

Draft Radio Frequency Migration Plan 2018

MultiChoice, M-Net and Orbicom

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TEAM



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INTRODUCTION



- We welcome the opportunity to address you on the draft Radio Frequency Migration Plan 2018
- We have confined our representation to 3600 – 4200 MHz (C-Band) and 10700 – 11700 MHz (Ku-Band) bands

**3600 – 4200 MHz
(C-Band)**

BAND MIGRATION

- The draft Plan states:
 - *“The sub-band 3600 – 3800 Mhz could be used for BFWA where frequency sharing with FS PTP and/or FSS is feasible. ...”*
 - *“The Authority has decided that: VSAT systems should be migrated to the Ku-band...”*
 - *“VSAT links should be migrated into this band (10700 – 11700 MHz) as per SADC proposed common sub-allocation/utilization”*

OUR COMMENTS



- On a number of occasions, we have objected to the introduction of BFWA in this band
- We further object to the Authority's proposal, not just to introduce BFWA, but to migrate VSAT systems out of the sub-band to the band 10700 – 11700 MHz, which is already on a path to congestion
- A position of “No Change” was unambiguously decided at WRC-15 for Region 1, of which South Africa aligned its position with that of other ATU member states

OUR COMMENTS



- Satellite users use C band for mission critical applications in telecommunications, banking, government services, broadcasting and others, as it has the advantages of:
 - **Reach**: geographic coverage area, allowing for whole regions or continents to be connected
 - **Resilience**: resistant to weather conditions such as rain fade, while services in higher frequencies suffer signal degradation
- The Authority does not provide any basis for its proposal (economic or otherwise) demonstrating benefits of BFWA over VSAT systems

OUR COMMENTS



- There are other difficulties with the Authority's proposal:
 - There are long-term commercial arrangements between satellite service providers and operators of earth stations, which would require revisiting, with extensive renegotiations, as a result of this migration
 - There are no guarantees that this time-consuming and costly process will identify alternative C-Band capacity, which may result in lapses in, or full termination of, services
 - The proposed candidate band for migrating VSAT systems to (10700 – 11700 MHz) is already on a path to congestion
- We strongly object to the Authority's proposals in this regard

10700 – 11700 MHz (Ku-Band)

BAND MIGRATION

- The draft Plan states:
 - *“VSAT links should be migrated into this band as per SADC proposed common sub-allocation/utilization”*
 - *“No migration at this stage”*

BAND ALLOCATIONS



- In line with ITU Region 1 allocations, NRFP 2018 allocations in this band are FS, FSS and MOBILE
- Note 4 of NRFP 2018 states:
 - *“...The sub-bands 10.95 – 11.2 GHz and 11.45 – 11.7 GHz is also used for DTH satellite broadcasting services on a secondary basis to the FS and FSS services.”*
- DTH was introduced in this band in 1998 as a secondary service
- GG19343 (9 October 1998) placed an obligation on telecommunications operators to communicate their rollout plans to broadcasters, at least quarterly

BAND USAGE



- Three key DTH services operate in this band, provided through the IS20 satellite system
 - DStv, OpenView and Sentech's DTT Gap Filler
 - Combined, these services serve almost 9 Million households
- Recently, a number of FS operators have been licensed in this band and have deployed mainly in urban areas, with no consideration to DTH services that operate in the band
- This situation has led to a number of interference cases

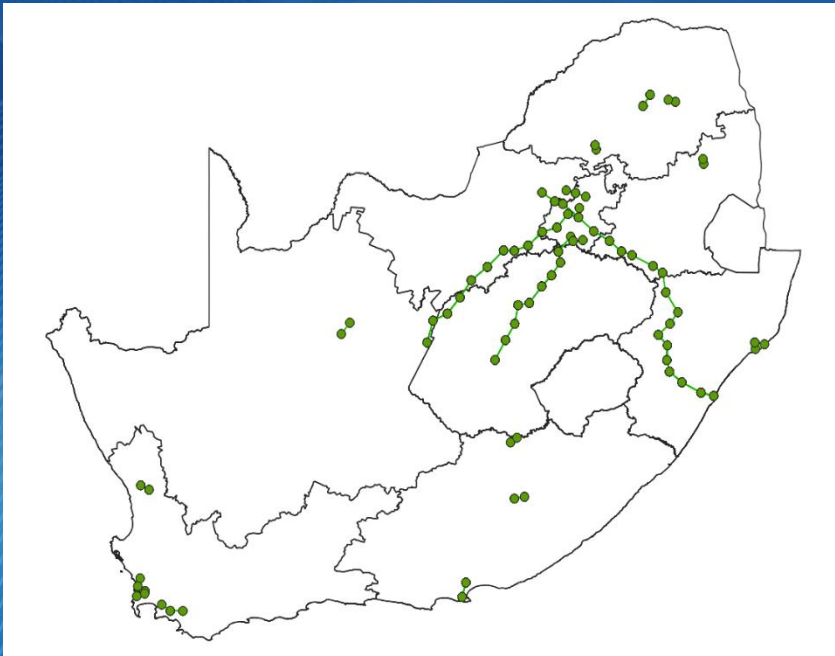
KNOWN INTERFERENCE CASES



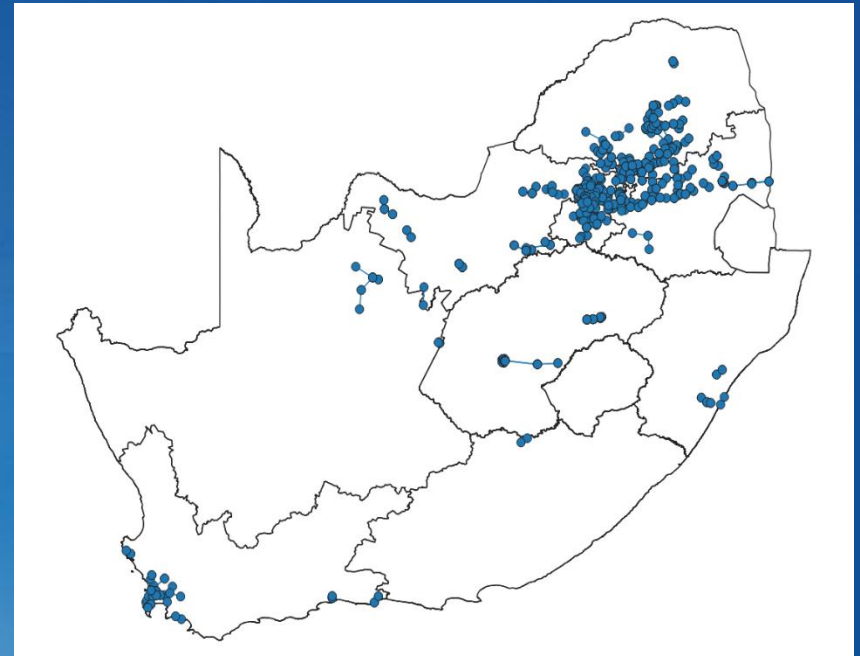
- **Bloemfontein**: 4 transponders affected (11050 MHz, 11090 MHz, 11554 MHz and 11594 MHz)...65 TV channels and 25 Radio channels – *reported to the Authority*
- **Kwa-Mhlanga**: 1 transponder affected (11554 MHz)...15 TV channels – *reported to the Authority*
- **Randburg**: 2 transponders affected (11050 MHz and 11090 MHz)...39 TV channels – *reported to the Authority*
- **Emalahleni**: 1 transponder affected (11554 MHz)...15 TV channels
- Subscribers have lodged complaints with the Authority in this regard

1998 VS 2018

FS Links in the 11 GHz band – 1998



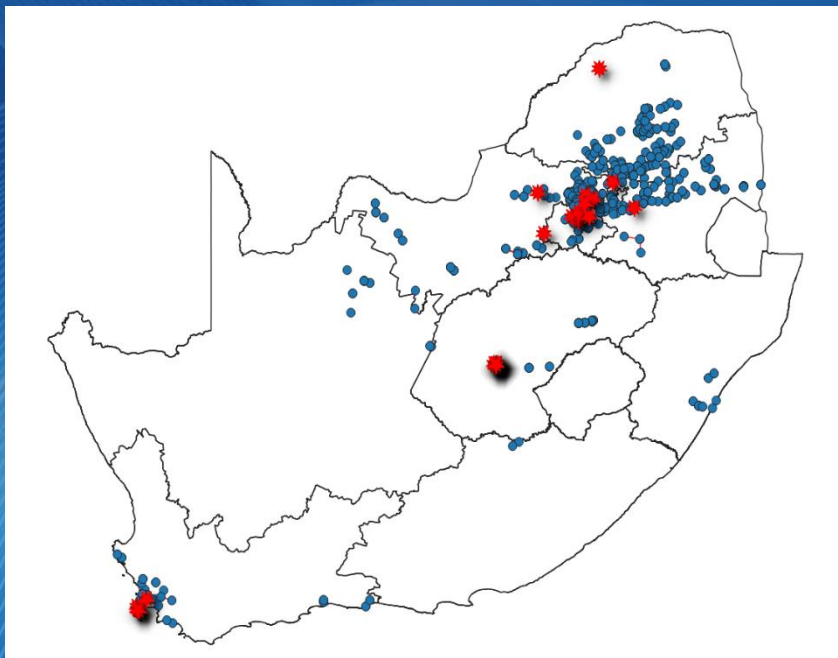
FS Links in the 11 GHz band – 2018



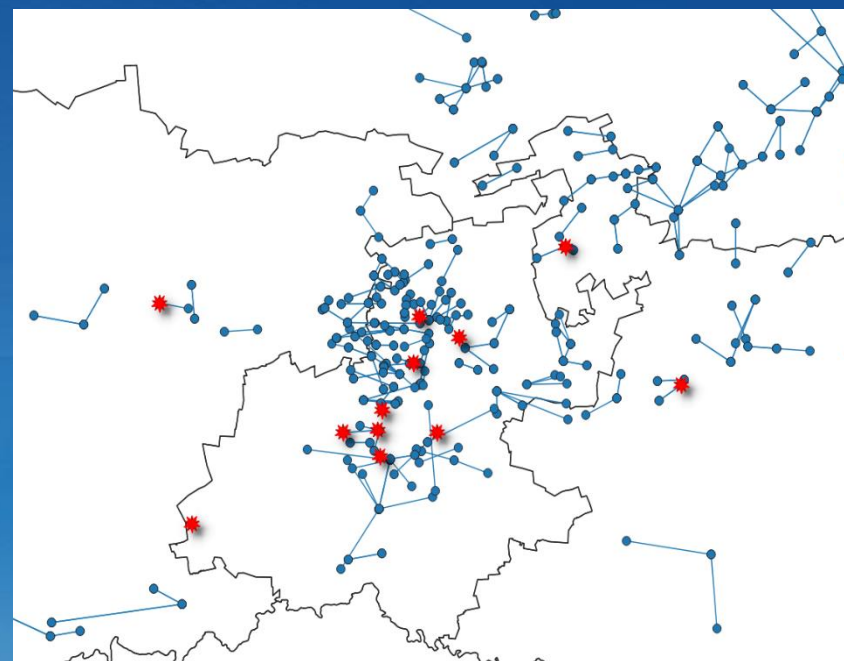
	11 GHz FS links in 1998	11 GHz FS links 2018
Number of Links	274	511
Average Antenna Gain (dBi)	47.1	38.2
Average Antenna Diameter (m)	2.6	1.0
Average Antenna Height (m)	39.5	22.5
Average Path length (km)	33.9	14.6

MAGNITUDE OF INTERFERENCE

Known Interference Cases - Countrywide



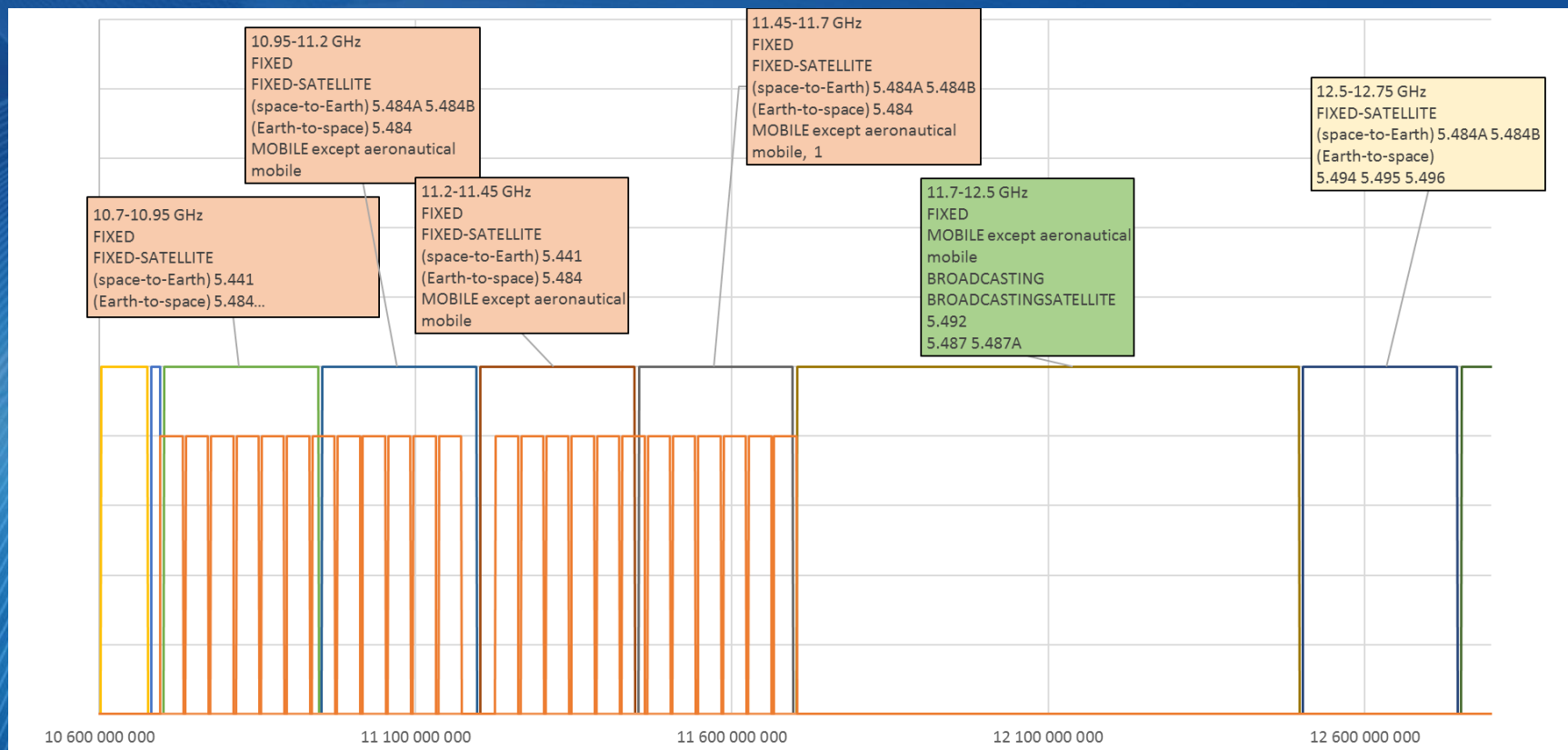
Known Interference Cases - Gauteng



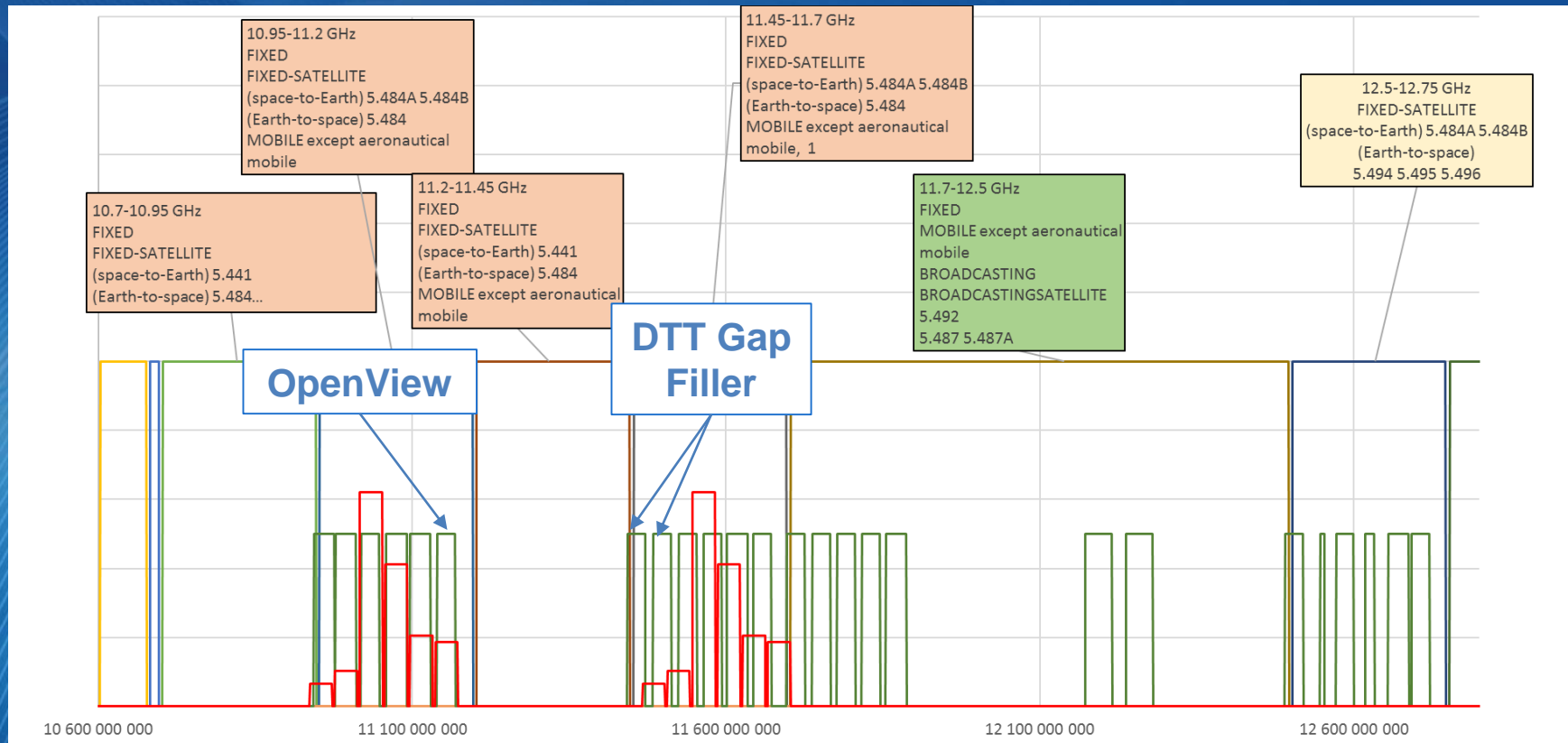
- We anticipate there could be more unreported interference cases

11 GHZ FREQUENCY PLAN

ICASA FS 11 GHz FS Frequency Plan (ITU-R F.387, 40 MHz)



FS FREQS AND DTH TRANSPONDERS



- The CEPT ERC Decision of 19 Oct. 2000 (ERC/DEC/(00)08) recognized the need for coordination in this band, between FS and uncoordinated FSS earth stations and decided the following (amongst other decisions):
 - New fixed service systems deployment is to be limited to high capacity point to point fixed links used for trunk network
 - Administrations should, to the extent practicable, take measures to protect uncoordinated FSS terminals from new fixed links
- ECC Report 173, which studied FS use in Europe, noted that due to satellite sharing problems, some countries have stopped the introduction of new links in this band (10.7 – 12.5 GHz)

DTH MIGRATION IS NOT AN OPTION



- Satellite payloads are designed to cater for operational use that extends to at least 15 years and beyond. It is simply not possible to modify the payload once satellites are in orbit
- A number of GSO/NGSO FSS systems are currently in use or being planned to operate in this frequency range, which intend to deploy large numbers of user terminals
- There is an increasing demand for DTH services and other related broadcasting services in South Africa
- It is of great importance to exercise flexibility in catering for such services and recognizing future demand for DTH services across Southern Africa

OUR COMMENTS



- Under the auspices of SADIBA, studies are continuing to determine clear sharing criteria in this band between FS links and uncoordinated FSS earth stations
- These studies will be shared with the Authority, from which a regulatory process may ensue
- More links in this band have the adverse consequence of affecting close to 9 Million households that depend on satellite broadcasting services

OUR COMMENTS



- Our primary view remains that the Authority should freeze any licensing of new FS links in this band
- We further recommend the Authority to consider migrating FS links in this band to other candidate bands, as studied by ECC Report 173. Amongst other bands, the following are recommended:
 - 5.925 - 7.125 GHz
 - 7.425 - 7.900 GHz
 - 12.75 - 13.25 GHz
 - 17.7 - 19.7 GHz

OUR COMMENTS



- However, a secondary view is the Authority's consideration of the technical study report that is to come out of SADIBA, which will provide sharing criteria for FS links, such as minimum hop lengths, antenna heights, output power, etc.
- This report should enable the Authority to provide technical conditions for licensing FS links in this band
- Current licensees should, at the time, be migrated to adhering to these technical conditions

Process of Spectrum Migration

DRAFT PLAN CONSIDERATIONS



- The draft Plan lists a number of considerations, one of which is:
 - *“the economic lifetime of the equipment”*

OUR COMMENTS



- We reiterate that satellite payloads are designed to cater for operational use for at least 15 years and this should be considered by the Authority in its decision
- It is also of concern that the draft Plan does not consider the economic impact/value of migrating or not migrating certain services from a particular band
- The economic impact on spectrum licensees and consumers should be a key consideration of the migration

Conclusion

IN CONCLUSION



- In conclusion, we submit that a key objective of the ECA, and indeed the Authority's functions, is to coordinate spectrum to prevent or restrict harmful interference
- We urge the Authority, when finalising the draft Plan, to endeavor to avoid, reduce and eliminate interference to the maximum extent possible
- We reiterate our thanks for the opportunity to comment on the draft Plan and trust that our comments will be of assistance

THANK YOU