

Public Hearings

**Second Draft Radio Frequency Spectrum
Assignment Plan for the bands 825-830 MHz and
870-875 MHz**

6-7 September 2018

Telkom



OUTLINE

1. Depiction of IMT850 MHz band

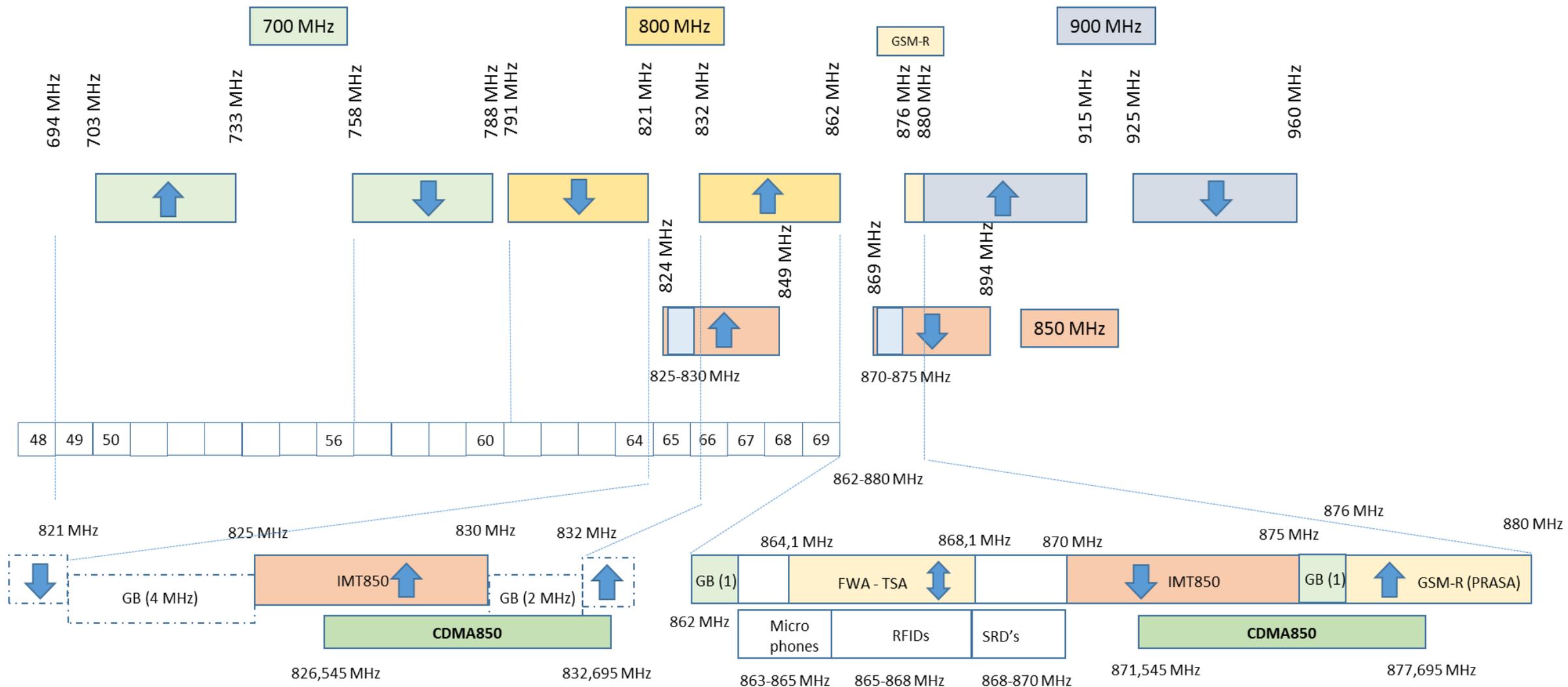
2. Introduction

3. Summary of the main arguments

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1. Depiction of the IMT 850 band



2. Introduction

- It is imperative that the Authority consider all matters pertaining to the current and future use of the 700 MHz/800 MHz/900 MHz frequency range before a decision regarding the use of IMT850 band is made.
- It is premature to considering the creation of the 2x5 MHz IMT850 RFSAP for IMT:
 - No reference to IMT850 or the use of the bands 825 – 830 MHz paired with the 870 – 875 MHz for IMT in the National Radio Frequency Plan 2018; reference to IMT850 was specifically deleted by the Authority.
 - Additional compatibility studies are required before IMT systems can be deployed in this band.
 - It is not clear if 2x3 MHz or 2x5 MHz will be made available for IMT.
 - Impact on licence exempted services (e.g. LoRa and SRD's) must be further considered.
 - Telkom's current and planned future systems in the band 841,1-868,1 MHz must be protected.
 - IMT850 (which was developed for ITU Region 3 countries) is not compatible with 800 MHz & 900 MHz.
 - SADC and South Africa concurred that the use of 850 MHz in the region is not appropriate.
- Migration of Neotel's (Liquid) CDMA-2000 systems from the band is supported.

3. Summary of main arguments

Use of 850 MHz band for IMT in South Africa

- The bands 825-830 MHz paired with 870-875 MHz, or IMT850, is not identified as an IMT band in the approved NRFP-2018.
- In line with SADC and ITU Radio region 1, IMT850 should not be used in South Africa for IMT.
- Compatibility with IMT800, GSM-R, SRDs and FWA has not been proven; sharing and compatibility studies must be conducted.
- 4 MHz guard band between IMT850 and IMT800 MHz not sufficient.

Impact of IMT850 on licence exempt services in the adjacent band

- 863-870 MHz is used for various licence exempt type services, i.e. SRDs including wireless microphones, RFIDs and non-specific SRDs.
- The use of these licence exempted services must be considered, even if these operate on Non-Interference-non-Protection (NINP) basis.
- Use of the band below 870 MHz for, amongst others LoRaWAN providing IoT services must be protected due to substantial investments made.

Impact of IMT850 on Telkom's licensed services

- Telkom's existing and planned future FWA systems operating in the licenced band 864.1-868.1 MHz (see NRFP-18) must be protected.
- The Authority ostensibly did not consider Telkom's use of this band in drafting the draft IMT850 plan.
- The use of IMT850 will result in only 1.9 MHz guard band between IMT850 systems and Telkom's TDD systems; there is no evidence to prove that Telkom's systems will be protected.

Use of IMT850 by Neotel (Liquid Telecom)

- Telkom could support the move of CDMA 850 MHz assignments downwards, as an interim measure, to accommodate GSM-R.
- This does not mean that Liquid Telecom CDMA850 assignment (individual 1.23 MHz CDMA-2000 channels) will be "converted" to an IMT850 assignment (i.e. 2x5 MHz).
- Telkom does not support the creation of IMT850 until all issues of harmful interference with other services have been adequately addressed.

4. General comments pertaining to draft IMT850 RFSAP (1/2)

Protection of license exempted applications

- Telkom agrees with the principle of operating on a non-interference-non-protection basis
- Nevertheless, the Authority must acknowledge and consider that several LPWAN networks have been deployed in the band below 870 MHz on a national basis by several operators; these investments and services must be considered and protected, even if operating on a licence exempted basis.
- The use of apparatus on a license exempted basis is carefully considered to ensure that the probability of interference is minimal; introducing new services (i.e. IMT850) may change this delicate balance in the use of 863-870 MHz, sharing and compatibility studies will be required to ensure continued use of these existing services.
- As per s.30(3) of the ECA, the Authority “*must...ensure that in the use of the radio frequency spectrum harmful interference to authorised or licensed users of the radio frequency spectrum is eliminated or reduced to the extent reasonably possible*”.

Cross border coordination

- The procedure stipulating cross border coordination, even if it is acceptable as a way forward in dealing with harmful interference, has not been agreed within SADC or specifically with our neighbouring countries, to whom it will apply.
- The proposed incomplete process cannot be prescribed as regulation before the requisite agreement with neighbouring countries has been obtained and the implementation details have been concluded.

4. General comments pertaining to draft IMT850 RFSAP (2/2)

Use of IMT850

- Telkom could support the downward shift of Liquid's CDMA-2000 assignments, as an interim measure, to allow operation of the GSM-R systems (PRASA) at 900 MHz.
- However, this should not guarantee Liquid automatic access to the full IMT850 band on a national basis, if this band is indeed created.
- As per draft RFSAP, an ITA should be published to obtain access to the IMT850 band.
- Nevertheless, Telkom does not support the creation of the IMT850 band for SA due to the many foreseen sharing and compatibility issues with other existing and planned services.

Transitional arrangements

- The time lines for the implementation of the transitional arrangements and eventually the creation of IMT850 and related matters are not clear from the draft RFSAP. These need to be clarified.
- CDMA850 services within the existing CDMA-2000 assignment, must migrate "systematically" to the designation band; there is no prescribed time frame from the completion of this process.
- Considerations 2b and 3b are a "long-term" solution when CDMA850 has ceased and IMT850 is deployed; there is no indication as to what time frame is being considered.
- Further uncertainty w.r.t. timelines arise pertaining to conversion from GSM-R to LTE-R and the potential creation of a 4 MHz guard band between IMT850 and LTE-R; again no time lines are provided.

5. Summary

- It is premature to create and IMT850 Radio Frequency channels plan in South Africa due to potential sharing and compatibility issues with other services and applications.
- The draft IMT850 RFSAP is incomplete and there are several unresolved and unclear matters, which have to be addressed before this plan can be finalised.
- Telkom does not support the creation of the proposed IMT850 plan due to its potential impact on IMT800, LoRaWAN, SRD's, etc.
- Telkom supports the migration of CDMA-2000 systems from the 850 MHz band; the interim shift in Liquid's assignments can be made without the creation on an IMT850 RFSAP.
- If an IMT850 band is created, access to the band must be provided through an ITA on equal basis to all operators (no "upgrade" of Liquid's assignment to be made).

Questions and Answers

Telkom