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The Independent Communications Authority of South Africa
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Attention:
Mr Manyapelo Richard Makgotlho
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Dear Sir

COMMENTS ON THE DRAFT RADIO FREQUENCY MIGRATION REGULATIONS AND RADIO FREQUENCY MIGRATION PLAN AS PUBLISHED IN GOVERNMENT GAZETTE NO 35598

Our comments relate specifically to paragraph 4.11.31 of the draft frequency migration plan, that deals with the frequency spectrum of 3600 MHz to 4200 MHz.

The proposed migration of VSAT links from this frequency band to Ku-band has relevance.

Our company's main business activity is to build and operate VSAT networks for corporate and governmental customers throughout Africa. We make extensive use of the frequency band in question (C-band) for continent-wide VSAT network connectivity. For the provision of satellite capacity, we deal directly with a number of satellite operators.

Apart from providing communications services directly to our customers, we are also involved with support and maintenance of VSAT networks on behalf of other service providers based in South Africa. The customers that we service, either directly or indirectly include the following:

Customer	Type of service
A South African bank	Corporate network to various African country regional head offices.
South African bank 2	Corporate network between SA and branches

	outside of SA.
Pharmaceutical company	Corporate network across 6 African countries including SA
Intergovernmental trade organisation – East Africa	Private communications network spanning 18 African countries.
A bank in Malawi	Internet service via satellite
A bank in Democratic Republic of Congo	Corporate network to number of branches.
A mining company	Corporate network between 3 African countries, including SA.
A mining company in Democratic Republic of Congo	Corporate network in DRC
Air traffic control authority in South Africa	Air traffic control network across many countries of Southern, Eastern and Northern Africa, including South Africa.

The list of customers in the table above is a short extract of actual running networks. All of these networks share a common feature, and that is very high reliability and availability requirements. These are requirements that are simply not possible with Ku-band VSAT, or with any other medium of communications available in much of Africa.

In dealing with VSAT migration, the following needs to be considered:

- 1) Virtually all geostationary communications satellites currently in orbit do make use of the C-band frequency band in question (3600 to 4200 MHz) for VSAT downlinks.
- 2) Only this band (C-band) is used, and suitable, for wide beam coverage, like hemispheric beams and global beams for VSAT communications, while Ku-band is suitable for smaller coverage areas only (spot beams).
- 3) Only C-band is adequately resistant to atmospheric effects such as rain fade, to be used in high-availability networks, while Ku-band can only be used for networks with low availability requirements.
- 4) The C-band currently services networks that span the whole of Africa, and more, and therefore these international impacts need to be considered as well.

In considering the above mentioned issues, we may conclude that we will face the following real problems, should the migration of VSAT to Ku-band be required:

- 1) Economic impact of low reliability networks on corporate networks,
- 2) Economic impact on service providers and customers from having to migrate, includes:
 - a. Cost of travelling and labour to reinstall all VSAT stations
 - b. Cost of buying new VSAT equipment, including RF equipment and antennas
- 3) Shortage of Ku-band capacity to service all existing C-band networks,
- 4) Economic impact because of satellite operators having to amortise capital spent on C-band satellite transponders, which are not being used anymore. These costs will be filtered down to service providers and their customers.
- 5) Non-compliance to international safety standards by the air traffic control authorities because of low reliability networks.

With more and more South African companies doing business in the rest of Africa, the availability of high quality networks become more important for the South African economy. The required high

quality is simply not possible with Ku-band. Alternatives exist in the form of under-sea cable, but only to the major centres of coastal cities of Africa. In large parts of Africa, the only viable way to communicate reliably, is via C-band VSAT.

It is therefore our plea that the frequency band, 3600 MHz to 4200 MHz, be reserved for VSAT downlinks for any foreseeable future period.

Sincerely
Stephan Kluever
Technical Director
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