European Satellite Operators Association

Frequency Migration Regulation
ICASA Hearings

The risks of proposed migration plan
on the satellite bands

ESOA
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ESOA's Satellite Operators

ASTRIUM Services
avanti communications
EUROASIASAT
eutelsat
HELLAS SAT
hispasat
inmarsat The mobile satellite company™
INTELSAT Closer, by far
SES your satellite company
telenor
TELESPAZIO A Finmeccanica / Thales Company

Not for profit organisation
11 satellite operators
161 satellites
Members provide FSS, BSS and MSS service across Europe and Africa
Serve South Africa, SADC, surrounding oceans and airspace

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Indispensible services put at risk

- Heavy use of satellite bands in South Africa / SADC
- Government and strategic communications
- Complementary services for mobile networks
- Point-to-point trunking
- High-volume data and broadcast transmission
- Emergency and disaster communications
- Rural and remote telephony
- Aeronautical and maritime services
- TV transmission to receive-only earth stations
- Communications for key industry (mining, exploration)

C-band issues

How Much Connectivity is at Risk?

The current numbers…

- 41 satellites operating C band over SADC
- 6 new satellites will carry it soon
- Total coverage of SADC region
- Growth of supply answers region's call

C-band issues

Context

- Familiar debate for international community connected to satcoms
- Use of C band widely discussed, conclusions remain same
- Technical arm of United Nations addressed it:
  - International Telecommunication Union (ITU) provides international regulatory framework for frequency use
  - ITU's supreme body (WRC) has spoken
- In 2007, ITU recognised the necessity to retain C-band in full for satellite services

C-band issues

Reasons for ITU Position

- Majority of Member States sensitive towards consequences to users
- High risk of interference to FSS earth stations
- Proven demand for more FSS at C band
- *Unproven* need for C band by other services
- Links between C band connectivity and economic development
- Indispensability of satellite use of 3.4-4.2GHz

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C-band issues

Risks to Rejecting ITU

- WRC-07 deliberations demonstrate risks to allowing fixed services in 3.4-4.2GHz (unacceptable interference levels)
- WGET, other UN agencies concurred
- ITU reconfirms challenges to FSS/BWA compatibility again and again
  - ITU-R Reports S.2199, M.2109, S1432, and SF.1006
- Also: South Africa should consider regional/global impact of de-harmonising spectrum

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C-band issues

What Problem Are We Solving?

- South Africa has already taken for IMT/BFWA, the lower 200 MHz of C-band (3400-3600 MHz), which are globally allocated to fixed-satellite services
- Current deployment in and usage of existing frequency bands (including the 3400-3600 MHz) by terrestrial wireless services should be studied before looking for additional frequency bands for IMT/BFWA
- With unproven demand & lack of experience, it is premature to decide for change

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C-band issues

New Technologies Can Use Other Bands – Satellites Cannot

- Migration is not an option: Ku band is ***not*** C band
- C band enables operations in worst climatic conditions
  - Ku- and Ka-band more subject to rain fade
- Provides unparalleled reliability
- C band enables global beams connecting whole of Africa
- Allows for lower-cost of services to the region
- Connects with robust terrestrial infrastructure
- Least-developed and equatorial regions have no alternative

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C-band issues

Should Not Jeopardise Infrastructure that Works

- Billions invested in space infrastructure
- C-band missions dedicated to the needs of SA and region
- No other radio service takes local requirements so seriously
  - With such significant investment
  - With such high up-front costs
  - Maximising efficient use of frequencies

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Other satellite issues

L, extended L and S Bands Remain Key

- Mobile satellite use on the rise in Africa
- Planned and ongoing build in L and extended L band satellites – risk to important upfront investment
- Use of L band by fixed service will cause interference that into key MSS services – in SA *and* neighbours
- No interference mitigation possible
- Proposals for S band mean planned services in Europe won't come to SA or neighbours
- Preserving key MSS services means transitioning FS systems *out* of these bands

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Conclusions

- International best practice says: keep C band, L-band, extended L-band and S-band for satellite
- International community has spoken: keep C band for satellite
- Technical studies make clear: C band best for reliable FSS services
- Shared use with FS not feasible in MSS bands
- Terrestrial wireless services should first start using assigned frequency bands before pursuing bands extensively used by existing services
- Should not cut off the connectivity that keeps national and regional economy in growth