite services.

## **Background**

The draft regulations and migration plan proposed by ICASA propose several changes to South Africa's National Radio Frequency Plan (hereinafter referred to as "The Plan"). These changes are purported to be to ensure alignment of The Plan with the International Telecommunications Union (ITU) World Radio Conference (WRC) Resolutions, Regional African Conference Resolutions and , the SADC Frequency Allocation Plan.

Satellite radio frequency allocations are global allocations designed to ensure that satellite services are made available globally in spectrum allocations guaranteed to be free of interference anywhere and everywhere.

## **Migration Plan Impact on Spectrum allocated to Satellite Services**

ICASA proposes to adopt the *proposed* SADC allocation plans in C-band, L-band and S-band to various Broadband FWA and Broadband Mobile FWA systems and services. The proposals further state that all VSAT services should be moved from FSS C-band (3600-3800 MHz) to FSS Ku-band allocations

GVF is concerned that the proposals do not take into account the issues raised in the sections below. GVF therefore suggests that the proposals in the regulations and The Plan should be reconsidered after an evaluation of the issues raised in the sections tabled in this submission.

## **Importance of Satellite Spectrum for Africa and Sub-Saharan Africa**

Satellite systems and networks involve very large financial investments, made over a number of years by many countries. These investments are made after many years of research, advanced planning, construction and deployment of satellites and ground station equipment.

The environment under which such international initiatives takes place is based on a stable regulatory framework governed by radio frequency allocations made in terms of the ITU radio band plan.

MSS satellite systems are global systems relying on spectrum allocations recognised and honoured by all countries and regions. Most of these systems are deployed wherever mobile services are required, and are no longer seen as only for maritime use. Many of the services and systems play a vital role in the provisions of emergency services and disaster recovery systems

FSS satellites services have for more than 40 years been the backbone on which telecommunication services are provided in underserved areas of the world, particularly in Africa.

## **Impact on Investments in the Provision of Satellite Capacity over Africa**

Vast investments in Satellites systems (measured in trillions of USD) have been made by governments and private companies in the past 40 years.

Specifically, numerous reports by international satellite research companies such as Futron Corporation ([www.futron.com](http://www.futron.com)) and Comsys ([www.comsys.co.uk](http://www.comsys.co.uk)), as well as organisations such as The European Satellite Operators Association (ESOA) are available detailing the amount of MSS and FSS satellite capacity available over Africa.

In particular, there are of the order of 42 satellites operating C-band services over Southern Africa, with a further 5 satellites due for launch in the near future, all providing payloads that include C – band capacity. MSS satellite services are dependent on feeder links provided in C-band.

We would also wish to draw ICASA's attention to the fact that the new Dawn Satellite which also provides for a C-band payload is a joint venture between Intelsat and South African investors.

The impact that the proposed reservation of the band 3600-3800 Mhz to BFWA and the proposal to allow MBWA services in the MSS bands must be considered by ICASA in the drafting of the South African Frequency Band plan and the migration Plan which is the subject of this consultative process.

In a recent report released by ESOA, the following statement was made, which very concisely summarises the importance of a stable regulatory environment in all countries:

*"The success and stability of satellite services for users is inextricably linked to the ability of the satellite operator to access enough spectrum that is free of damaging interference, and without the risk that such spectrum may be taken away after the investment has been made."*

In our opinion, the ICASA proposals effectively take away C-band, L-band and S-band capacity from the satellite operators in the largest economy in Sub Saharan Africa.

The GVF notes that ESOA and Inmarsat have each provided their own comments on the proposal. The GVF agrees with the concerns raised by ESOA and Inmarsat that expansion of broadband fixed wireless may compromise existing fixed satellite services, and the GVF provides additional comments below.

## **Comments on Specific sections of the Proposed Migration Plan**

### **Section 4.11.31: BFWA Allocations in the 3600-4200 MHz band**

This band has been allocated on a co-primary basis to FSS and FS services. The band was and is still extensively used for PTP international communications, cross border system and inter-continental systems. The band is extensively used by broadcasting for contribution and distribution services providing backbone connectivity to many terrestrial broadcasting services.

The band is critical for operators who provide services to large geographical areas. The c-band services thus make it possible to provide sustainable services in sparse areas with low population densities and low service requirements.

C-band is required to provide high availability, high quality services to users because the band is the least affected by atmospheric and rain

There are approximately 42 satellites with 5 new satellites to be launched in the near future all delivering C-band capacity over Southern Africa. Indeed at least one of these satellites a part owned by investors from South Africa.

Further the GVF wishes to draw ICASA attention to the fact that the South African National Antarctic Programme is almost totally dependent on C-band capacity for its broadband connectivity requirements.

The whole of the current FFS band 3600-4200 MHz is fully utilised by the satellite operating over Southern Africa.

The current National Radio Frequency Plan as published in Government Gazette 33409, 30 July 2012, provides for FS and FSS services in these bands on a co-primary basis.

Services must be co-ordinated to ensure neither service experiences undue harmful interference.

The current ITU Radio regulations state BFWA services can be provided for in this band on condition that these new services do not cause harmful interference with services provided under the existing regulations.

The latest WRC 2007 and 2011/12 studies again confirmed the lack of compatibility between BFWA, FSS and FS services in this band.

Thus any increased utilisation of this band by new services, such as BFWA, will increase the risk of interference, effectively meaning the prevention of new earth stations in any area where BFWA is deployed.

ICASA will be required to implement very strict co-ordination criteria in areas where existing C-band earth stations exist. This effectively means that tens and even hundreds of kilometres around all existing C- band terminals will have to be free of BFWA systems.

There are numerous ITU sponsored reports detailing the studies undertaken to justify the conclusion reached. The GVF is prepared to make available to ICASA copies of these studies.

The GVF recommends that ICASA does not amend the current allocations to allow for BFWA in this band without much deeper study of the impact such an allocation will have on existing C-band services.

The GVF is convinced that such a study will reveal that BFWA allocations in the band 3600-3800 MHz in Southern Africa will be shown to be neither technically nor economically justifiable.

#### **Section 4.11.31: VSAT Migration to Ku-Band only.**

The ICASA proposal states that All VSAT Services should be migrated to Ku-Band. This proposal is motivated on the grounds that it is difficult to co-ordinate ubiquitous user terminals used for BFWA.

In the same section ICASA states that "... in the band 3600-3800 MHz, BFWA,FS, PTP and FSS applications will have to operate on a co-ordinated basis.

Nowhere in the proposal is the term "VSAT Services" defined.

The GVF believes that the forced migration of all VSAT services does not remove the obligation for co-ordination and is thus not an appropriate solution to the difficulties regarding proper co-ordination. There are many improvements in the management and co ordination of spectrum such as the use of appropriate GIS systems that do allow for the proper co-ordination of allocations between these competing services.

VSAT operators in South Africa provide critical services to many consumers, small and medium businesses at acceptable service levels via VSAT terminals. These operators have all made very large investments in VSAT networks. Similarly, as previously mentioned, the satellite operators providing C-band capacity over the region have also invested large amounts to provide VSAT services in C-band.

All these operators may be forced to abandon the provision of C-band capacity over southern Africa as a result of this migration.

The GVF believes that there is neither a technical nor an economic justification for the implementation of the above VSAT services migration plan.

#### **Section 4.11.21-23: L-Band Migration Proposals.**

The GVF wishes to draw ICASA's attention to the following issues which have a bearing on these migration proposals.

- Most other countries including these ICASA migration proposals) provide sufficient capacity for FS in other parts of the spectrum, without the need to place under threat the L-band allocations made to MSS.
- The band 1518-1525 MHz (downlink), matched with the band 1668-1675 MHz (Uplink) will be brought into service by INMARSAT with the launch of their Alphasat satellite system in the near future. Both these band are required to operate the proposed Inmarsat service. The uplink band has the potential to cause interference with users of any FS services provided within Southern Africa. It is for this reason that WRC 07 in resolution 744 resolved to place power limits on systems.
- The downlink band will be seriously compromised by harmful interference from FS services. This band like the band 1525-1530 MHz will be used by MSS for many years to come. It has been shown that whilst there is such an allocation to FS in both these bands, the use of FS in these bands is not compatible with MSS operation. The GVF does not believe any purpose will be served by providing for such a FS allocation in the SA band plan when experience in the rest of the world has shown that such an allocation is not compatible with MSS.
- All these bands are being used by mobile terminals, which means that there is a risk that these mobile terminals will cause interference to any terrestrial systems in the region.

The GVF recommends that no changes be made to the South African band plan to incorporate allocations to FS in any of these bands simply to ensure that the South African plan is in line with the ITU-R plan when it has already been demonstrated in other parts of the World that MSS services cannot co-exist with FS services.

### **Section 4.11.25: S-Band Migration Proposals.**

This band may be under-utilised by MSS at the moment, but the allocation remains reserved for MSS services. There are already plans in place to utilise this band for MSS in Europe, where two operators have been identified ( Solaris and Inmarsat).

Resolution 716 (WRC 2000) requests administrations to migrate existing services in these bands to other allocations with the precise purpose of allocating these bands to MSS services.

The GVF recommends that ICASA continues with its efforts to migrate existing services out of these bands to allow for the future deployment of MSS services in these bands.

### **Conclusion**

The GVF recognises the need for adequate spectrum allocations to broadband services. However the GVF believes the allocation of additional spectrum to broadband services should not be at the expense of existing highly utilised services in bands with a proven track record of efficient spectrum utilisation.

The GVF further recognises the key role south Africa plays in the economy of sub Saharan Africa and the recognises the leading role ICASA plays in the region.

The GVF wishes to encourage ICASA (by example) to set up World Class regulations and Spectrum band plans.

The GVF there requests ICASA to reconsider the proposals affecting satellites services taking into account the concerns raised in this submission to the consultative process.

The GVF is available to provide any further comment and is also prepared to respond to any questions ICASA may have regarding this submission.

The GVF also wishes to be given an opportunity to make a presentation at the planned public hearings to be held on 8- 11 October 2012.