

ICASA Long-term Spectrum Outlook

Public hearings, 14 April 2022

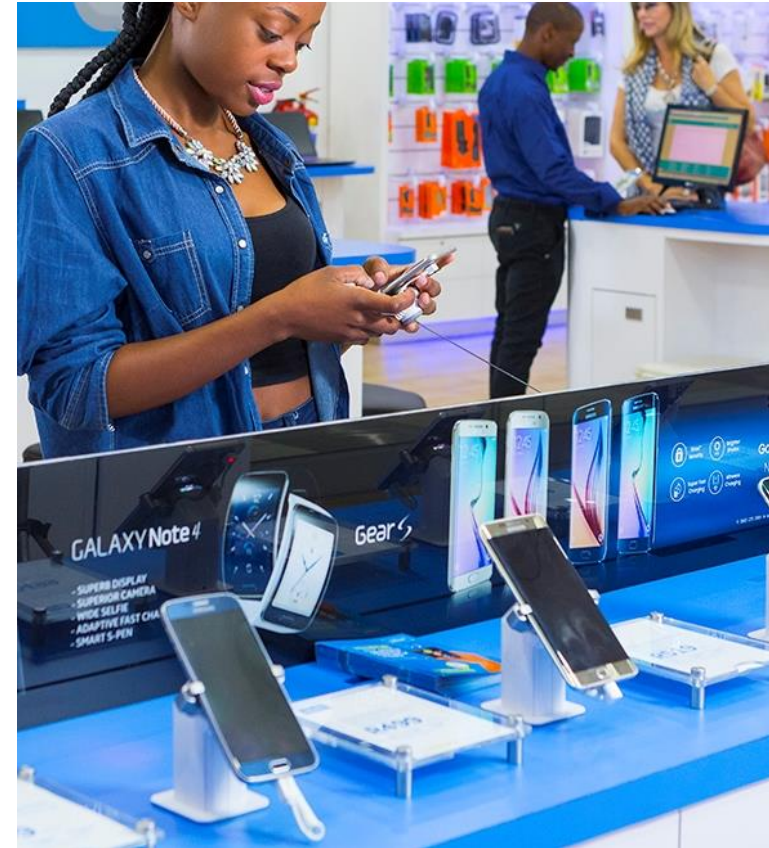
Johan Smit, Fikile Tseeke, Luigi Pavone and Tinus Vos



Telkom

Agenda

1. General remarks
2. Naming of applications
3. IMT
4. Fixed
5. Satellite
6. Frequency sharing



General remarks

- 1 Applaud the Authority for this important initiative
- 2 Long term spectrum planning is critical for industry, mobile and others
- 3 Regulatory certainty in spectrum use remains critical; alignment between documents required
- 4 Spectrum is shared between many services; need coordination procedures
- 5 Must include and discuss national policies (e.g. Integrated ICT Policy White Paper)
- 6 Technology neutrality and refarming vital to ensure efficient use of spectrum
- 7 Spectrum planning must include consideration of competition in the market
- 8 Many questions are complex and require detailed assessments – time was however limited

Naming of applications

Telkom supports the standardisation of naming of applications in the NRFP

- Will also facilitate sharing and compatibility studies within Region 1, in preparation for WRC's
- In Europe, **EFIS is used as a database to compare spectrum use** between countries
- Clarity in implementation of **Applications** in NRFP required – where/when/how?
- Technology neutrality must be maintained, while retaining certainty in band use

Allocations

3 Levels
Part of Radio Regulations
All services defined in ITU, Article 1
Terms used in NRFP

Applications

3 Levels
New terms/technologies
Not used in NRFP
Reference specific technologies

Spectrum outlook - IMT

Spectrum requirements



- Use M.1768 as basis
- Use current parameters and data
- Also refer to Report M.2290

Mid-band spectrum



- Additional bands needed
- 3.7 GHz not available
- Upper 6 GHz at WRC-23

Area assignments



- Could be supported, especially in mmWave bands
- Sharing, e.g. with PTP links, feasible

5G



- All bands, as per Article 5 and NRFP, can be used for 5G in future
- IMT bands endorsed at WRC and therefore supported

Vertical industries



- Can be accommodated on mobile networks with different service levels
- Spectrum set asides not needed

IMT band specific

450 MHz

- Good propagation but limited spectrum (max 2x5 MHz)

600 MHz

- To be discussed at WRC-23; APT adopted 2x40 MHz plan; USA 2x35 MHz plan

1500 MHz

- Supported; noted however that the draft RFSAP is limited to 40 MHz only

1710-2025 MHz

- Parts already assigned for IMT (IMT1800, IMT2100); rest for future IMT terrestrial or satellite

3300 MHz

- Supported; key additional mid-band, adjacent to 3.5 GHz band

3500 MHz

- Band already implemented; was part of the auction, not clear why listed as “possible IMT band”

3700 MHz

- Neither mobile nor IMT; ICASA excluded from spectrum cap calculations in auction; not an IMT band

4900 MHz

- Supported; existing links can be migrated to other PTP bands; additional 190 MHz mid-band spectrum

26/42 GHz

- Supported; key initial 5G bands; to be shared with PTP links and satellite; other mmWave band TBC

Spectrum outlook - Fixed

Sufficient spectrum for PTP links is critical, including for MNOs

- Balance needed between FS and IMT in mmWave bands such as 26 GHz, 38 GHz and 42 GHz –
- Frequency sharing on geographic basis is feasible
- Potentially any FS allocation could be used; dependent on technology and band availability
- Sufficient FS bands in NRFP; bands above 90 GHz will be explored
- Frequency licensing changes: feasible sharing within FS and mobile
- FS links supports several other services such as mobile, video backhaul, FWA, etc.

Spectrum outlook - Satellite

Sufficient spectrum for satellite systems also important

- FSS/MSS frequency bands are needed as more satellite constellations, especially NGSO, are deployed (e.g. OneWeb, Starlink, Kuiper/Amazon, etc.)
- Specific bands should be available for satellite systems, as per the bands coordinated with ITU
- C-Band, requiring large antenna installations, to be deployed in rural areas (Teleports)
- VSAT type services better served through Ku-band and Ka-band
- Additional satellite spectrum in higher bands also to be accommodated

Frequency sharing

Telkom supports frequency sharing as an integral part of spectrum management

- Sharing between links done on daily basis
- National mobile networks, sharing generally not possible due to the “coverage” nature of the mobile service
- Extension of mobile networks are ongoing; MNOs continue deploying base stations to fill the gaps (ICASA QoS drive tests); national access to these bands are therefore essential
- Regional deployments are possible in higher bands, such as mmWave; sharing with PTP links could be implemented
- Aspects of FS and MS are converging; e.g. MFCN/IMT applies to both FS and MS
- Key license exempt bands are 2.4 GHz; 5 GHz and L6 GHz