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GENERAL NOTICES • ALGEMENE KENNISGEWINGS

INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA

NOTICE 3712 OF 2025

ELECTRONIC COMMUNICATIONS ACT, 2005 (ACT NO. 36 OF 2005)

HEREBY ISSUES A NOTICE REGARDING THE SECOND DRAFT INTERNATIONAL MOBILE TELECOMMUNICATIONS ROADMAP.

1. The Independent Communications Authority of South Africa ("the Authority"), on 28 March 2024, published the Draft International Mobile Telecommunications (IMT) Roadmap, in Government Gazette No. 50413 (Notice 4584 of 2024) inviting Written Representations.
2. On 13 September 2024, in Government Gazette 51244 (Notice 5209 of 2024) the Authority published a "Notice Communicating the Outcome of the Consultation Process of the Draft IMT Roadmap 2025.
3. Now therefore, the Authority publishes the Second Draft International Mobile Telecommunications (IMT) Roadmap 2025, in terms of section 4(3)(c) of the Independent Communications Authority of South Africa Act, 2000 (Act No. 13 of 2000), read with sections 2(e), 30, 31(4), and 33 of the Electronic Communications Act (Act No 36 of 2005).
4. Interested persons are hereby invited to submit written representations on the Second Draft IMT Roadmap 2025 in both Microsoft Word (MS) and Portable Document Format (PDF) by no later than 16:00 on **16 February 2026.**
5. Persons making representations are further invited to indicate whether they require an opportunity to make oral representations.
6. Written representations or enquiries may be directed by email to:

Attention:

Mr Manyaapelo Richard Makgotlho

e-mail: rmakgotlho@icasa.org.za

Copy: jdikgale@icasa.org.za

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7. Where persons making representations require that their representation, or part thereof, be treated as confidential, then an application in terms of section 4D of the ICASA Act, 2000 (Act No 13 of 2000) must be lodged with the Authority. Such an application must be submitted simultaneously with the representation, together with a non-confidential, redacted version of the submission. If, however, the request for confidentiality is not granted, the person making the request will be allowed to withdraw the representation or document in question.
8. The guidelines for confidentiality requests are contained in Government Gazette Number No 41839 of 17 August 2018.
9. All written representations submitted to the Authority pursuant to this notice will be made available for inspection by interested persons from **19 February 2026** at the Authority's Library. Electronic copies of such representations are obtainable on request and printed versions will be obtainable on payment of a fee.
10. The Second Draft IMT Roadmap 2025 and the non-confidential representations will be uploaded to the ICASA website under this link: https://www.icasa.org.za/legislation-and-regulations/radio-frequency-spectrum-plans/draft-radio-frequency-spectrum-plans.



MOTHIBI RAMUSI

CHAIRPERSON

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1 ABOUT THIS DOCUMENT

1. The International Mobile Telecommunications (IMT[1]) Roadmap 2025 is the latest in a series of steps carried out by the Authority to support spectrum management and long-term planning. The IMT Roadmap 2025 updates and repeals the IMT Roadmap 2014 and IMT Roadmap 2019. IMT, and particularly mobile broadband services, are a critical input into a variety of social and economic activities in South Africa. There has been a substantial increase in demand for mobile broadband in South Africa over the past years, which means that there is a need for additional spectrum for mobile services for capacity purposes. In addition, there is a need for universal mobile broadband access in South Africa in general, which means that radio frequency spectrum is also needed for coverage purposes. It is also important to note the advantage of lower frequency bands for this purpose where propagation qualities are significantly better than that of the higher frequency bands. The IMT Roadmap 2025 sets out the Independent Communications Authority of South Africa's ("the Authority") approach towards assigning radio frequency spectrum to IMT for these purposes.

2. The IMT Roadmap is the process by which the Authority, which operates in terms of the Independent Communications Authority of South Africa Act, 2000 (Act No. 13 of 2000) ("ICASA Act"), updates its vision for IMT spectrum in South Africa over the medium to long term (5-10 years), aligned with international trends and ITU-R Recommendations and Resolutions for IMT. A broad variety of capabilities and applications foreseen as part of the IMT deployment scenarios are described in detail in various ITU recommendations, the latest being for the development of the terrestrial component of IMT for 2030 and beyond (IMT-2030)[2]. The latter Recommendation includes enhancement and evolution of existing IMT services.

3. This document describes the frequency bands identified for IMT, emanating from the World Radio Conference 2023 ("WRC-23") and from the National Radio Frequency Plan 2025 ("NRFP-25"), being developed in parallel to the development of this document.[3] The Frequency Migration Plan 2025 is also currently being developed, updating the 2019 Frequency Migration Plan. In bands where there are existing licensees, these licensees may need to be migrated. For those bands where the migration process is complex, the Authority develops feasibility studies.[4] This IMT Roadmap sets out the initial feasibility studies for such migrations.

4. The Authority's objectives where the IMT Roadmap is concerned are derived from section 2 of the Electronic Communications Act, 2005 (Act No. 36 of 2005), ("ECA"), and are as follows:

> *"(c) promote the universal provision of electronic communications networks and electronic communications services and connectivity for all;*
>
> *(d) encourage investment, including strategic infrastructure investment, and innovation in the communications sector;*

[1] IMT is defined in the International Telecommunications Union ("ITU") Resolution ITU-R 56, and the principles for its development are described in Resolution ITU-R 65. The term 'IMT' refers to "IMT-2000", "IMT-Advanced", "IMT-2020", and "IMT-2030".

[2] See Recommendation ITU-R M. 2160.

[3] Note that the Draft NRFP can be downloaded from the Authority's website on the URL: https://www.icasa.org.za/legislation-and-regulations/draft-radio-frequency-plan-2025-nrfp , Government Gazette 52449 (Notice 3109 of 2025).

[4] Notice regarding the Radio Frequency Migration Regulations 2013, Government Gazette 36334 (Notice 352 of 2013).

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(e)ensure efficient use of the radio frequency spectrum;

…

(m) ensure the provision of a variety of quality electronic communications services at reasonable prices;

(n) promote the interests of consumers with regard to the price, quality and the variety of electronic communications services;

…

(y) refrain from undue interference in the commercial activities of licensees while taking into account the electronic communication needs of the public;

(z) promote stability in the ICT sector."

5. The IMT Roadmap 2025 identifies which of these IMT bands, between 450MHz and 71GHz, could be deployed in South Africa.

6. The eventual assignment to IMT is made through a Radio Frequency Spectrum Assignment Plan (RFSAP). The first IMT RFSAPs were published in 2015.[5] Further, IMT RFSAPs were finalised in 2022,[6] and 2023[7].

7. This document forms part of the evolution of spectrum planning documents starting with SABRE 1 of 1997 through to the latest Final acts of the latest WRC-23. This takes into consideration the long-term planning process associated with Spectrum planning, with a view of ensuring that spectrum is made available for the highest value use and in turn, therefore ensuring efficient use.

8. A key driver for the deployment of IMT bands is the need to ensure that mobile broadband meets the objectives of 'broadband for all', which is encapsulated in the targets of the SA Connect policy published in 2013.

9. The rest of this document is set out as follows. First, the legislative framework pertaining to radio frequency spectrum management is set out. Next, the international context is explained. Third, technical and deployment matters are explained. Fourth, demand forecasts for South Africa are considered.

2 EXECUTIVE SUMMARY

10. There is substantial growth in demand for broadband services in South Africa, and rapid advancements in new broadband technologies internationally. There is thus a need for spectrum planning for broadband where IMT is concerned. In summary, this IMT Roadmap includes the following:

11. **The policy and regulatory framework** in which spectrum planning takes place is set out in the ICASA Act, the ECA, ministerial policies, and regulations issued by ICASA (see Section 3). Especially relevant for the planning of IMT spectrum is the National Broadband Plan, 2010, which sets out broadband speed targets to be achieved. Important ICASA regulations connected

[5] Government Gazette No. 38640 (Notices 270 to 278 of 2015).

[6] Government Gazette No. 47788 (Notices 2886 to 2891 of 2022).

[7] Government Gazette No. 48353 (Notices 3243 to 3246 of 2023).

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with the IMT Roadmap are the National Radio Frequency Plan ("NRFP") 2021[8] (currently in force) while an updated NRFP is currently being developed. The Spectrum Migration Plan 2013 is also relevant.[9]

12. **International context (Section 4):** Section 4(1)(c) of the ICASA Act stipulates that ***"the Authority, subject to section 231 of the Constitution, must act in a manner that is consistent with the obligations of the Republic under any applicable international agreement."*** Further, section 4(3)(c) stipulates that ***"the Authority must control, plan, administer and manage the use and licensing of the radio frequency spectrum in accordance with bilateral agreements or international treaties entered into by the Republic …"*** Accordingly, for the Authority to control, plan, administer, and manage the use and licensing of the radio frequency spectrum effectively the Authority is an active participant in processes established by international organisations that carry out spectrum planning, including the International Telecommunications Union ("ITU"), the African Telecommunications Union ("ATU"), and the Communications Regulatory Authority of Southern Africa ("CRASA"). Participation in these international organisations is important in order to ensure that South Africa adopts plans for radio frequency spectrum that minimise harmful interference, and that result in customers in South Africa benefiting from the economies of scale resulting from the widespread adoption of standard technologies.

13. **Technical and deployment matters (Section 5):** It is important that South Africa's approach to spectrum planning is harmonised with that of the rest of the world, for the reasons explained above. It is also important that South Africa adopts approaches to spectrum utilisation that are flexible in nature, in order to permit the introduction and growth of new technologies. Furthermore, modern approaches to technical spectrum management need to be promoted, including using total radiated power ("TRP"), rather than equivalent isotropically radiated power ("EIRP").

14. **IMT in South Africa (Section 6)**: Currently, 1 155MHz of spectrum is identified for IMT and RFSAPs have been issued or licenses for IMT have been issued, 794MHz of which has been assigned for IMT use to licensees. There is a further 1 145MHz of mid-band spectrum for which feasibility studies are under development in this IMT Roadmap 2025.

15. **Forecasts of demand for IMT (Section 7):** It is likely that the amount of spectrum needed for IMT is considerably higher than the amount of spectrum currently allocated for this purpose. There is a significant degree of uncertainty on how much spectrum may be needed for IMT, which might be as low as approximately 3 000MHz in the event that only a small proportion of the population uses their devices in the busy hour, and if significant numbers of connections are offloaded to fibre to the premises (FTTX) including via Wifi. There may also be substantially greater demand, in excess of 14 000MHz, in the event that FTTX/WiFi offload is low, and busy hour usage is high. Furthermore, the population-density based methodology applied here excludes machine to machine connections, of which there are a growing number. Of the 94m active mobile subscriptions, approximately 13m (approximately 14%) are machine to machine subscriptions. While it is difficult to forecast the amount of spectrum needed with any degree of precision, it is highly likely that considerably greater amounts of spectrum are likely needed for IMT.

[8] Government Gazette 46088 (Notice 911 of 2022).

[9] Notice regarding the Radio Frequency Migration Regulations 2013, Government Gazette 36334 (Notice 352 of 2013).

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16. **Preparing RFSAPs for existing assignments in the 1800MHz and 2100MHz bands (Section 8):** RFSAPs have not been developed for the 1800MHz and 2100MHz bands, and existing licences in this band refer to TRP rather than EIRP which, as mentioned above, needs to be updated.

17. **Initial feasibility studies for additional IMT bands (Section 9):** The initial feasibility studies, based on the recommended allocation of the band for IMT by the WRC, spectrum auctions and thus the value of the band for IMT, device availability, and stakeholder comments, are:

    17.1. 1880-1920MHz: RFSAP recommended for this band.

    17.2. 3600-3800MHz: RFSAP recommended for this band.

    17.3. 4800-4990MHz: RFSAP recommended for this band.

    17.4. 6425-7125MHz: RFSAP recommended for this band.

    17.5. 24.24-27.5MHz: RFSAP recommended for this band.

    17.6. 37-43.5GHz: RFSAP recommended for this band.

    17.7. 47.2-48.2GHz: RFSAP recommended for this band.

    17.8. 66-71GHz: Developments in this band are to be monitored.

18. **Obligations for licensees (Section 10):** Obligations for licensees include those relating to coverage and quality of service:

    18.1. There are significant coverage gaps in mobile broadband services in rural areas. At the same time population density in those provinces is low. There are broadly, two approaches to address those coverage gaps: First, rollout obligations could be considered in 'coverage lots' in future spectrum auctions, which need to take into account relevant activity points and reasonable coverage obligations. Second, HIBS services could be considered as a means of achieving full coverage.

    18.2. Quality of service ("QoS"), including broadband speeds experienced by end users, is an important feature of IMT services. Broadband speeds can be measured and monitored directly or by using crowd-sourced data. Furthermore, coverage maps with details on transmitters, emissions, and the like, are also a means of measuring QoS.

19. **Timelines for migration (Section 11):** Section 3.3 of the Radio Frequency Spectrum Migration Regulations requires that a number of factors be take into account where timelines for migration are concerned, including: "*the duration of the spectrum licence, the time frame to migrate existing customers (end users), the economic life of the equipment installed, and adequate forward planning*.[10]" The current timelines proposed are as follows (discussed in more detail in Section 11):

    19.1. 2025-2026: Draft RFSAPs published for: 1710-2200MHz, 1880-1920MHz, 3600-3800MHz, 4800-4990MHz, 6425-7125MHz, 24.24-27.5MHz, 37-43.5GHz, 47.2-48.2GHz, 66-71GHz.

    19.2. 2026-2027 Final IMT RFSAPs to be developed.

[10] Government Gazette 50389 (Notice 4559 of 2024).

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19.3. 2027-2028: RFSAP for IMT systems implementation in terms of section 31(3) of the ECA.

19.4. 2028+: Deployment of IMT systems.

3 SOUTH AFRICAN POLICY AND REGULATORY FRAMEWORK

3.1 The Independent Communication Authority of South Africa Act, 2000 (Act No. 13 of 2000)

20. The Independent Communications Authority of South Act, 2000 (Act No.13 of 2000) confers upon the Authority its powers and duties. Section 4(3) of the ICASA Act provides that the Authority:

"(c) must control, plan, administer and manage the use and licensing of radio frequency spectrum in accordance with bilateral agreements or international entered into by the Republic;"

3.2 The Electronic Communications Act, 2005 (Act No. 36 of 2005)

21. The ECA regulates electronic communications in the Republic of South Africa. The objectives of the ECA that are of relevance to the current process are set out in Paragraph 4 above.

22. Section 30(1) of the ECA provides that:

"In carrying out its functions under this Act and the related legislation, the Authority controls, plans, administers and manages the use and licensing of the radio frequency spectrum except as provided for in section 34."

23. Section 30(2) provides that the Authority must:

> *"(2)'In controlling, planning, administering, managing, licensing and assigning the use of the radio frequency spectrum, the Authority must -*
>
> > *(a) comply with the applicable standards and requirements of the ITU and its Radio Regulations, as agreed to or adopted by the Republic as well as with the national radio frequency plan contemplated in Section 34;*
> >
> > *(b) take into account modes of transmission and efficient utilisation of the radio frequency spectrum, including allowing shared use of radio frequency spectrum when interference can be eliminated or reduced to acceptable levels as determined by the Authority;*
> >
> > *(c) give high priority to applications for radio frequency spectrum where the applicant proposes to utilise digital electronic communications facilities for the provision of broadcasting services, electronic communications services, electronic communications network services, and other services licensed in terms of this Act or provided in terms of a licence exemption;*
> >
> > *(d) plan for the conversion of analogue uses of the radio frequency spectrum to digital, including the migration to digital broadcasting in the Authority's preparation and modification of the radio frequency spectrum plan; and*

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(e) give due regard to the radio frequency spectrum allocated to security services."

24. Section 30(3) provides that:

"The Authority must, in performing its functions in terms of subsection (1), 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."

25. Section 31(4) provides that, the Authority may amend a radio frequency spectrum licence-

"(a) to implement a change in the radio frequency plan;

(b) in the interest of orderly radio frequency spectrum management;

(c) to effect the migration of licensees in accordance with a revised radio frequency plan or the transition from analogue to digital broadcasting"

26. Section 33 of the ECA speaks to frequency co-ordination, and subsection 3 provides that

"(3) The Authority must prescribe regulations governing the co-ordination contemplated in sub-section (1), which may include a process for the resolution of disputes among radio frequency licensees on an expedited basis."

3.3 Ministerial policies

27. In terms of Section 3(1) of the ECA, the Minister may make policies on national matters applicable to the ICT sector, consistent with the objectives of the ECA and of the relevant legislation in relation to amongst others:

"(a) the radio frequency spectrum…

(c) the Republic's obligations and undertakings under bilateral, multilateral, or international treaties and conventions, including technical standards and frequency matters

(d)The application of new technologies pertaining to electronic communications services, broadcasting services and electronic communications networks"

28. In particular, the National Broadband Policy: South Africa Connect: Creating Opportunities, Ensuring Inclusion' ("SA Connect Policy"), which is South Africa's Broadband Policy, was brought into effect in November 2013 by the Department of Communications ("DoC"). The policy aims to create a seamless information infrastructure, which is accessible to and affordable for South Africans.

29. South Africa Connect plays an important role in defining spectrum requirements for government policy directives. The overall goal is to achieve a universal average download speed of 100 Mbps by 2030. The 2020 vision for broadband is to provide 100% of South Africans with broadband services at 2.5% or less of the population's average monthly income.

30. The objectives of the SA Connect Policy (Section 3[11]) are, among others, to ensure:

[11] Department of Communications. 2013. South Africa's Broadband Policy: South Africa Connect: Creating Opportunities, Ensuring Inclusion, available at: https://www.dcdt.gov.za/images/documents/Broadband/gazette_version_1__bb_policy__4_dec_2.pdf

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"affordable broadband available nationally to meet the diverse needs of public and private users, both formal and informal, consumers and citizens;

policy and regulatory conditions that enable public and private sector players to invest and also contribute;

public sector delivery, including e-government services, underpinned by the aggregation of broadband needs;

that all public institutions at the national, provincial, and municipal level should benefit from broadband connectivity, and this should be extended to the communities they serve;

to establish a framework such that public and private enterprises, formal and informal, are able to fully exploit the efficiencies offered by ubiquitous broadband and its potential for innovation."

31. The SA Connect Policy includes the following targets and timeframes for access to broadband in South Africa:

Table 1: SA Connect Policy Targets

Target	Penetration Measure	Baseline (2013)	By 2016	By 2020	By 2030
Broadband access in Mbps user experience	% of population	33.7% internet access	50% at 5 Mbps	90% at 5 Mbps 50% at 100 Mbps	100% at 10 Mbps 80% at 100 Mbps
Schools	% schools	25% Connected	50% at 10 Mbps	100% at 10 Mbps 80% at 100 Mbps	100% at 1 Gbps
Health facilities	% of health facilities	13% Connected	50% at 10 Mbps	100% at 10 Mbps 80% at 100 Mbps	100% at 1 Gbps
Government facilities	% of Government offices		50% at 5 Mbps	100% at 10 Mbps	100% at 100 Mbps

32. The Minister also released a next-generation frequency policy in 2024.[12] In relation to IMT spectrum, the latter policy sets out that:

"23.2(g) The Authority must investigate and report with recommendation(s) to the Minister, a framework for the release of spectrum for community use and identify IMT spectrum that can be designated for transformation objectives of community networks, including conditions for the distribution of free basic data to the determined beneficiaries, within a year (1) of publication of this spectrum policy."

33. Investigating a framework for the release of spectrum and providing a report to the Minister within a year of publication of the policy may not be feasible due to the Authority's infrastructure, financial and capacity challenges; and also considering that the policy was published on 28 May 2024, leaving the Authority with about 7 months to conduct the investigation. This may not be necessary due to the Authority has already taken care of the issue as per below.

[12] Government Gazette 50725 (Notice 166 of 2024).

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34. The Authority has already made provisions in Section 13 of the "Invitation To Apply on the Licensing process for IMT in respect of the provision of Mobile Broadband Wireless Access Services[13] (" the ITA"), whereby;

"In cases where the spectrum is not fully utilised by the licensee within five (5) years of issuance of the Radio Frequency Spectrum Licences, the Authority will initiate the following process for the Licensee:

to share unused spectrum in all areas to ECNS licensees who may, inter alia, combine licensed spectrum in any innovative combinations in order to address local and rural connectivity in some municipalities including by entrepreneurial SMMEs;"

35. Further, the ITA also provides for "Open Access Obligations"[14]:

"A Licensee assigned spectrum through this auction process is required to provide open access to MVNOs which must have 51% ownership held by persons from Historically Disadvantaged Persons. This provision shall become licence conditions for licences issued in this auction process. The Licensee assigned spectrum through this auction process shall be required to submit to the Authority within a period of between 3 – 6 months the business plans to ensure that the MVNOs are sustainable for the period of 3 years."

36. Section 21 of the next-generation radio frequency policy also considers IMT spectrum[15], as follows:

*"(a) Due to limitations in spectrum availability, and considering that in certain spectrum bands, demand for access to spectrum resources exceeds supply, such spectrum bands shall be deemed as "*high-demand spectrum*".*

*(b) The International Mobile Telecommunications (IMT) spectrum bands as updated from time to time in the National Radio Frequency Plan are classified as "*high-demand spectrum*" in line with (a) above."*

37. The Authority's process in this regard is prescribed in regulation 6 and 7 of the Radio Frequency Spectrum Regulations 2015, that is, *"Extended Application Procedure"* and *"Procedure Where There is Insufficient Spectrum to Meet Demand or Where an ITA is Published"*.

38. The Authority currently licences IMT bands by issuing an ITA in terms of regulations 6 and 7 of the Regulations.

3.4 The National Radio Frequency Plan

39. The NRFP plays an important role in the IMT roadmap, since the NRFP sets out spectrum allocations to different services in South Africa. The NRFP 2021 is currently in force.[16] The Authority is in the process of developing the National Radio Frequency Plan 2025 based on the Final Acts of WRC 23 and the 2024 Edition of the ITU Radio Regulations.

40. The IMT roadmap and national frequency plan (NRFP) are being updated concurrently.

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[13] Government Gazette 45628 (Notice 717 of 2021).

[14] Government Gazette 45628 (Notice 717 of 2021), see Section 12.3.

[15] Government Gazette 50725 (Notice 166 of 2024).

[16] Government Gazette 46088 (Notice 911 of 2022).

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3.5 Radio Frequency Migration Regulations and Radio Frequency Migration Plans

41. The Radio Frequency Migration Regulations ("RFMR 2013") were issued together with the first Radio Frequency Migration Plan in 2013 ("RFMP 2013")[17] and was updated and superseded by the Radio Frequency Migration Plan in 2019 ("RFMP 2019")[18].

42. Radio frequency migration is carried out in the following circumstances (Section 4 of the RFMR 2013):

    42.1. If this is specified in the Frequency Migration Plan;

    42.2. In order to comply with the ITU's radio regulations, or following from WRC final acts;

    42.3. Where a change is needed in order to harmonise spectrum use with SADC countries;

    42.4. Where the Authority deems it necessary for the efficient use of spectrum or to comply with the Objects of the ECA;

    42.5. Where a radio frequency assignment needs to be amended such as for in-band migration, in order to achieve the efficient use of spectrum;

    42.6. Where a requirement specific to South Africa requires this, such as protection of central astronomy advantage areas in terms of the Astronomy Geographic Advantage Act, Act no 21 of 2007.

43. The draft radio frequency migration plan 2025 is currently being consulted on and is linked with the IMT roadmap where migration involving IMT bands is concerned.

3.6 Radio Frequency Spectrum Assignment Plans

44. A number of RFSAPs have been developed and updated over time by the Authority. The first IMT RFSAPs were published in 2015,[19] which were later superseded. RFSAPs for IMT bands were also published in 2020[20], 2022,[21] 2023[22], and 2024[23].

45. The process of frequency migration is carried out in terms of the Radio Frequency Spectrum Regulations 2015 ("RFSR 2015") and the process is described in the RFMR 2013, as follows:

    45.1. Preparation of an RFSAP for the particular band or bands (Regulation 3);

    45.2. Amendment of a Radio Frequency Spectrum Licence where necessary (Regulation 9).

    45.3. When it has been established that migration is required, then the time frame for migration needs to be specified.

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[17] Government Gazette 36334 (Notice 352 of 2013).

[18] Government Gazette 42337 (Notice 166 of 2019).

[19] Government Gazette 38640 (Notices 270-278 of 2015).

[20] Government Gazette 43341 (Notice 284-285 of 2020).

[21] Government Gazette 47788 (Notices 2886 to 2891 of 2022) and Government Gazette 47763 (Notice 2879 of 2022).

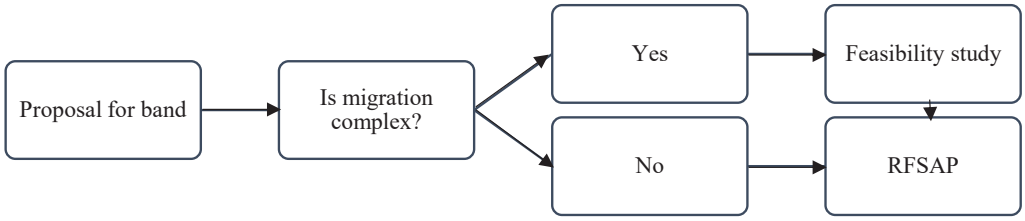
[22] Government Gazette 48353 (Notices 3243 to 3246 of 2022) and Government Gazette 49556 (Notices 3999 and 4000 of 2023).

[23] Government Gazette 50657 (Notice 4824 of 2024).

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45.4. In some cases, it is necessary to carry out a feasibility study on the band in question. This is illustrated in the process flow indicated on Figure 1.

Figure 1: Process for developing an RFSAP



46. RFSAPs may include the following (Regulation 3(1) of the RFSR 2015):

"the types of services to be provided;

specific terms and conditions for the use of the frequency bands;

specific qualification criteria to be met by applicants;

the procedures and timetable to be followed for assignment and licensing, if applicable;

the apportionment of the relevant frequency bands in the Radio Frequency Plan for exclusive or shared assignments;

detailed frequency channelling arrangements; and

any other requirement that the Authority may deem necessary."

47. RFSAPs may, in terms of Regulation 3(2) of the RFSR 2015, be limited to only specific geographic areas or parts of the radio frequency spectrum. An RFSAP must indicate whether the band is proposed to be assigned on a first-come first-served or competitive basis in terms of Regulation 3(3). It is possible for the Authority to assign spectrum on a shared basis (Regulation 3(4)), and access to radio apparatus used for the band may be restricted (Regulation 3(5)).

48. The RFMR 2013 set out the following where RFSAPs and Frequency Migration Plans ("FMPs") are concerned:

"The requirement for a feasibility study is usually, but not necessarily, indicated in the Frequency Migration Plan. Where the results of such a feasibility study indicate a change in use of the band in question, a RFSAP will be carried out.

The RFSAP will be subject to a consultation process.

The Frequency Migration Plan does not necessarily identify destination bands for out-migrating users or uses because the appropriate destination band will vary from user to user depending on the requirements of the user. The spectrum pricing regime is intended to facilitate this process and guide users to the 'optimum' choice."

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4 INTERNATIONAL CONTEXT

4.1 Capabilities of IMT

4.1.1 Overview

49. The term 'IMT' refers to the series of mobile broadband technologies standardised by the ITU, and used for radiofrequency spectrum planning.[24] The capabilities of IMT have evolved significantly over time, beginning with IMT-2000 (used to deploy 3G mobile services, although the ITU does not define "3G" or later "4G", "5G", or "6G" services), followed by IMT Advanced (used to offer 4G services), IMT-2020 (which 5G is based on), and IMT-2030 (forthcoming 6G services).[25] All of the latter technologies have evolved over time, and the term IMT refers to all of them.

50. IMT standards include terrestrial IMT, and non-terrestrial IMT standards, including satellite services, which were first included in the IMT-2000 standard.[26] The IMT-2030 framework also includes:

"External standards developing organizations involved in the development of IMT radio interface technologies have ongoing standardization activities that facilitate IMT interworking with nonterrestrial networks of IMT (including satellite communication systems, HIBS and UASs), as well as with other non-IMT terrestrial networks (including RLAN and broadcast)."

51. This IMT roadmap refers only to the terrestrial component of IMT, although internetworking is taken into account.

52. The development trajectory of the IMT standards and their deployment is shown on Figure 2.

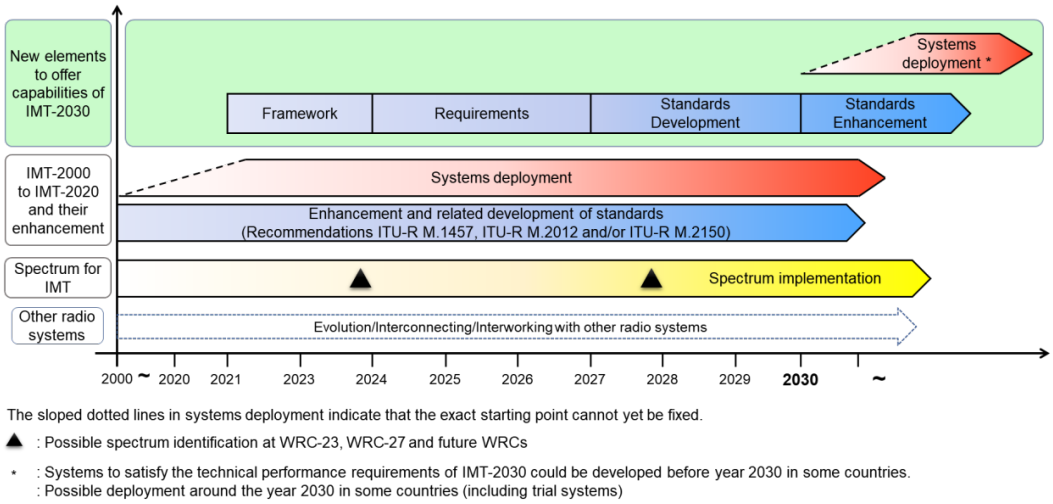
[24] See: https://www.itu.int/en/itu-r/documents/itu-r-faq-imt.pdf

[25] See: ITU-R 56.3, available at: https://www.itu.int/dms_pub/itu-r/opb/res/R-RES-R.56-3-2023-PDF-E.pdf

[26] See: https://www.itu.int/en/itu-r/documents/itu-r-faq-imt.pdf

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Figure 2: Timeline for the development of IMT between IMT-2000 and IMT 2030



The sloped dotted lines in systems deployment indicate that the exact starting point cannot yet be fixed.

▲ : Possible spectrum identification at WRC-23, WRC-27 and future WRCs

* : Systems to satisfy the technical performance requirements of IMT-2030 could be developed before year 2030 in some countries.
: Possible deployment around the year 2030 in some countries (including trial systems)

Source: ITU, Recommendation M.2160 https://www.itu.int/rec/R-REC-M.2160-0-202311-I/en

4.1.2 IMT-2000 and IMT-Advanced

53. IMT-2000 and IMT-Advanced have the following features, according to the ITU:[27]

"a high degree of commonality of functionality worldwide while retaining the flexibility to support a wide range of services and applications in a cost efficient manner;

compatibility of services within IMT and with fixed networks;

capability of interworking with other radio access systems;

high quality mobile services;

user equipment suitable for worldwide use;

user-friendly applications, services, and equipment;

worldwide roaming capability; and,

enhanced peak data rates to support advanced services and applications: Initially peak data rates of 100 Mbit/s for high and 1 Gbit/s for low mobility were established as targets for IMT-Advanced systems."

4.1.3 IMT-2020

54. IMT-2020, which enabled 5G technologies, provided considerable advances on IMT-2000 and IMT-Advanced. According to the ITU:[28]

[27] See: https://www.itu.int/en/itu-r/documents/itu-r-faq-imt.pdf

[28] See: https://www.itu.int/en/itu-r/documents/itu-r-faq-imt.pdf

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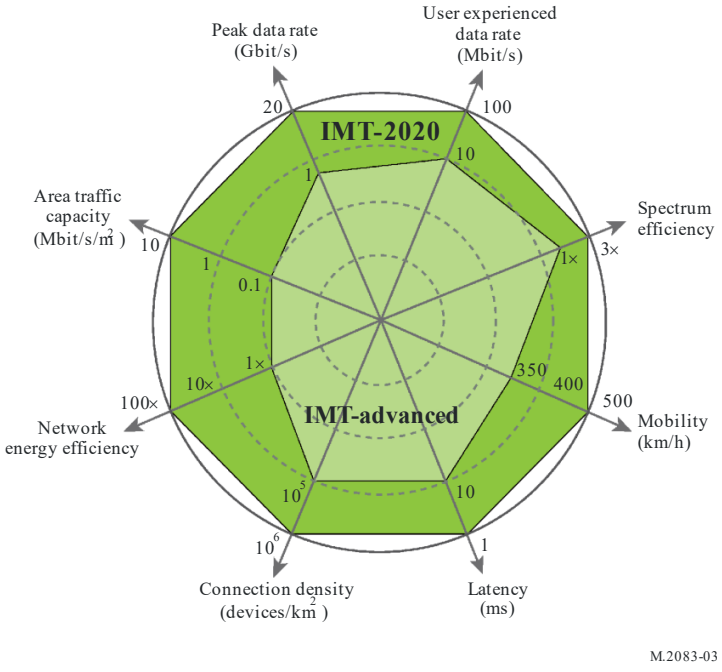
"The scope of IMT-2020 (5G) is much broader than the previous generations of mobile broadband communication systems and IMT-2020 is designed to provide more capacity for social media, video streaming and other things we are already doing today, but also for new innovative use cases such as securely streaming high-quality video from an ambulance to the hospital and enabling a range of new types of smart devices and industry digitalization. New demands, such as more traffic volume, many more devices with diverse service requirements, better quality of user experience (QoE) and better affordability by further reducing costs, required an increasing number of innovative solutions, which can be provided by the radio interfaces which have been implemented in the IMT-2020 specifications (Recommendation ITU-R M.2150).

While previous network generations were mostly designed for phones, IMT-2020 networks were designed for much more flexible use, replacing the need for many special-purpose networks. They can even function as many separate networks – all at the same time. This IMT-2020 feature is called "network slicing". Slices of the network can be tailored for a specific purpose and act as its own independent network. Each slice can optimize the characteristics that are needed for a specific service without wasting resources on things it doesn't need.

It's the smart 5G Core that makes slicing possible, which also guarantees the connection and performance that each slice was set up to deliver. It comprises not just an enhancement to the traditional mobile broadband scenarios, but extending the application of this technology to use cases involving ultra- reliable and low latency communications, and massive machine-type communications, as described in the IMT Vision included in Recommendation ITU-R M.2083."

55. The usage scenarios shown on Figure 3 below:

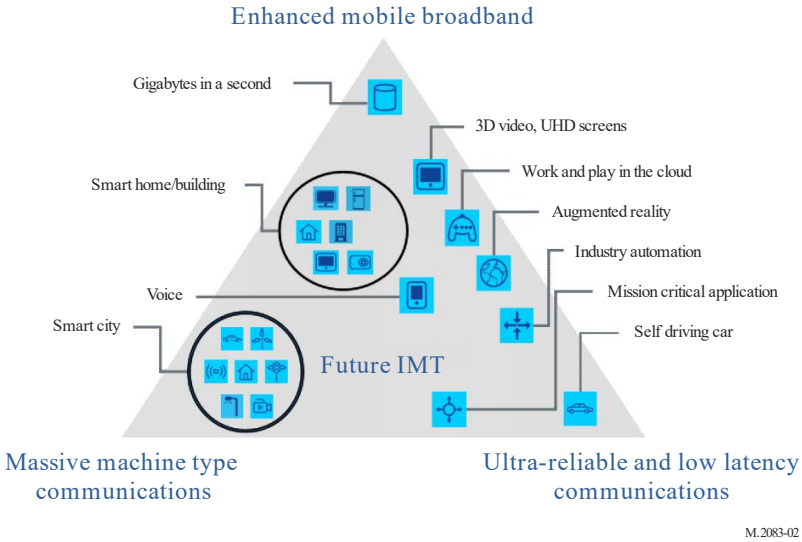
Figure 3: Enhancement of key capabilities from IMT-Advanced to IMT-2020



56. The usage scenarios envisaged for IMT-2020 are shown on Figure 4:

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Figure 4: Usage scenarios of IMT for 2020 and beyond



4.1.4 IMT-2030

57. IMT-2030 continues the evolution of IMT standards, and has the following goals, according to the ITU:[29]

"Inclusivity: Contributing towards further bridging of digital divides, to the maximum extent feasible, by ensuring affordable access to meaningful connectivity to everyone.

– Ubiquitous connectivity: Towards connecting unconnected, IMT-2030 is expected to include affordable connectivity and, at minimum, basic broadband services with extended coverage, including sparsely populated areas.

– Sustainability: Sustainability refers to the principle of ensuring that today's actions do not limit the range of economic, social and environmental options to future generations. IMT 2030 is envisaged to be built on energy efficiency, low power consumption technologies, reducing greenhouse gas emissions and appropriate use of resources under the applicable model of circular economy, in order to address climate change and contribute towards the achievement of current and future sustainable development goals.

– Innovation: Fostering innovation with technologies that facilitate connectivity, productivity and the efficient management of resources. These technological advances will improve user experience with a view to positively transform economies and lives everywhere.

– Enhanced security and resilience: IMT-2030 system is expected to be secure by design. It is expected to have the ability to continue operating during and quickly recover from a disruptive event, whether natural or man-made. Making security and resilience as the key considerations in the design, deployment and operation of IMT-2030 systems is fundamental to achieving broader societal and economic goals.

[29] See ITU-R M.2160, available at: https://www.itu.int/dms_pubrec/itu-r/rec/m/R-REC-M.2160-0-202311-I%21%21PDF-E.pdf

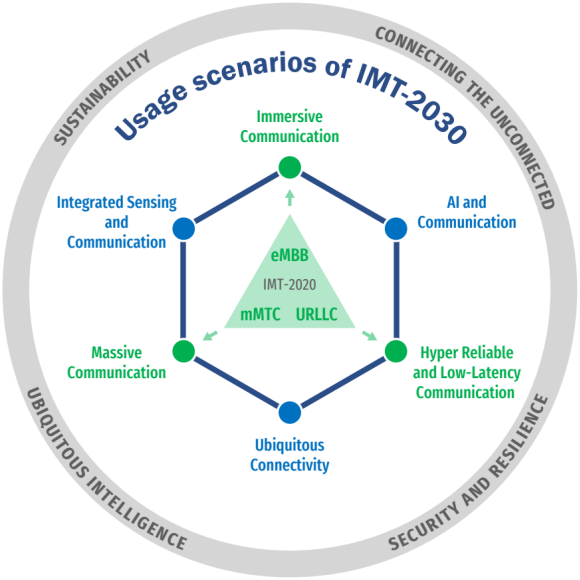
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– Standardization and interoperability: IMT-2030 systems are expected to be designed from the start to use transparently and member-inclusively standardized and interoperable interfaces, ensuring that different parts of the network, whether from the same or different vendors, work together as a fully functional and interoperable system.

– Interworking: IMT-2030 is expected to support service continuity and provide flexibility to users via close interworking with non-terrestrial network implementations, existing IMT systems and other non-IMT access systems. IMT-2030 is also expected to support smooth migration from existing IMT systems, where including support of connectivity to IMT-2020 and potentially IMT-Advanced devices will be advantageous for inclusivity."

58. The usage scenarios and capabilities for IMT-2030 are shown on Figure 5 and Figure 6. Technologies to enhance the air interface relating to IMT-2030 and beyond are anticipated to include advanced modulation, coding, and access schemes, advanced antenna technologies, in-band full duplex communications, multiple physical dimension transmission, THz communications, and technologies to support ultra-high accuracy positioning.[30] There may be technological improvements that significantly improve spectral efficiency, i.e. providing significantly greater data speeds through the same amount spectrum. At the same time, consideration is being given to using spectrum between the 100GHz and 1THz bands for IMT. However, the ITU has proposed that more work is needed before the mmWave bands above 100GHz are used for IMT.

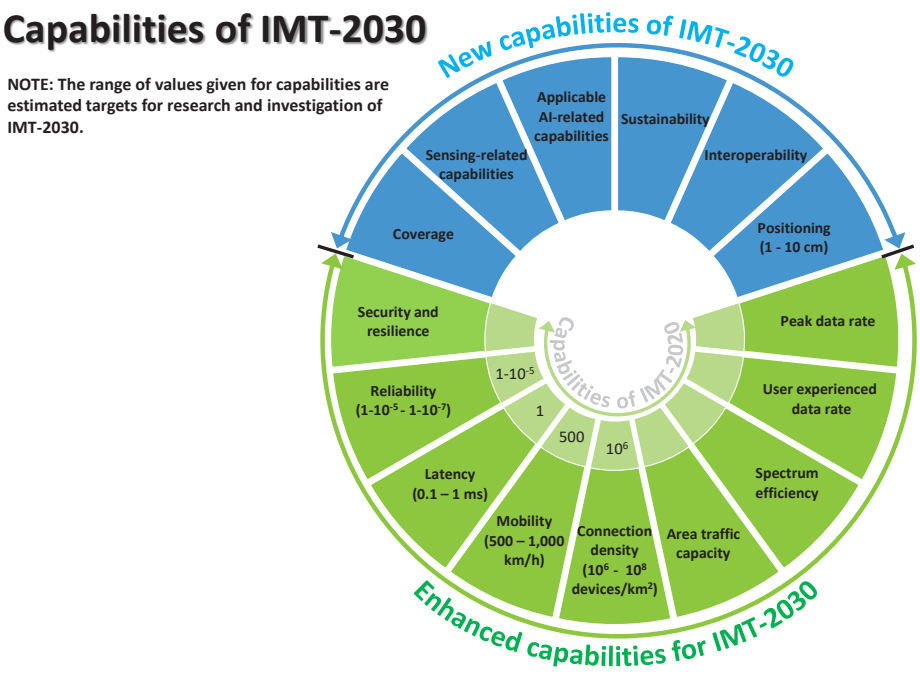
Figure 5: Usage scenarios of IMT-2030



[30] See ITU-R M.2516, 'Future technology trends of terrestrial International Mobile Telecommunications systems towards 2030 and beyond', available at: https://www.itu.int/pub/R-REP-M.2516-2022

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Figure 6: Capabilities of IMT-2030



4.2 Radio frequencies for IMT identified by the ITU

59. The ITU's world radiocommunications conferences (WRC) allocate the frequency bands for IMT. This IMT Roadmap 2025 identifies which of these IMT bands (between 450MHz and 71 GHz) could be deployed in South Africa based on the ITU Radio Regulations, 2024. The ITU definitions of IMT bands are set out on Table 2. The channel arrangements for IMT bands are set out in Recommendation ITU-R M.1036-7. Note that ITU-R M.1036-7 is currently being updated. The ITU-R Study Group meeting of 20 December 2024 considered Draft revision of Recommendation ITU-R M.1036-7, which was presented in Document 5/38. The ITU-R Study Group meeting of December 2025 is to consider the Draft revision of Recommendation ITU-R M.1036-7, since there were no consequential changes to the input contribution made in December 2024.

Table 2: ITU definition of IMT bands

Band	Frequency band	RR FN	WRC Resolution/s
450 MHz	450 – 470 MHz	5.286AA	224 (WRC-23)
700 MHz	694 – 790 MHz	5.312A and 5.317A	224 (WRC-23) and 760 (WRC-23)
750 MHz	733 MHz to 758 MHz	5.312A and 5.317A	224 (WRC-23) and 760 (WRC-23)
800 MHz	790 - 862 MHz	5.316B and 5.317A	224 (WRC-23) and 749 (WRC-23)
900 MHz	880 - 915 MHz // 925 - 960 MHz	5.317A	224 (WRC-23) and 749 (WRC-23)
1500 MHz	1 427 - 1 518 MHz	5.341A, 5.346, and 5.346A	223 (WRC-23), 750 (WRC-23), and 761 (WRC-23)
1800 MHz	1710-1785 MHz // 1805-1880 MHz	5.384A	223 (WRC-23

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Band	Frequency band	RR FN	WRC Resolution/s
1900 MHz	1880-1920 MHz		Resolution 212 (Rev.WRC 23)
2100 MHz	1920-1980 MHz // 2110-2170 MHz	5.388	212 (WRC-23) and 223 (WRC-23)
2100 MHz	2010-2025 MHz	5.388	212 (WRC-23) and 223 (WRC-23)
2300 MHz	2300-2400 MHz	5.384A	223 (WRC-23)
2600 MHz	2500-2690 MHz	5.384A	223 (WRC-23)
3300 MHz	3300-3400 MHz	5.429B	223 (WRC-23)
3.5 GHz	3400-3600 MHz	5.430A	223 (WRC-19)
3.7GHz	3600-3800MHz	5.434A and 5.434B	223 (WRC-19)
4.9 GHz	4800-4990 MHz	5.441A	223 (WRC-19)
6 GHz	6425-7125 MHz	5.457E	220 (WRC-23)
26 GHz	24.25-27.5 GHz	5.532AB	242 (WRC-19)
40 GHz	37-43.5 GHz	5.550B	243 (WRC-19)
46GHz	45.5-47 GHz	5.553A	244 (WRC-23)
48 GHz	47.2-48.2 GHz	5.553B	243 (WRC-19)
66 GHz	66-71 GHz	5.559B	241 (WRC-19)

4.3 African Telecommunications Union

60. The Africa Telecommunications Union ("ATU") developed and published the African Spectrum Allocation Plan (AfriSAP)[31] in 2021. It covers the frequency range 8.3 kHz—3000 GHz. AfriSAP includes a table of common spectrum allocations and applications, basic conditions necessary to guide regulators, relevant applicable footnotes, typical applications, and additional information where applicable. The table of spectrum allocations and applications was based on ITU Region 1 allocations. This initiative is tool towards promoting the harmonized usage of spectrum across a given region: a common spectrum allocation plan that acts as a reference for subregional plans as well as national plans.

4.4 Communications Regulators' Association of Southern Africa (CRASA)

61. South Africa is part of the Southern African Development Community ("SADC") and is a member of the Communications Regulators' Association of Southern Africa ("CRASA"). South Africa actively participated in the preparation of the SADC Radio Frequency Spectrum Allocation Plan (SADC RFSAP 2021), 8.3kHz-3000 GHz, Edition 2021[32], and harmonises spectrum planning with neighbouring countries as far as possible to maintain international coordination.

62. The SADC RFSAP 2021 created a framework for harmonisation across SADC on the use of the radio frequency spectrum. Countries included in the SADC RFSAP 2021 are Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Malawi, Madagascar, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia, and Zimbabwe.

[31] Available at: https://atuuat.africa/african-spectrum-allocation-plan-afrisap/

[32] Available at: https://www.crasa.org/post-category/electronic-communications-regulatory-guidelines

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5 TECHNICAL AND DEPLOYMENT MATTERS

5.1 Harmonisation

63. Global harmonisations are a key component for the achievement of economies of scale supported by a technology neutral regime for licensing. The global availability of harmonised regulatory frameworks for generations of technologies' spectrum will enable economies of scale and facilitate cross-border coordination and roaming for end users.

64. Consistent spectrum release timelines and harmonisation measures are key enablers for the successful deployment of these technology generations and beyond. Market-based competitive licensing models and exclusive individual spectrum licences are the preferred authorisation models for the deployment of these technology generations and systems. This licensing regime brings certainty for investments and predictable network performance and quality. At the same time, this does not preclude the shared use of spectrum.

65. The Harmonized Calculation Method for Africa (HCM4A) is a regional agreement and technical framework created to facilitate cross-border frequency coordination among African nations.[33] HCM4A establishes a standardized approach for countries to manage radio spectrum and prevent harmful interference between their telecommunications networks. It provides a common set of rules, including methods for calculating signal strength and determining acceptable interference levels, for frequency bands ranging from 29.7 MHz to 43.5 GHz. This framework is essential for the efficient deployment of wireless technologies, including IMT systems like 4G and 5G, across the African continent.

66. The HCM4A will be taken into account when developing the RFSAPs.

5.2 Coordination / coexistence

67. It is also important to take into account coordination or coexistence of different services in the same radio frequency band.

68. In this regard, for example, the Authority may consider ITU recommendation ITU-R M.2159[34], on:

"technical and regulatory measures to provide compatibility between international mobile telecommunications and mobile-satellite services with respect to mobile-satellite services operations in the frequency band 1 518-1 525 MHz for administrations wishing to implement international mobile telecommunications in the frequency band 1 492-1 518 MHz".

69. A further example is *"Guidance for national and bilateral coordination of stations in the fixed service with IMT stations in the frequency band 6 425-7 125 MHz"*, set out in Draft New Report ITU-R M.[FS-IMT Coordination]. A related coordination study is one carried out by the Electronic Communications Committee ("ECC") of the European Conference of Postal and Telecommunications Administrations ("CEPT"). The CEPT is investigating the possibilities for

[33] See: https://www.itu.int/en/ITU-D/Technology/Pages/hcm4a.aspx#:~:text=The%20representatives%20of%20the%20administrations,to%20the%20Fixed%20and%20Land

[34] See: https://www.itu.int/dms_pubrec/itu-r/rec/m/R-REC-M.2159-0-202312-I!!PDF-E.pdf

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sharing between Wireless Access Systems including Radio Local Area Networks (WAS/RLAN) in the frequency band 6425-7125 MHz.[35] The ECC found that:

69.1. Monte-carlo simulations show that interference criteria for fixed service ("FS") links are typically not exceeded, or only rarely exceeded, when WAN/RLAN services are introduced;

69.2. Where interference limits are exceeded, this is in highly specific circumstances, such as when the WAS/RLAN is located in a line of sight of a FS link, or if there are unfavourable clutter conditions or building-entry loss;

69.3. The interference studies by the ECC are ongoing.

70. The abovementioned study illustrates that required guard bands, or the shared use of spectrum, needs to be considered on a case-by-case basis. Such studies will be taken into account where applicable during the preparation of the feasibility studies (Section 9) and the RFSAPs.

5.3 High altitude platform system as IMT base station (HIBS)

71. High altitude platform systems ("HAPS") are defined in ITU RR as platforms operating at a fixed point relative to the earth's surface, at an altitude of between 20-50kms.[36] Frequency bands for HAPS were considered at WRC-19, and discussions on how HAPS could operate as IMT base stations ("HIBS") took place at WRC-23. Specifically, several bands were identified for HIBS in Region 1 at WRC-23 and included in the 2024 Edition of the Radio Regulations:

71.1. 694-960 MHz or portions thereof;

71.2. 1 710-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz (WRC-23 Final Acts MOD 5.388A); and

71.3. 2 500-2 690 MHz (WRC-23 Final Acts ADD 5.409A).

72. No protection was afforded to HIBS in the abovementioned IMT bands, and there is no priority for the use of HIBS over other terrestrial IMT use (Resolution 213 of WRC-23).

73. HIBS will be incorporated in updated RFSAPs for all frequency bands identified for HIBS.

5.4 Flexible spectrum utilisation

74. Unpaired spectrum is much easier to release than paired spectrum. This benefit is becoming increasingly important as the globally available supply of spectrum falls, meaning, the process of releasing new spectrum can be greatly accelerated by designating it as unpaired TDD.

75. Capacity benefits of unpaired spectrum are realised in the size of available TDD spectrum bands, often assigned in large blocks. From a capacity perspective, this is an advantage over the typical 2×10 MHz configuration found in paired FDD spectrum. The current LTE bandwidth limit is 20 MHz, and most equipment could spread the power of ~80 W over ~40 MHz bandwidth depending

[35] See: https://docdb.cept.org/download/4610

[36] See: https://www.itu.int/en/mediacentre/backgrounders/Pages/High-altitude-platform-systems.aspx#:~:text=HAPS%20can%20be%20rapidly%20deployed,terrestrial%20networks%20damaged%20by%20disasters.

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on the frequency range. Therefore, 40 MHz assignments per operator might be cost-efficient, but this would be hard to assign in multi-operator environments.

76. The asymmetric nature of TDD brings a number of advantages. One key advantage of this is the flexibility it allows in the adjustment of the downlink and uplink resource ratios. Commonly employed, downlink-to-uplink ratios are 8:1, 3:1, 2:2 and 1:3 and the heavily downlink-oriented configuration fits perfectly with current user behaviour, where streaming and downloads take up a high proportion of downlink resources.

77. Unpaired spectrum is best suited for the user behaviour of the mobile broadband era.

78. Unpaired LTE is also optimally suited to cover future M2M and 'Internet of Things' demands which will be predominantly uplink oriented. Also, video uploads from closed-circuit television (CCTV) result in a higher uplink bandwidth capacity requirement, which has to be taken into account in specialised schemes.

79. Additional features of unpaired spectrum are set out below.

5.4.1 Network synchronisation

80. Synchronized operation is required for Time Division Duplex (TDD) networks in order to ensure efficient use of spectrum. In order to avoid interference between Time Division Duplex (TDD) networks operating in adjacent frequency carriers, radio transmissions of the TDD networks should be synchronized and their uplink and downlink frames should be time aligned. On the other hand, unsynchronized operation would lead to large inter-operator guard bands which will require additional operator-specific base stations filtering at a high cost of deployment.

5.4.2 Interference suppression

81. Thanks to uplink and downlink channel reciprocity (ensured by the fact that the same portion of the spectrum is used in both link directions), TDD technology has unique co-ordination abilities, such as beamforming, which improves system performance by utilising channel-state information to achieve transmit-array gain.

82. Results show that across the 3GPP standard in Release 8~10, single-layer, dual-layer, and multi-user beamforming can generate a cell throughput gain of 15%.

83. Adoption of beamforming and Coordinated Multi-Points (CoMP), called 'Co-ordinated beamforming' (CBF), can further enhance network performance because interference is mitigated between inter-eNodeBs.

5.5 Guard bands

84. To define the possibilities of any co-existing scenario of IMT with existing technologies and applications, the minimum required guard bands and potential other intelligent interference suppression options need to be considered.

85. For instance, unpaired TDD spectrum bands (discussed below) should not be interspersed with FDD spectrum due to the requirement of a guard band of ~5 MHz between the bands, which is generally taken from the TDD spectrum. Instead of guard bands, the boundary ranges might be used indoors only due to higher penetration losses. Special spectrum assignments for TDD could be used within the duplex gap larger than 15 MHz.

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5.6 Total radiated power

86. Historically, harmful interference was measured by setting power limits based on equivalent isotropically radiated power (EIRP). There is a need to include measures for using total radiated power (TRP) where active antennae systems (AAS) are used for IMT systems, since EIRP measures an increase in power when multiple antennae systems are used, even though TRP does not increase, and it is only TRP that results in harmful interference.[37]

87. EIRP only represents the interference at a certain point and not the network-level:

87.1. In the case of passive systems, the antenna gain is fixed and almost the same in different directions in the sector, and so the EIRP metric is suitable in passive systems.

87.2. In case of AAS systems, the beam's direction and beam's gain vary depend on the real traffic, hence, the interference caused by the unwanted emissions is averaged in the sector which can be properly measured by TRP.

88. Specifying an EIRP requirement will not allow guaranteed control of the total amount of interference in the network and would lead to misleading results and potentially over protection for co-existing systems.

89. RFSAPs for IMT spectrum above 2GHz need to take this into account. For example, the power limit recommended for mobile-fixed communications networks ("MFCNs") using AAS by the CEPT ECC is -43dBm/(5MHz)/cell within the 3400-3800MHz bands.[38] CEPT ECC Decision (11)06[39] may also be considered.

5.7 Spectrum refarming

90. Radio Frequency Spectrum Re-farming means the process by which the use of a Radio Frequency Spectrum band is changed following a change in the technology used and does not necessarily mean that there is a change in assignment or application, nor does it mean that the licensed user has to vacate the frequency.

6 IMT IN SOUTH AFRICA

6.1 The rationale for alignment of IMT in South Africa with international standards

91. Section 30 of the ECA requires that the Authority must comply with international standards and requirements. The primary objective of IMT specifications is to provide a basis for harmonisation worldwide and reduce ecosystem fragmentation. This is achieved in several ways:

91.1. In terms of the technological capability, IMT specifications provide a basis for standards development for systems, such as IEEE and 3GPP, to ensure that the technologies meet those requirements. In South Africa, the IMT specifications provide

[37] See, for example: https://docdb.cept.org/download/5ffb56c9-9c78/ECCRep281.pdf

[38] See: https://docdb.cept.org/download/5ffb56c9-9c78/ECCRep281.pdf

[39] See: https://docdb.cept.org/download/1531

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the Authority and the industry with benchmarks regarding the capabilities to be expected from upcoming technologies.

91.2. In terms of radio spectrum, IMT specifications provide a predictable basis on which to build a roadmap for the introduction of next-generation technologies. IMT specifications support the Authority in making radio spectrum available in a timely manner for the industry in South Africa.

92. South Africa stands to gain from adhering to a globally harmonised framework in the following areas:

92.1. Economies of scale in the production and deployment of mobile technologies, reducing cost for both consumers and industry for standardised products (terminals and network equipment);

92.2. Global Interoperability which ensures that mobile devices and network from different manufactures and operators can communicate seamlessly, allowing for easy roaming and smooth, cross-border co-ordination;

92.3. Regulatory Framework: Aligning with IMT standards provide countries with a well-established regulatory framework for managing spectrum allocations, licensing, and technical requirements to ensure stability for the mobile communications industry;

92.4. Technological and Competitive advantage: By adopting IMT standards, the country will attract investments, foster innovation, competition, and economic growth in the telecommunication sector;

92.5. Smoother cross-border co-ordination; and

92.6. Easy roaming within the region where harmonisation is implemented.

93. It is important to note that the adoption of IMT need not result unconditionally in the displacement of other existing uses of spectrum. In certain cases, radio spectrum sharing with other technologies is feasible. However, it is in South Africa's interest to adopt IMT specifications fully, wherever feasible, and to manage the IMT radio spectrum bands. In any case, the Authority performs feasibility studies in cases where the benefits of allocating spectrum exclusively to IMT services are not straightforward.

94. In South Africa, it is important to align with IMT specifications in order to take advantage of worldwide standards, technologies, and services.

95. In general, it is desirable to assign long-term IMT bands, so operators, network solution vendors and terminal manufactures have sufficient time to exploit synergies in harmonised designs. Globally harmonised frequency arrangements in the bands identified for IMT will reduce the overall cost of IMT networks and terminals by providing economies of scale, and facilitating deployment and cross-border co-ordination, roaming, etc.

6.2 Mobile allocations identified for IMT and assignments

96. The IMT bands currently used in South Africa, and that could potentially be used in future for IMT, are shown on Table 3. Currently, 1 155MHz of spectrum is identified for IMT and RFSAPs have been issued or licenses for IMT have been issued, 794MHz of which has been assigned for IMT use to licensees. There is a further 1 145MHz of mid-band spectrum for which feasibility studies are under development, as explained in Section 9.

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Table 3: Amount of spectrum allocated currently or potentially in the future to IMT spectrum

Band	Start – Finish \\ FDD	GG / Feasibility study / RFSAP needed / NRFP	Identified for IMT and RFSAP available or licensed	Identified for IMT but no RFSAP yet	Assigned - IMT	Not assigned to IMT
450 FDD	452.5-457.5 \\ 462.5-467.5	Government Gazette 48353 (Notice 3246 of 2023)	10		0	10
700 FDD	703-733 \\ 758-788	Government Gazette 47788 (Notice 2886 of 2022)	60		40	20
750 TDD	733 – 758	Government Gazette 47788 (Notice 2887 of 2022)	5			5
800 FDD	791-821 \\ 832-862	Government Gazette 47788 (Notice 2888 of 2022)	60		40	20
900 FDD	880-915 \\ 925-960	Government Gazette 49556 (Notice 3999 of 2023)	70		70	
1500 TDD	1427 – 1517	Government Gazette 48353 (Notice 3244 of 2023)	90			90
1800 FDD	1710-1785 \\ 1805-1880	RFSAP needed / NF9	150		144	6
1900 TDD	1880 – 1920	Feasibility study / NF9		40		40
2100 FDD	1920-1980 - 2110-2170	RFSAP needed / NF9	120		120	
2100 TDD	2010 – 2025	Feasibility study / NF9		15		15
2300 TDD	2300 – 2400	Government Gazette 50657 (Notice 4824 of 2024)	100		60	40
2600 TDD	2500 – 2690	Government Gazette 43341 (Notice 285 of 2020)	190		160	30
3300-3400 TDD	3300 – 3400	Government Gazette 47788 (Notice 2891 of 2022)	100			100
3400-3600 TDD	3400 – 3600	Government Gazette 47763 (Notice 2879 of 2022)	200		160	40
3600-3800 TDD	3600 – 3800	Feasibility study		200		200
4800-4990	4800 – 4990	Feasibility study / NF9		190		190
6425-7125	6425 – 7125	Feasibility study		700		700
26 GHz	24.25-27.5GHz	Feasibility study / NF9		3 250		3 025
40 GHz	37-43.5GHz	Feasibility study / NF9		6 050		6 050
46 GHz	45.5-47GHz	To be considered		1 500		1 500
48 GHz	47.2-48.2GHz	To be considered / NF9		1 000		1 000
66-71 GHz	66- 71GHz	To be considered / NF9		4 000		4 000
Total			1 155	18 395	794	18756

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7 FORECASTS OF DEMAND FOR IMT

97. In this section, demand for IMT spectrum is considered, in order to estimate the amount of spectrum needed in South Africa for IMT.

7.1 ITU forecasts of IMT demand

98. The ITU-R, in 2013 published Recommendation ITU-R M.1768-1 on the "Methodology for calculation of spectrum requirements for the terrestrial component of International Mobile Telecommunications":

"This Recommendation describes a methodology for the calculation of terrestrial spectrum requirement estimation for International Mobile Telecommunications (IMT). It provides a systematic approach that incorporates service categories (a combination of service type and traffic class), service environments (a combination of service usage pattern and tele-density), radio environments, market data analysis and traffic estimation by using these categories and environments, traffic distribution among radio access technique groups (RATGs), required system capacity calculation and resultant spectrum requirement determination. The methodology is applicable to packet switch-based traffic and can accommodate multiple services. It can also accommodate circuit switched emulation traffic using a reservation-based concept".

99. Recommendation ITU-R M.1768-1 provides a useful framework for the calculation of terrestrial spectrum requirement estimation for International Mobile Telecommunications (IMT).

7.2 Forecasts of overall IMT demand

100. The ITU developed forecasts for demand for IMT spectrum over a number of years. A brief history of these developments is set out below in respect of ITU-R reports.

101. Report ITU-R M.2072 (2006) on 'World mobile telecommunication market forecast', which considered that: *"The market report highlights strong growth in the wireless market with the share of mobile lines among the total fixed and mobile telecommunications network lines exceeding 50% in 2002 with most regions have higher mobile phone penetration than wireline."*

102. Recommendation ITU-R M.1768-0 (2006) was titled 'Methodology for calculation of spectrum requirements for the future development of the terrestrial component of IMT-2000 and systems beyond IMT-2000'. This was superseded by M.1768-1 (04/2013).

103. Report ITU-R M.2078-0 (2006) on 'Estimated spectrum bandwidth requirements for the future development of IMT-2000 and IMT-Advanced', contained future spectrum requirements for terrestrial IMT were estimated for radio access technologies ("RATG") in respect of pre-IMT, IMT-2000 and its enhancements ("RATG 1") and IMT-Advanced technologies ("RATG 2"), contained on Table 4 and Table 5.

Table 4: Radio parameters for RATG1 (pre-IMT and IMT-2000) - M.2078-0 (2006)

Parameters	Macro cell	Micro cell	Pico cell	Hot spot
Application data rate (Mbit/s)	20	40	40	–

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Parameters	Macro cell	Micro cell	Pico cell	Hot spot
Supported mobility classes	Stationary/ pedestrian, low, high	Stationary/ pedestrian, low	Stationary/ pedestrian	–
Guard band between operators (MHz)	0		–	
Minimum deployment per operator per radio environment (MHz)	40	40	40	–
Support for multicast	Yes		–	
Number of overlapping network deployment	1			

Table 5: Radio parameters for RATG 2 (IMT-Advanced) - M.2078-0 (2006)

Parameters	Macro cell	Micro cell	Pico cell	Hot spot
Application data rate (Mbps)	50	100	1 000	1 000
Supported mobility classes	Stationary/ pedestrian, low, high	Stationary/ pedestrian, low	Stationary/ pedestrian	Stationary/ pedestrian
Guard band between operators (MHz)	0			
Support for multicast	Yes			
Minimum deployment per operator per radio environment (MHz)	20	20	120	120
Granularity of deployment per operator per radio environment (MHz)	20	20	20	20
Number of overlapping network deployment	1			

104. Overall estimated demand for spectrum in high-usage density settings is shown on Table 6.

Table 6: Ranges of predicted spectrum requirements - M.2078-0 (2006) – high density usage setting

	1 network (see Note 3)	2 networks (see Note 1)	3 networks (see Note 1)	4 networks (see Note 1)	5 networks (see Note 1)
RATG 1 (see Note 2)	880	880	960	1 120	1 200
RATG 2	840	880	1 020	1 120	1 300
RATG 1 + RATG 2	1 720	1 760	1 980	2 240	2 500

NOTE 1 – When more than one network is present in a country the total spectrum requirement may be higher in order to account for packaging the spectrum (integer multiples of 40 MHz for RATG1).

NOTE 2 – The spectrum estimate for RATG1 for the year 2010 may seem high when considering current network deployments. However, the total estimation was performed using a process established by Recommendation ITU-R M.1768 and technical characteristics predicted for RATG1 in the evolution of IMT-2000 technologies. Furthermore there is not enough statistical market data to predict the exact requirements for RATG1.

NOTE 3 – It should be noted that in Recommendation ITU-R M.1768 and Report ITU-R M.2074 the associated terminology relating to the term 'Network' is the term 'number of overlapping network deployments'.

105. Report ITU-R M.2243-0 (2011) is titled 'Assessment of the global mobile broadband deployments and forecasts for International Mobile Telecommunications'. The report relies on several mobile traffic forecasts beyond 2010 provided by different organisations. Most of these forecasts consider mobile traffic in the years 2011-2015, while only one makes projections for the year 2020, anticipating a 33-fold traffic growth ratio in 2020 compared with 2010. The ITU estimated that data traffic at the time, in 2010, was more than five times that forecast in M.2072.

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106. Report ITU-R M.1768-1 (04/2013) updated M.1768-0 and the update title was: 'Methodology for calculation of spectrum requirements for the terrestrial component of International Mobile Telecommunications'. The example radio parameters for RATG1 and RATG2 are presented on Table 7 and Table 8.

Table 7: Example required radio parameters for RATG1 (ITU-R1768-01, 04/2013)

Attribute	RATG1				
	Value				
	Unit	Macro cell	Micro cell	Pico cell	Hot spot
Application data rate	Mbit/s	1	1	2.5	
Supported mobility classes		Stationary/ pedestrian, low, high	Stationary/ pedestrian, low	Stationary/ pedestrian	
Guardband between operators	MHz	0	0	0	
Minimum deployment per operator per RE	MHz	20	20	20	
Number of overlapping network deployment	No.	5	5	5	
Granularity of deployment per operator per RE	MHz	20	20	20	
Possibility to flexible spectrum usage (FSU)	Boolean	No	No	No	
FSU margin	Multiplier	1	1	1	
Typical operating frequency	MHz	< 2 700	< 2 700	< 2 700	
Support for multicast	Boolean	Yes	Yes	Yes	

This example is not applicable to the scenario of large areas with low teledensity coverage.

Table 8: Example required radio parameters for RATG2 (ITU-R1768-01, 04/2013)

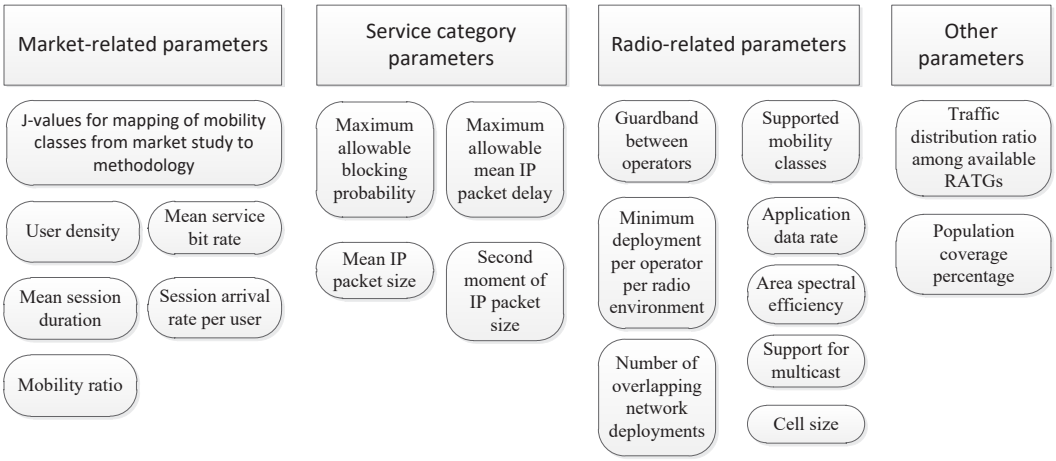
Attribute	RATG2				
	Value				
	Unit	Macro cell	Micro cell	Pico cell	Hot spot
Application data rate	Mbit/s	50	100	1 000	1 000
Supported mobility classes		Stationary/ pedestrian, low high	Stationary/ pedestrian, low	Stationary/ pedestrian	Stationary/ pedestrian
Guardband between operators	MHz	0	0	0	0
Minimum deployment per operator per RE	MHz	50-100	50-100	100	100
Granularity of deployment per operator per RE	MHz	20	20	20	20
Number of overlapping network deployment	No.	1-4	1-4	1-4	1-4
Possibility to flexible spectrum usage (FSU)	Boolean	Yes	Yes	Yes	Yes

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Attribute	RATG2				
	Value				
	Unit	Macro cell	Micro cell	Pico cell	Hot spot
FSU margin	Multiplier	1	1	1	1
Area spectral efficiency	bit/s/Hz/ cell	2-4	2-5	3-6	5-10
Area spectral efficiency for multicasting	bit/s/Hz/ cell	1-1.5	1-2.5	1.5-3	2.5-5
Typical operating frequency	MHz	< 6 000	< 6 000	< 6 000	< 6 000
Support for multicast	Boolean	Yes	Yes	Yes	Yes

107. Report ITU-R M.2290-0 (12/2013) is titled 'Future spectrum requirements estimate for terrestrial IMT'.[40] This report shows that mobile traffic growth was expected to increase over the subsequent few years. The input parameters used to estimate demand are shown on Figure 7.

Figure 7: Input parameters used to estimate demand for spectrum



Source: ITU-R M.2290

108. To reflect this increasing traffic demand, new, updated market attributes for the lower user density and higher user density settings were provided.

Table 9: ITU forecasts for spectrum demand for IMT-2000 and IMT-advanced technologies (M.2290)

	Total spectrum requirements for RATG 1	Total spectrum requirements for RATG 2	Total spectrum requirements for RATGs 1 and 2
Lower user density settings	440 MHz	900 MHz	1 340 MHz
Higher user density settings	540 MHz	1 420 MHz	1 960 MHz

[40] ITU-R report M.2290, available at: https://www.itu.int/dms_pub/itu-r/opb/rep/r-rep-m.2290-2014-pdf-e.pdf

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Source: ITU-R report M.2290

109. While these forecasts are now outdated, they provide a useful starting point for considering how much spectrum is needed for IMT in South Africa, before the requirements of IMT-2020 and IMT-2030 are considered.

7.3 IMT Demand in South Africa

110. The demand for high-speed internet capabilities, such as those offered by IMT, is growing in South Africa. The growth in smartphone usage reflects the increasing demand for mobile internet services and advanced digital applications. Overall, mobile cellular subscriptions are growing significantly, increasing from 95m in 2020 to 117m in 2024.[41] Smartphone subscriptions grew from 60m in 2020 to 82.7m in 2024.

111. There is also significant growth in demand for IMT spectrum arising from machine-to-machine ("M2M") devices. According to ICASA's 2025 ICT Sector Report, South Africa had approximately 14m M2M SIM mobile subscriptions in 2024.[42] These connections support a range of services, including fleet management, smart metering, security systems, and connected health devices. This segment is expected to continue expanding with increased IoT adoption in both public infrastructure and private enterprise networks. Accordingly, future IMT spectrum planning must account for these growing M2M capacity requirements.

112. IMT demand can be forecast by estimating the amount of radio frequency spectrum needed to serve consumers in high-density population settings. In South Africa, the most densely populated area is Alexandra in the City of Johannesburg.[43] Population density information combined with information on spectral efficiency[44] provides us with a useful basis on which to plan for future spectrum requirements. The network parameters applied to forecast demand are shown on Table 10, and demand for spectrum measured in MHz is shown on Table 11.

113. As the busy hour scenarios and the FTTX / WiFi offload scenarios show, there is a considerable degree of uncertainty on how much spectrum may be needed for IMT, which might be as low as approximately 3 000MHz in the event that only a small proportion of the population uses their devices in the busy hour, and if significant numbers of connections are offloaded to fibre to the premises (FTTX) including via Wifi. There may also be substantially greater demand, in excess of 14 000MHz, in the event that FTTX/WiFi offload is low, and busy hour usage is high. Furthermore, the population-density based methodology applied here excludes machine to machine connections, of which there are a growing number. Of the 94m active mobile subscriptions, approximately 13m (approximately 14%) are machine to machine subscriptions.

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[41] Source: Acacia analysis of ICASA State of the ICT sector report, 2025.

[42] Source: Acacia analysis of ICASA State of the ICT sector report, 2025.

[43] Alexandra is the most densely populated 'main place' defined in Statistics South Africa's Census 2011.

[44] Coleago Consulting Ltd. (2021). *Estimating the mid-band spectrum needs in the 2025–2030 time frame – Global Outlook*. https://www.gsma.com/spectrum/wp-content/uploads/2021/07/Estimating-Mid-Band-Spectrum-Needs.pdf

StatsSA (2022). *City of Johannesburg and metropolitan population estimates*. https://www.statssa.gov.za/?page_id=1021&id=city-of-johannesburg-municipality

GSMA (2024). *Mobile Evolution in 6 GHz*. https://www.gsma.com/connectivity-for-good/spectrum/wp-content/uploads/2024/09/GSMA_Mobile-Evolution-in-6-GHz.pdf

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Table 10: Network parameters for spectrum demand forecast

Parameters	Value	Source
Average downlink (DL) spectral efficiency (bit/s/Hz)	14.28	ITU R M.2160 says IMT-2030 should have 1.5-3x spectral efficiency of IMT-2020, which is approximately 6bps/Hz.[45]
Sector cell	3	Standard industry assumption.
Cell density (square kms)	0.126	PI()*(200*200)/1000000
Population density	29 753	Acacia analysis of Alexandra based on population from Census 2011 and Statssa population growth estimates.
Mbps	500	ITU R M.2160

Table 11: Spectrum demand forecast (MHz)

	Population active during busy hour (Activity factor) ⇨					
Offload ⇩	**10%**	**15%**	**20%**	**25%**	**30%**	**35%**
10%	3 927	5 891	7 855	9 818	11 782	13 746
20%	3 491	5 236	6 982	8 727	10 473	12 218
30%	3 055	4 582	6 109	7 636	9 164	10 691

114. This means that the spectrum currently identified for IMT in South Africa and for which RFSAPs are available or licenses for IMT use have been issued, of approximately 1 155MHz (Table 3 above in Section 6), is unlikely to be adequate in the coming years, and substantial additional spectrum is likely needed for IMT. Between approximately 3 000MHz and 14 000MHz is likely going to be needed in the next 5-10 years in South Africa, depending on the extent of WiFi offload, and the proportion of the population active during the busy hour. It is also important to take into account that growth in machine-to-machine connections may result in greater demand for IMT spectrum.

8 PROCESS FOR THE DEVELOPMENT OF FEASIBILITY STUDIES

8.1 Overall process

115. The Radio Frequency Spectrum Migration Regulations, 2013, require that a feasibility study be undertaken where a migration is complex.

116. Feasibilities studies for allocating radio frequency spectrum bands to IMT may include analysis the following:

116.1. The economic feasibility of allocating the band for IMT, which may include an analysis of the costs and benefits of assigning bands for IMT and compare this to possible use for other services. Affordability of services and devices, and equipment lifespan, may also be analysed.

[45] See: GSMA (2024). *Mobile Evolution in 6 GHz*. https://www.gsma.com/connectivity-for-good/spectrum/wp-content/uploads/2024/09/GSMA_Mobile-Evolution-in-6-GHz.pdf

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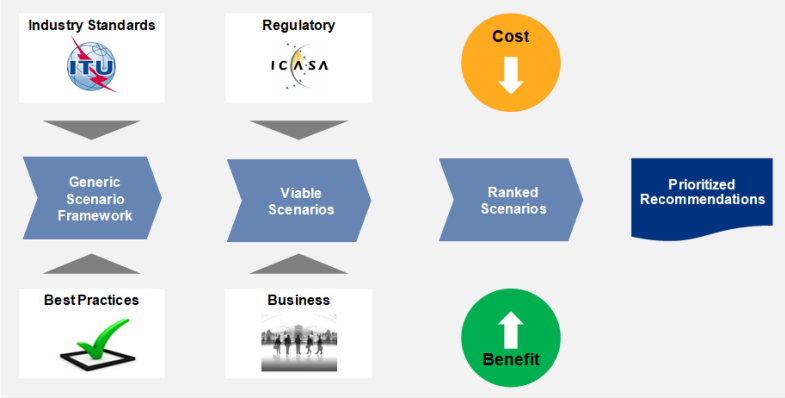
116.2. The technical feasibility for allocating the band for IMT, which will include an analysis of international studies where available, technical standards, interoperability, spectral efficiency, and the like.

116.3. The maturity of the IMT ecosystem for the band, including device availability, where data are available.

116.4. International aspects of the use of the band, including experience with the use of the band for IMT, and spectrum harmonisation.

117. The feasibility studies will be carried out as shown on Figure 8.

Figure 8: Methodology of the feasibility study



118. For each sub-band (and the corresponding service categories), the feasibility analysis starts with a review of the applicable regulatory texts.

119. The relevant sections of the Act provide a legal and regulatory canvas for the subsequent analyses. With the regulatory contour defined, the next step involves the review of band-specific documents with an objective to further refine the regulatory context and identify the technical and service specifications.

120. These steps include the review of the latest version of the National Radio Frequency Plan and the Frequency Migration Regulations (2013) which contain critical information on the permitted services as well as the latest version of the Radio Frequency Migration Plan of the Authority.

121. Relevant international texts are also brought in at this stage. These include, but are not limited to, SADC and ITU Region 1 documents, relevant ITU reports and trends.

122. Next, consultation documents are reviewed with the goal of understanding industry interests and motivations in technical, regulatory and economic terms.

123. The review of consultation documents completes the stakeholder interest map.

124. The various interests of stakeholders provide a basis for the scenario assessment and final proposal.

125. As a result of the inputs from regulatory texts, consultation documents and international best practices and technical possibilities, a broad set of migration and harmonisation options are derived with advantages and disadvantages with regard to various stakeholder objectives, are determined.

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126. The next step is the prioritisation of relevant factors (advantages and disadvantages). The prioritisation criteria reflect the stated objectives of the Authority and its obligations and mandates.

127. For instance, advantages that fulfil the Authority's prioritised objectives score high while disadvantages that hurt the Authority's prioritised objectives score low.

128. Lastly, all the benefits are consolidated to get a picture of the most beneficial scenarios from an aggregated perspective.

129. Many of the advantages and disadvantages are qualitative or cannot reasonably or reliably be predicted.

130. In such cases, qualitative analyses are made based on the best available knowledge and practices.

131. As explained in Section 3.6 above, feasibility studies will only be carried out when the Authority determines that the spectrum migration process is complex.

8.2 Co-ordination and interference self-management by licensees

132. In IMT bands, emerging options to manage interference are focused on co-ordination rather than guard bands (prevention) as has been the case until recently.

133. Given the increasing value of spectrum, guard bands that are not absolutely necessary are perceived as wasteful.

134. In the specific case of cellular technologies, the underlying standards have consistently evolved to tolerate more interference than before.

135. As a consequence, strict preventive interference measures, such as the use of internal guard bands, are abandoned.

136. With high-availability and business-sensitive services such as GSM, interference resolution usually needs to be performed very quickly.

137. The old approach of having the regulator mediate interference resolution lengthens the process unnecessarily for at least two reasons.

    137.1. Firstly, licensees usually co-operate well on most interference cases.

    137.2. Additionally, the regulator is usually not in a position to provide logistical or technical help.

138. An option is for the Authority to disengage partially from co-ordination and interference management.

139. Under the proposed scenario, the Authority would come into the picture only when licensees are not able to come to an agreement.

8.3 Cost-benefit analysis

140. The cost-benefit analysis complements the technical feasibility study by assessing the burden that in-band migration scenarios impose on the ecosystem. Such analysis is crucial for definitive conclusions on spectrum migration. It is important to avoid unintended consequences on end-users.

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141. This analysis considers three stakeholders and assesses the potential costs and benefits to each. These stakeholders are:

141.1. End-users who represent the most important category. All the regulatory objectives of the Authority could be traced back to the benefits to end-users.

141.2. Licensees who invest in networks and make services available: The objective of assessing costs and benefits in this category is to ensure that licensees are adequately incentivised and not put under conditions where reasonable, profitable business is impossible.

141.3. The Authority who must be able to continue to manage spectrum without incurring unduly high costs or be put in a situation where it must compromise the interests of the end-users.

8.4 Perspective of end-users

142. Three categories of impact may be reasonably expected to be felt by end-users:

142.1. Type of service;

142.2. Quality of service; and

142.3. Price of service.

8.5 Prioritisation of impact items

143. The Authority aims to comparatively evaluate all the costs as well as benefits associated with the various migration options.

144. The Authority proposes to consider the best option overall based on a balanced consideration of short-, medium- and long-term interests and policy objectives.

145. The impact items (costs, benefits, implementation guidelines) are ranked by decreasing order of importance below:

145.1. Quality of existing services to end-users during and after the migration: this category includes the end-user perception of quality of service, the ability of the network to provide a good quality of service and the incentives for licensees to provide a good quality of service;

145.2. Affordability of existing services to end-users: this category is related to the technical constraints imposed on licensees, the costs of migration to licensees as well as the opportunities afforded to licensees in terms incremental bandwidth; and

145.3. Availability of broadband services: this category includes the readiness of licensees to provide broadband services and the diversity of technologies available to them.

8.6 Processes and governance

146. The Authority will be involved in defining the governance rules that form the basis for decision-making and arbitration for all parties during the migration.

147. Additionally, the Authority will make sure that well-defined migration processes are in place that cover switchover procedures, disaster management and fallback processes.

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148. The process of developing governance rules will be inspired by the typical problems that arise in multi-party transition processes in the telecom industry as well as common rules of migration processes.

149. The various interests of parties must be clearly understood and weighed. In addition, governance rules must cover the post-migration periods where multiple adjustments to the network would be necessary to reach a fully operational phase again.

150. All switchovers during migration phases must occur at times of minimal traffic (usually at night).

151. In terms of process, the usual migration processes for frequency retune must be refined to include the cross-operator component.

152. The most critical aspect of processes is to ensure working and speedy interfaces between licensees so that cross-operator notifications during the switchover are seamless.

8.7 Project management of the migration

153. The Authority shall ensure that there exists a sound and executable migration plan with input from all stakeholders.

154. Important aspects of the migration plan include the drafting of a co-ordinated project timeline, a communication plan as well as disaster-recovery and business continuity plans.

155. The project plan must clearly identify the phases of the migration (including the sequence of geographical areas affected), the dependencies between various phases and all key milestones related to the beginning and the end of migration within each geographical area.

9 INITIAL BENCHMARKS FOR FEASIBILITY STUDIES FOR IMT IN THE FREQUENCY BANDS IDENTIFIED FOR IMT

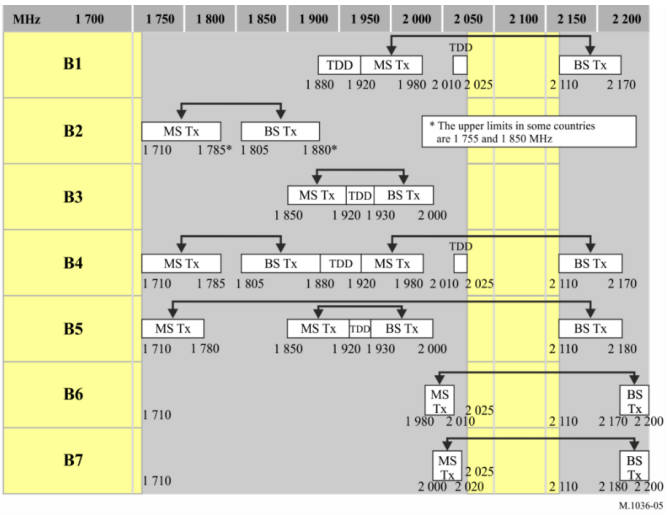
156. The sub-sections below provide more information regarding the status and frequency usage in South Africa for the bands that may be used for IMT in South Africa, and benchmarks for the initial feasibility studies for the deployment of IMT in these bands.

9.1 1 710-2 200 MHz

157. The latest recommendation for ITU-R M1036 frequency arrangements approved by ITU-R Working Party 5-D is set out below.

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Figure 9: Frequency arrangements between 1750MHz-2200MHz



Source: ITU M.1036

9.1.1 Updating arrangements for 1710 – 1880 MHz, and 1920 – 2170 MHz

158. The Authority proposes providing RFSAPs for two IMT bands that have been licensed for some time between 1710 – 1880 MHz, and 1920 – 2170 MHz. In particular, stakeholders commented that TRP needs to be taken into account for these bands rather than EIRP, as explained in Section 5.5.

9.1.2 1880 – 1920 MHz

159. The initial benchmarks for the feasibility study for this sub-band suggests that it is suitable for IMT, including for use for railway services. For instance, auction results in India[46] suggest that the band is highly valued for IMT. The band arrangements proposed by the ITU are shown on Figure 9.

160. There are other users of this band, such as DECT technologies. Portions of the band are currently licensed to Telkom, including 1900-1920MHz licensed for FWA. Furthermore, the United Kingdom's Office of Communications (Ofcom) as well as the EU have identified the 1900-1910 MHz subrange for railway mobile communications. Ofcom recommends the band for Future Railway Mobile Communication System (FRMCS) services, whilst the EU have identified the use of this band for Railway Mobile Radio.[47][48] Further, Ofcom have proposed the use of the 1910-

[46] See India Ministry of Communications Spectrum Auction 2023-24, available at: https://www.pib.gov.in/PressReleasePage.aspx?PRID=2028885

[47] See Ofcom Future authorisation of the 1900–1920 MHz band 10 March 2025, available at: https://www.ofcom.org.uk/siteassets/resources/documents/consultations/category-1-10-weeks/future-authorisation-of-the-19001920-mhz-band/main-documents/consultation-future-authorisation-of-the-19001920-mhz-band.pdf?v=392441

[48] See Commission Implementing Decision (EU) 2021/1730 of 28 September 2021, available at: Commission Implementing Decision (EU) 2021/1730 of 28 September 2021 on the harmonised use of the paired frequency bands 874,4-880,0 MHz

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1915 MHz subrange for Emergency Service Network (ESN) gateways.[49] Various very small aperture terminal ("VSAT") fixed satellite services ("FSS") are operated in this band. Many broadcasters and other entities use VSAT for various services such as video, news gathering and telemetry data services.

161. The IMT arrangements for the band are set out in Section 5 of ITU-R M.1036-7, as shown on Figure 9.

9.2 3600 – 3800 MHz

162. The initial benchmarks for the feasibility study for this band suggests that it is suitable for IMT. While there are other users of this band, including Broadband Fixed Wireless Access (BFWA) and Fixed-Satellite services (FSS), auction results in the UK[50], Croatia[51], Canada[52], Tanzania[53], and Australia[54] suggest that the band is highly valued for IMT.

163. There have been different approaches to shared use of this band, including for private networks in Finland and Germany, for example. For instance, mobile operators were permitted to deploy a private network on request, or sub-license the spectrum for that area. This ensured efficient spectrum use and encouraged investment into mobile communications.[55]

9.3 4800 - 4990 MHz

164. The initial benchmarks for the feasibility study for this band suggests that it is suitable for IMT. While there are other users of this band, including radio astronomy services, auction results in Hong Kong[56] suggest that the band is highly valued for IMT. This band has a growing device

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and 919,4-925,0 MHz and of the unpaired frequency band 1900-1910 MHz for Railway Mobile Radio (notified under document C(2021) 6862) (Text with EEA relevance) - Publications Office of the EU

[49] See Ofcom Future authorisation of the 1900–1920 MHz band 10 March 2025, available at: https://www.ofcom.org.uk/siteassets/resources/documents/consultations/category-1-10-weeks/future-authorisation-of-the-19001920-mhz-band/main-documents/consultation-future-authorisation-of-the-19001920-mhz-band.pdf?v=392441.

[50] See Ofcom Award of the 700 MHz and 3.6-3.8 GHz spectrum bands, available at: https://www.ofcom.org.uk/spectrum/spectrum-awards/700-mhz-and-3.6-3.8-ghz-auction

[51] See HAKOM awarded radio frequency spectrum for the fifth generation mobile communications, available at: https://www.hakom.hr/en/hakom-awarded-radio-frequency-spectrum-for-the-fifth-generation-mobile-communications/9081

[52] See Government of Canada 3800 MHz Auction — Final Results, available at: https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/spectrum-allocation/3800-mhz-auction-provisional-results

[53] See Tanzania Communications Regulatory Authority Public Notice: Results of the auction of radio frequency spectrum in IMT band (3600-3800 MHz), available at: https://tcra.go.tz/uploads/documents/en-1752158214-Public_Notice_Spectrum_Auction_1032107643381814476641029946369102376331752154874696.pdf

[54] Australia Communications and Media Authority Auction summary - 3.6 GHz band (2018), available at: https://www.acma.gov.au/auction-summary-36-ghz-band-2018

[55] See GSMA Spectrum Policy Trends 2023, available at: https://www.gsma.com/connectivity-for-good/spectrum/wp-content/uploads/2023/02/Spectrum-Policy-Trends-2023-1.pdf

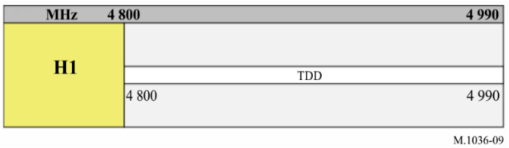
[56] See Hong Kong Office of Communications Authority Auction of Radio Spectrum in the 4.9 GHz Band for the Provision of Public Mobile Services: Successful Bidder Notice, available at: https://www.ofca.gov.hk/filemanager/ofca/en/content_1169/4_9_ghz_Auction_SuccessfulBidderNotice20191129.pdf

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ecosystem, with new IMT assignments in China and Japan.[57] According to one stakeholder, the ecosystem currently has 974 devices supporting band n79.

165. The arrangements for the band are set out in Section 9 of ITU-R M.1036-7, as shown on Figure 10 below.

Figure 10: Frequency arrangements between 4800MHz-4990MHz



9.4 6425-7125 MHz

166. The initial benchmarks for the feasibility study for this band suggests that it is suitable for IMT. While there are other users of this band, including fixed-satellite services, auction results in Hong Kong[58] suggest that the band is highly valued for IMT.

167. Regulatory authorities are in the process of designing a suitable framework for the sharing of this band between mobile and Wi-Fi service providers.[59] In the UK, Ofcom has issued proposals for spectrum sharing by mobile and Wi-Fi service providers as a two-phase effort that would be expanded into Europe.[60] The EU's Electronic Communications Committee (ECC) is currently drafting reports on the potential shared use of this band between mobile and Wi-Fi networks.[61]

168. A summary of various stakeholder comments, alongside the Authority's response, is shown on Table 19.

9.5 24.25 - 27.5 GHz

169. The initial benchmarks for the feasibility study for this band suggests that it is suitable for IMT. While there are other users of this band, such as Fixed-Satellite services, auction results in

[57] See GSMA Spectrum Policy Trends 2023, available at: https://www.gsma.com/connectivity-for-good/spectrum/wp-content/uploads/2023/02/Spectrum-Policy-Trends-2023-1.pdf.

[58] See The Government of the Hong Kong Special Administrative Region Press Releases: Conclusion of auction of radio spectrum in 6/7 GHz band, available at: https://www.info.gov.hk/gia/general/202411/29/P2024112900425.htm

[59] See Beltrán et al. 2025. A regulatory framework to enable shared use of the Upper 6 GHz band by IMT and RLAN applications. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5366576

[60] See Ofcom pioneers sharing of upper 6 GHz spectrum between mobile and Wi-Fi services, available at: https://www.ofcom.org.uk/spectrum/innovative-use-of-spectrum/ofcom-pioneers-sharing-of-upper-6-ghz-spectrum-between-mobile-and-wi-fi-services

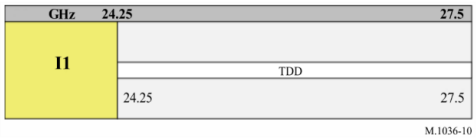
[61] See European Conference of Postal and Telecommunications Administrations ECC PT1 – IMT Matters: PT1#80 Completed the technical studies on the shared use of the upper 6GHz, available at: https://www.cept.org/ecc/groups/ecc/ecc-pt1/news/pt180-completed-the-technical-studies-on-the-shared-use-of-the-upper-6ghz

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Finland[62], Austria[63], and Croatia[64]suggest that the band is highly valued for IMT. Further, the UK is set to conduct an auction for this band in October 2025.[65]

170. The arrangements for the band are set out in Section 10 of ITU-R M.1036-7, as shown on Figure 11 below.

Figure 11: Frequency arrangements between 24.25GHz-27.5GHz



171. Refer to Table 20 below for a summary of various stakeholder comments, alongside the Authority's response.

9.6 37-43.5 GHz

172. The initial benchmarks for the feasibility study for this band suggests that it is suitable for allocation to IMT services. Auction results in the US[66] suggest that the band is highly valued for IMT. Further, the UK is set to conduct an auction for this band in October 2025.[67] This suggests that the band is feasible for IMT. The UK has decided to revoke incumbent licenses in this band, particularly for fixed services, in favour of allocating it to mobile use.[68]

173. This band is setup in accordance with ITU-R F.749-1.

174. The arrangements for the band are set out in Section 11 of ITU-R M.1036-7, as shown on Figure 12 below.

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[62] See Finland Ministry of Transport and Communications Press Release: 5G spectrum auction concluded, available at: https://lvm.fi/en/-/5g-spectrum-auction-concluded-1206517

[63] See Austria Telecommunications and Postal Division Auction result 26 GHz/3600 MHz, available at: https://www.rtr.at/TKP/was_wir_tun/telekommunikation/spectrum/procedures/26G_3600M_2024/Results.en.html

[64] See HAKOM awarded radio frequency spectrum for the fifth generation mobile communications, available at: https://www.hakom.hr/en/hakom-awarded-radio-frequency-spectrum-for-the-fifth-generation-mobile-communications/9081.

[65] See Ofcom Enabling mmWave spectrum for new uses, available at: https://www.ofcom.org.uk/spectrum/frequencies/mmwave-spectrum-for-new-uses

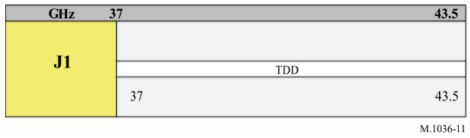
[66] See United States Federal Communications Commission Auction 103: Spectrum Frontiers – Upper 37 GHz, 39 GHz, and 47 GHz, available at: https://www.fcc.gov/auction/103

[67] See Ofcom Enabling mmWave spectrum for new uses, available at: https://www.ofcom.org.uk/spectrum/frequencies/mmwave-spectrum-for-new-uses.

[68] See Ofcom Update on revoking licences in the 40 GHz band, available at: https://www.ofcom.org.uk/spectrum/frequencies/revoking-licences-in-40-ghz-band

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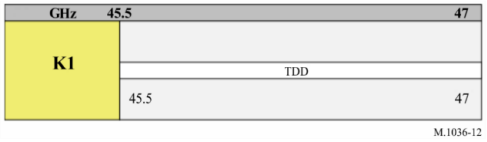
Figure 12: Frequency arrangements between 37GHz-43.5GHz



9.7 45.5-47 GHz

175. No licensees have been recorded for this band. Further, there have been no auctions of this band for IMT. However, the GSMA has indicated the potential use of this band for IMT following initial feasibility studies.[69] The arrangements for the band are set out in Section 12 of ITU-R M.1036-7, as shown on Figure 13 below.

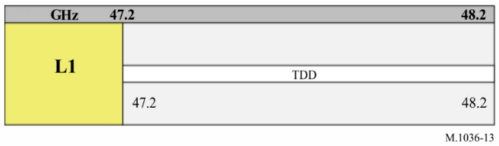
Figure 13: Frequency arrangements between 45.5GHz-47GHz



9.8 47.2-48.2 GHz

176. The initial benchmarks for the feasibility study for this band suggests that it is suitable for IMT. For instance, auction results in the US[70] suggest that this band is highly valued for IMT. The arrangements for the band are set out in Section 13 of ITU-R M.1036-7, as shown on Figure 14 below.

Figure 14: Frequency arrangements between 47.2GHz-48.2GHz



[69] See GSMA WRC series: IMT Spectrum Between 24.25 and 86 GHz- GSMA Public Policy Position September 2018, available at: https://www.gsma.com/connectivity-for-good/spectrum/wp-content/uploads/2018/12/AI-1.13-Positions.pdf

[70] See United States Federal Communications Commission Auction 103: Spectrum Frontiers – Upper 37 GHz, 39 GHz, and 47 GHz, available at: https://www.fcc.gov/auction/103.

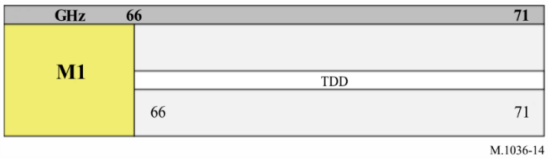
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9.9 66-71 GHz (E-Band)

177. There may be licensees operating in this band in terms of the 2021 amendment to the Radio Frequency Spectrum Regulations[71], which permits 'Multi-Gigabit Wireless Systems (MGWS)', for example.

178. The arrangements for the band are set out in Section 14 of ITU-R M.1036-7, as shown on Figure 15 below.

Figure 15: Frequency arrangements between 66GHz-71GHz



10 OBLIGATIONS FOR LICENSEES

10.1 Broadband and universal service context in South Africa

179. International bodies such as the ITU and the African Union ("AU") have set significant targets for broadband coverage. First, the United Nations ("UN") has set the following sustainable development goal (SDG 9c):[72]

"Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020."

180. According to the Broadband Commission, established by the UN and other partners:[73]

"By 2025, broadband-Internet user penetration should reach: i) 75% worldwide; ii) 65% in low- and middle-income countries; and iii) 35% in least developed countries."

181. Second, the African Union has set the following targets:[74]

"By 2030 all our people should be digitally empowered and able to access safely and securely to at least (6 Mb/s) all the time wherever they live in the continent at an affordable price of no more than (1 cts USD per MB) through a smart device manufactured in the continent at the price of no more than (100 USD) to benefit from all basic e-services and content of which at least 30% is developed and hosted in Africa."

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[71] See Government Gazette 45690 (Notice 737 of 2021).

[72] See: https://sdgs.un.org/goals/goal9#targets_and_indicators

[73] See: https://www.broadbandcommission.org/advocacy-targets/

[74] African Union Digital Transformation Strategy (2020–2030), available at: https://au.int/sites/default/files/documents/38507-doc-DTS_for_Africa_2020-2030_English.pdf#:~:text=%E2%80%A2%20By%202030%20all%20our,and%20able%20to%20access%20safely

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182. Third, SADC has set the following coverage targets:[75]

By 2030: 95% of the population is covered or in reach of affordable broadband connectivity."

183. While South Africa overall has already met these goals in respect of 4G services, coverage in rural areas is insufficient. Overall, coverage in South Africa meets the abovementioned targets in respect of 4G services. Over the period 2018-2024, 3G coverage remained consistently high, reaching 99.8% in 2024, while 4G/LTE coverage increased from 85.7% in 2018 to 99.1% in 2024.[76] 5G coverage, which was negligible before 2020, expanded rapidly from 0.7% in 2020 to 20.0% in 2022, then rose sharply to 38.4% in 2023 and 46.6% in 2024. This data highlights the near-universal penetration of 3G and 4G/LTE networks, alongside the ongoing and significant expansion of 5G coverage across the country.

183.1. These high levels of overall population coverage are driven by coverage in urban areas where, in 2024, all provinces had approximately 99%-100% population coverage in respect of 3G and 4G services. The Western Cape had the highest level of 5G coverage (78%), and the Free State province reported the lowest 5G coverage in urban areas at 26% in 2024.

183.2. However, in 2024, with respect to 4G/LTE, rural population coverage is as low as 86% in the Northern Cape, and is only 89% in the Western Cape, as reported by the licensees. The Northern Cape province reported the lowest percentage (1%) for 5G coverage in rural areas in 2024. There are therefore significant coverage gaps in rural areas. There is a question as to whether terrestrial IMT ought to be used for this purpose, or whether satellite services could be used. The Authority aims to have achieved near full coverage of IMT-2020 systems, by 2030. Trials for IMT-2030 are expected to start in South Africa by 2030.

10.2 Universal service obligations for IMT

184. The Authority has imposed universal service obligations on licensees in respect of their individual service licenses, and in respect of spectrum licences. As explained above, there continue to be significant gaps in mobile network coverage in rural areas in the Northern Cape and the Western Cape. There is a question as to how these coverage gaps might be addressed, along two broad themes: the first relates to licence obligations following spectrum auctions, and the second concerns the use of new technologies such as IMT-based mobile satellite services.

185. **Coverage requirements during the course of spectrum auctions:** In the 2022 spectrum auction, for example, there was a 'coverage lot', which had a lower reserve price in return for a higher network coverage requirement. However, this lot remained unsold, possibly due to overly onerous coverage requirements, or due to the lower activity points associated with this lot. The Authority may consider refining its approach to coverage lots in order to improve rural coverage in future auctions of high demand spectrum.

186. **Expanding coverage using HIBS:** As explained above, HIBS have been included in IMT standards. Given the dispersed nature of the populations of rural parts of South Africa, where

[75] SADC Digital Transformation Strategy, 2022, available at: https://www.sadc.int/sites/default/files/2025-08/EN%20-%205.2.3B%20-%20CM--SADC-ICT-INFO-MINISTERS-2023-4.8D%20-%20Draft%20SADC%20DTS_1.pdf

[76] Source: Acacia analysis of ICASA State of the ICT sector report, 2025.

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coverage gaps are the largest, the Authority may consider pursuing broadband coverage by means of HIBS to supplement the coverage of traditional high-site-based terrestrial IMT networks.

10.3 Quality of service

187. The Authority defines Quality of Service ("QoS") measurement as:[77]

"Quality of Service (QoS) measurement refers to the exercise of measuring the performance of services that are delivered over mobile networks. It provides an indication of what a customer experiences when using his/her cellphone on the cellular mobile network."

188. QoS, including broadband speeds experienced by end users, is an important feature of IMT services. Broadband speeds can be measured and monitored directly or by using crowd-sourced data. Furthermore, coverage maps with details on transmitters, emissions, and the like, are also a means of measuring QoS.

189. The Authority has carried out a number of QoS studies over the years.[78] The results of such direct measurements are valuable and permit operator and regional comparisons within South Africa, and these results can also be used to compare speeds in South Africa with speeds in other countries. When considering crowd-sourced data on broadband speeds in South Africa compared with speeds in other countries, South Africa ranks in the bottom-half of countries by average mobile speeds (Figure 16). South Africa's average mobile broadband speed of 67.2Mbps is well below the global average of 93.47Mbps.[79] It is important for IMT spectrum license holders to report average speeds experienced by consumers, including in different geographies. This data may be obtained from crowd-sourced data providers acquired by licensees or the Authority, or through direct measurements.

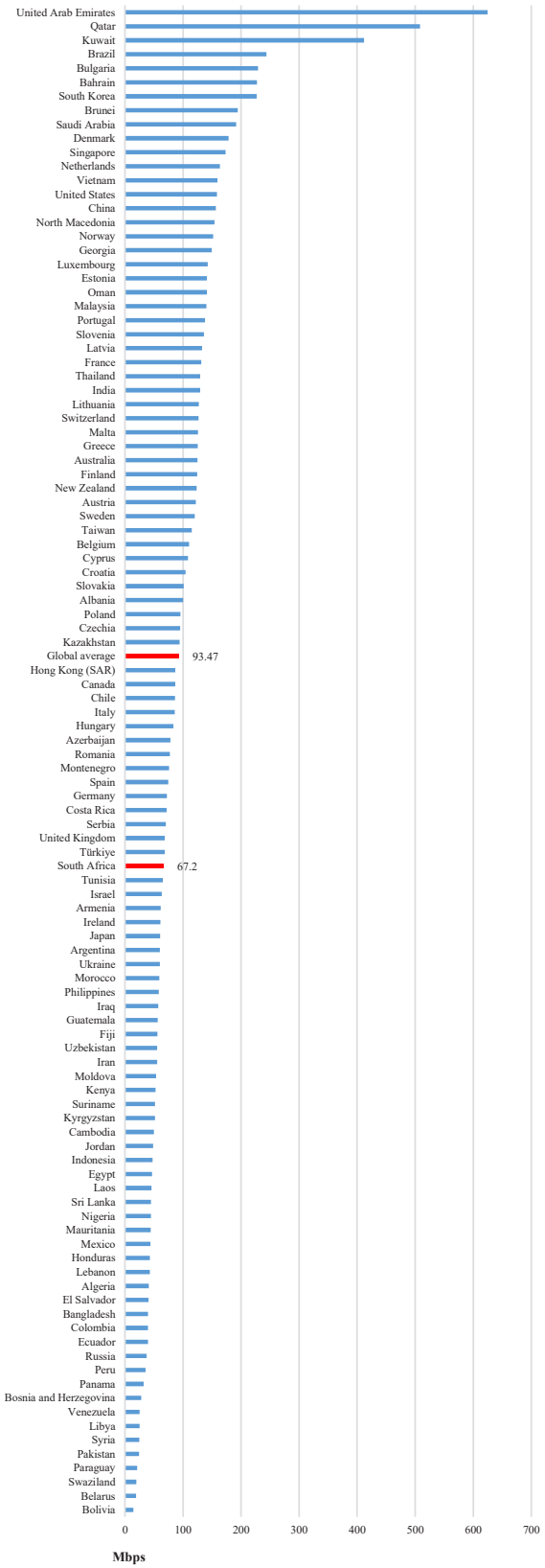
[77] See: https://www.icasa.org.za/pages/quality-of-service-reports

[78] See: https://www.icasa.org.za/legislation-and-regulations/engineering-and-technology/quality-of-service-reports

[79] In a similar study, was ranked first in Africa overall for broadband speeds. In that study, South Africa's average mobile broadband speed was comparable, at 68Mbps, below the global average of 74.8Mbps measured in that study. See: https://mybroadband.co.za/news/broadband/508626-south-africas-internet-speeds-and-prices-versus-the-world.html

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Figure 16: Ookla mobile speedtests



Source: Ooka, 'Median Country Speeds Updated September 2025, available at:

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https://www.speedtest.net/global-index

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190. Furthermore, the ITU recommendation ITU-R SM.1447-0 contains recommendations regarding coverage maps containing QoS-related information that ought to be provided by licensees, including on:[80]

190.1. "The main emission characteristics that determine the radio coverage of mobile networks;

190.2. "The main siting characteristics of the station that determine the radio coverage of mobile networks;

190.3. "The equipment characteristics for the various land mobile services;

190.4. "The main emission characteristics that can be objectively measured to determine the radio coverage of mobile networks."

191. Quality of service measurement, including network coverage, is an important aspect of administering IMT spectrum.

11 IMPLEMENTATION TIMELINES

192. The Radio Frequency Migration Regulations, 2013[81], contemplates the following in respect of timelines for migration:

"In principle, ICASA can migrate a user to another location as part of sound radio frequency spectrum management as required. However, an appropriate time frame should be applied as a standard practice.

In determining the time frame, the following factors are taken into account:

- *The duration of the spectrum licence,*
- *The time frame to migrate existing customers (end users),*
- *The economic life of the equipment installed, and*
- *Adequate forward planning."*

193. The abovementioned factors will be taken into account in the development of the migration plans for any bands to be allocated to IMT.

194. The following are indicative timelines for the deployment of IMT bands and the associated migration timelines. There are some essential conditions for this current draft time plan:

Table 12: Timelines for implementation of the IMT Roadmap 2025

Years	Draft 2025 proposal
2025-2026	Draft RFSAPs to be developed, including those listed below : 1710-2200MHz 1880-1920MHz 3600-3800MHz 4800-4990MHz 6425-7125MHz

[80] See: https://www.itu.int/dms_pubrec/itu-r/rec/sm/R-REC-SM.1447-0-200004-I!!PDF-E.pdf

[81] Government Gazette 36334 (Notices 352 and 353 of 2013).

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Years	Draft 2025 proposal
	24.24-27.5MHz 37-43.5GHz 47.2-48.2GHz 66-71GHz
2026-2027 – final RFSAPs	Final IMT RFSAPs to be developed, including those listed below: 1710-2200MHz 1880-1920MHz 3600-3800MHz 4800-4990MHz 6425-7125MHz 24.24-27.5MHz 37-43.5GHz 47.2-48.2GHz 66-71GHz
2027-2028	RFSAP for IMT systems implementation in terms of Section 31(3) of the ECA, including those listed below: 1710-2200MHz 1880-1920MHz 3600-3800MHz 4800-4990MHz 6425-7125MHz 24.24-27.5MHz 37-43.5GHz 47.2-48.2GHz 66-71GHz
2028+	Deployment of IMT systems

12 APPENDIX A: GLOSSARY OF TERMS, ABBREVIATIONS AND ACRONYMS

Acronym	Explanation
3G	Third generation mobile telecommunications is a generation of standards for mobile phones and mobile telecommunication relating to the ITU-R IMT-2000 specifications.
4G	Fourth Generation Network Technology relating to ITU-R IMT-Advanced specifications.
5G	Fifth Generation Network Technology, relating to the ITU-R IMT-2020 specifications.
6G	Sixth Generation Network Technology, relating to the ITU-R IMT-2030 specifications.
Act	Electronic Communications Act, 2005 (Act No. 36 of 2005).
AAS	Active antennae systems.
Administration	Members States of the International Telecommunications Union.
Allocation	Entry in the Table of Frequency Allocations of a given frequency band for the purpose of its use by one or more terrestrial or space *radiocommunication services* or the *radio astronomy service* under specified conditions.
Assignment	The authorisation given by the authority to a licensee to use a radio frequency or radio frequency channel under specified conditions.
ATU	African Telecommunications Union.
Authority	The Independent Communications Authority of South Africa.
BFWA	Broadband Fixed Wireless Access.

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Acronym	Explanation
CEPT	Conference of European Posts and Telecommunications Authorities.
CRASA	Communications Regulators' Association of Southern Africa.
DC-MSS-IMT	Direct Connectivity between Mobile-Satellite Service space station and IMT UEs.
DECT	Digital Enhanced Cordless Telecommunications 1880 - 1900 MHz which is a digital communication standard, primarily used for creating cordless phone systems.
ECA	The Electronic Communications Act of South Africa, Act No 36 of 2005.
EIRP	Effective isotropical radiated power.
ERP	Effective radiated power, which is the product of the power supplied to an antenna and its gain relative to a half wave dipole in a given direction.
FWA	Fixed Wireless Access.
FSS	Fixed Satellite Service.
Gbps	Gigabits per second.
GHz	Gigahertz of Radio Frequency Spectrum.
GSM	Global System for Mobile Communications, (originally Groupe Spécial Mobile), and is a standard set developed by the European Telecommunications Standards Institute (ETSI) to describe technologies for second generation (2G) digital cellular networks.
IMT	The name that encompasses IMT-2000, IMT-Advanced, IMT-2020 and IMT-2030 collectively known as International Mobile Telecommunications.
IMT-2000	The International Mobile Telecommunications, as envisioned in ITU-R Recommendation ITU-R M.687 and M.816.
IMT-Advanced	The International Mobile Telecommunications, as envisioned in Recommendation ITU-R M.1645.
IMT-2020	The International Mobile Telecommunications, as envisioned in Recommendation ITU-R M.2083.
IMT-2030	The International Mobile Telecommunications, as envisioned in Recommendation ITU-R M.2160.
IoT	Internet of Things.
ITU	International Telecommunication Union.
ITU RR	International Telecommunication Union Radio Regulations.
kHz	Kilohertz of Radio Frequency Spectrum.
LTE	Long Term Evolution and is a standard for wireless communication of high-speed data for mobile phones and data terminals. It is based on the GSM/EDGE and UMTS/HSPA network technologies.
M2M	Machine to Machine.
MHz	Megahertz of Radio Frequency Spectrum.
MIMO	Multiple-Input and Multiple-Output and is the use of multiple antennas at both the transmitter and receiver to improve communication performance.
NRFP	The National Radio Frequency Plan for South Africa.
NTN	Non-terrestrial Network
PMSE	Programme making and special events applications (PMSE)
PRASA	Passenger Rail Agency of South Africa.
PTM	Point to Multipoint.
PTP	Point to Point.
Radio-communication	All electronic communication by means of radio waves.
RATG	Radio Access Technology Group.
RFSAP	Radio Frequency Spectrum Assignment Plan.
RLAN	Radio Local Access Network and is the high data rate two-way (duplex) wireless data communications network.
SABRE	South African Band Re-Planning Exercise.
SADC	Southern African Development Community.
SADC RFSAP	Southern African Development Community Frequency Allocation Plan.
SAPS	South African Police Service.
Service licence	BS, ECS or ECNS licence.
SF	Single Frequency.
SFN	Single Frequency Network.

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Acronym	Explanation
TDD	Time Division Duplex.
VSAT	Very small aperture terminal used for fixed satellite services.
WAS	Wireless Access Systems and is end-user radio connections to public or private core networks.

13 APPENDIX B: EXPLANATORY NOTE TO FREQUENCY BANDS IDENTIFIED FOR IMT

195. The comments received by stakeholders thus far, and the Authority's views, are set out thematically in the tables below.

Table 13: General comments

Stakeholder comments	Authority's view
Cell C encouraged the Authority to align its approach with plans for IMT adopted internationally. Cell C supports the IMT-2020 and IMT-2030 standards. GSOA and Telkom note that the IMT Roadmap needs to be updated with outcomes from WRC-23.	The Authority proposes to align the IMT Roadmap with approaches adopted for IMT by international organisations, including resolutions adopted at WRC-23.
Cell C encourages the Authority to simplify, update, and correct the IMT roadmap, including by removing duplications, incorrect references, and the like. Similarly, the NAB commented that the IMT Roadmap should be more forward looking, and commented that the outdated and duplicated content in it should be removed. Vodacom also encouraged the Authority to withdraw the previous draft IMT Roadmap and corrects the content. Telkom proposes various corrections and updates, including removing incorrect references to outdated RFSAPs, and removing duplicate tables, including on RFSAPs. Telkom also proposes simplifying the IMT Roadmap by simply cross-referring to the SADC FAP rather than including it. Also, the SADC FAP should not dictate the IMT Roadmap, and bands up to 66GHz ought to be added to the IMT Roadmap. GSMA also recommends updating outdated information, removing reference errors, correcting mispositioned references, eliminating text inconsistencies, correcting WRC references, and reducing the document length by hyperlinking rather than including publicly available text. SACF comments that there were a number of errors in the prior draft. SARAO proposes updating the information in the IMT Roadmap. MTN also raises concerns about the quality of the document, including on incorrect references, the lengthy nature of the document, etc.	The IMT Roadmap has been updated, simplified, and corrected. Cross-references, such as to SADC documents, have been added, rather than duplicating the information. The SADC FAP is one input among many considered by the Authority, and is relevant for harmonisation purposes including to promote coordination across borders and minimise cross-border interference. Bands up to 66-71GHz have been added to the IMT Roadmap.
Cell C comments that licensees should not unduly benefit from acquiring valuable high-demand spectrum through the migration process. SACF comments that when an allocation for a band changes, including in the 3600-3800MHz range, then the Authority should reclaim the spectrum. SACF comments that there is an inconsistent approach to compensation for migration, since the Authority proposes no compensation, while rain was offered an additional 1 x 5MHz in the 2600MHz band, and Liquid Telecom was offered 2x5MHz to migrate within the 900MHz band.	The Authority will consider migration and related questions when developing the feasibility studies and RFSAPs. The Authority explained in its decision on the migration required out of IMT850[82] that the incumbent in that case would lose all access to sub-1GHz spectrum, which would impact its

[82] Government Gazette 48353 (Notice 3243 of 2023).

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Stakeholder comments	Authority's view
	competitive position if it could not access the 900MHz band. The 2600MHz in-band migration involved a change from FDD to TDD.[83]
Cell C, SACF and Telkom recommend waiting for the finalisation of the NRFP-25 before proceeding with RFSAPs and spectrum migration plans. Telkom comments on several instances in which the national footnotes are incorrect, including that all IMT bands in NF9 need to be fully included. There would be an inconsistency in using NRFP-21 in the IMT Roadmap, since it refers to soon-to-be replaced allocations, such in respect of the 850MHz band. There is also an incorrect reference to WRC-15. The GSOA recommends finalising the NRFP-25 prior to finalising the IMT Roadmap.	The NRFP-25 will be finalised before the IMT Roadmap is finalised. The references to national footnotes, the IMT bands, and WRC's have been corrected.
Vodacom supports the development of an investor-friendly environment for IMT, and is encouraged by the Authority's proposed approach to assign spectrum to its highest value use, under the heading 'spectrum set-asides are inefficient'. SACF also emphasizes promoting regulatory certainty.	Investment is one of the objects of the ECA that the Authority seeks to promote in the development of the IMT Roadmap, as explained in Section 1.
Telkom comments that it is not clear how the Authority calculated the current amount of IMT spectrum allocated, nor what additional spectrum is available. Telkom also commented on specific updates on specific bands, including mentioning that the 750MHz band should be referred to, and the TDD portion of the 2100MHz band needs to include the 15MHz between 2010 and 2025MHz. Telkom also recommended the removal of a duplicate table, and clarifications on column names and references to the NRFP.	The amount of IMT spectrum currently used and that could be made available is set out in Section 6.2. The tables now reflect RFSAPs and the amount of IMT spectrum available, and the duplicate table has been removed. The 15MHz in the TDD component of the 2100MHz band is included in the table. The references and column names have been updated and clarified.
Vodacom indicates that it has an IMT spectrum deficit in the medium term especially for urban areas but also for rural areas. Furthermore, Vodacom considered the spectrum needs estimated by the Authority in the prior version of the IMT Roadmap to not reflect the demand in the market. In particular, spectrum in the 3600-3800MHz band currently assigned for fixed-wireless access ("FWA") is unlikely to provide enough capacity to meet demand, given the number of base stations required. More low and mid-band spectrum is needed to improve coverage and capacity economically and efficiently. Telkom, SACF, and SARAO comment that forecasts of spectrum demand must be updated.	The Authority has considered demand for IMT spectrum in Section 7.3. The Authority proposes migrating FWA users out of the 3600-3800MHz band, in line with the proposals set out for the band in Section 9.2.
Vodacom comments that the Authority takes into account additional factors beyond batteries where machine-type devices are considered, since many 2G and 3G devices will continue to have a useful life beyond battery life, and it will be financially challenging for businesses to replace all such devices. SACF comments that the Authority licenses spectrum on a technology-neutral basis.	The Authority's approach to licensing is technology-neutral, as explained in Section 5.1.
Vodacom considers that the Ministerial Policy on Next-Generation Radio Frequency Spectrum for Economic Development ("NG Policy") published in 2024 has material errors in law and that even though the Authority must consider it, the Authority need not blindly apply it and its decisions must be based on evidence and merit. Comsol provided an extract from the same policy, and commented that the Authority's spectrum outlook must be updated every five years, and the NRFP must be updated. Comsol provided an extract of text from the NG Policy indicating that it supersedes the 2010	The Authority considers Ministerial policies in terms of the ECA, and will do so in this case when planning IMT spectrum, as set out in Section 3.3. The spectrum outlook will be considered in due course, and the NRFP is currently being updated.

[83] Government Gazette 43341 (Notice 285 of 2020).

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Stakeholder comments	Authority's view
Radio Frequency Spectrum Policy for South Africa[84] and spectrum-related aspects of the 2016 National Integrated ICT Policy White Paper[85].	
Telkom comments that there is uncertainty around the wholesale open access network (WOAN), but that the Policy on High Demand Spectrum and Policy Direction on the licensing of a Wireless Open Access Network[86] are still in force. SACF comments that the set-aside for the WOAN be licensed on a temporary basis.	Given the uncertainties around the WOAN, including that it is not mentioned in the latest spectrum-related policy direction from the Minister, this is not discussed in the IMT Roadmap.
Vodacom considers that a single wholesale operator or active radio access network ("RAN") sharing involving a number of mobile network operators using TDD spectrum may not be optimal. This is because fragmented assignments of less than 40/50MHz does not allow the full benefits of IMT-Advanced or IMT-2020 to be realised. While small assignment blocks may be sub-optimal, they can have benefits for consumers when combined with a licensee's other spectrum assignments.	The spectrum block sizes will be considered when developing RFSAPs. The Authority notes the development of RAN sharing in South Africa and considers this on a case-by-case basis. The new ministerial policy direction on next generation radio frequency spectrum for economic development is discussed in Section 3.3.
Vodacom proposes that timelines for migration be published (made transparent) and that quarterly updates are provided. Telkom recommended that the section "Considerations of IMT bands for implementation of 2014 Roadmap" be updated, including on progress with migrations, implementation of RFSAPs, channeling plans, band status, etc. SACF recommends that activities foreseen by the Authority need to be updated. MTN also requests that timelines for implementation be provided, and raises concerns that there has been very little progress since the previous IMT Roadmap was published in 2019.	The proposed timelines are set out in Section 11, and will be included in RFSAPs, which will be published in the government gazette.
Vodacom considers that licensees that have national spectrum licences are in a better position to supply the needs of potential spectrum park users given the Authority's findings that spectrum parks can be spectrally inefficient when there are different competing interests of the users. Telkom proposes removing the reference to spectrum parks since this is an outdated concept and creates regulatory uncertainty, including for the 2100MHz and 3500MHz bands.	Spectrum parks are not proposed in the current version of the IMT Roadmap but might be considered in future. There are no spectrum parks in the 2100MHz or 3500MHz bands.
Vodacom comments that HIBS should only be permitted for use by existing licensees in respect of their own assignments, following the approach adopted by the FCC Supplementary Coverage Order. WRC-23 resolutions 221 and COM4/4 recommend protections for existing services on a primary basis. Cross-border interference needs to be considered, and interference with existing services needs to be prevented. The Authority needs to update existing RFSAPs to accommodate HIBS, including limits on power-flux-density. Existing licenses will need to be amended to accommodate HIBS. Telkom supports the development of a regulatory framework for HIBS, and updating RFSAPs to accommodate HIBS. SACF proposes that if HIBS are going to be licensed to new licensees, they should pay for the IMT spectrum in the same way that incumbents paid for it. Rather, access seekers ought to approach existing licensees on a commercial basis to use HIBS. MTN proposes that an	Existing RFSAPs will be updated to accommodate HIBS in due course, as explained in Section 5.3. The Authority's proposed approach is aligned with the outcomes of WRC-23.

[84] Government Gazette 33119 (Notice 306 of 2010).

[85] Government Gazette 40325 (Notice 1212 of 2016).

[86] Government Gazette 42597 (Notice 1013 of 2019).

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Stakeholder comments	Authority's view
inquiry into HIBS be carried out. SARAO requests clarify on the deployment of HIBS, since this threatens radio frequency interference in the square kilometre array area. MTN recommends aligning the IMT Roadmap with the outcomes of WRC-23 on HIBS.	
Telkom comments that M.2083 should not be referred to in the policy/legislation section but rather in the technical section. This section should also be cross-referenced rather than included in the document. Telkom also comments that text referring to someone needing to look into this recommendation needs to be clarified. Furthermore, latency for IMT-2020 should be added.	M.2083 is briefly referred to in the international context section, Section 4.1. Its contents have been simplified in the IMT Roadmap. The text referring to looking into the recommendation has been removed. Section 4.1.3 on IMT-2020 refers to latency.
SACF comments that the IMT Roadmap is not an appropriate place to consider universal service obligations.	The IMT Roadmap provides a broad framework for all of the key aspects of the management of IMT spectrum, including universal service, as set out in Section 10.2.
Huawei recommends replacing effective isotropic radiated power ("EIRP") with total radiated power ("TRP") when setting out maximum radiated power limits in order to accommodate active antennae systems ("AAS") in respect of TDD bands above 2GHz. Huawei proposes specific standards in this regard, including CEPT ECC Decision (11)06[87] and ECC Report 281[88].	RFSAPs are to be updated to introduce TRP in order accommodate AAS.

Table 14: Comments on bands that are not proposed for changes in this IMT Roadmap

Stakeholder comments	Authority's view
Vodacom comments that the Authority has allocated spectrum in the ranges 380 - 387 & 387 – 390 & 390 – 399.9MHz to SAPS but it is not clear whether SAPS has completed its migration. The 380MHz band will be complementary to the 450MHz band once standardised by the 3GPP and so Vodacom proposes allocating the band for IMT in addition to PAMR, PPDR, and PMR services. That way the band could be used for IMT when not in use for the other applications.	The Authority plans to implement international recommendations such as those agreed to in WRC-23. Since the 380MHz, 410-430MHz, and 600MHz bands were not identified for IMT in Region 1 at WRC-23, they are not currently being considered for reallocation to IMT.
Vodacom proposes that the bands 410 – 420 & 420-430 MHz not be allocated exclusively to be Digital Public Trunking as set out in the current RFSAP for the band.[89]	
NAB recognises that the Authority is following the decision in WRC-23 that the bands 470-694MHz be allocated exclusively to broadcasting. Vodacom, on the other hand, proposes that IMT600MHz (3GPP band 71 ranging between 617 – 652 and 663 – 698 MHz) be considered for IMT by the Authority due to its coverage characteristics, and since the analogue switch-off will allow retuning of transmitters to below the IMT600MHz range (potentially below 575MHz). This band has deep indoor penetration capabilities, for example. It could be allocated to IMT on a secondary basis before the analogue switch off, to enable its use for IMT in areas where the band is not being used for broadcasting purposes. There are 624 device variants that support B71 or n71. Vodacom thus encourages the Authority to set out a plan to enable the more efficient use of spectrum for broadcasting, and a plan to make available the	

[87] See: https://docdb.cept.org/download/1531

[88] See: https://docdb.cept.org/download/3419

[89] Government Gazette 49079 (Notice 3766 of 2023).

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Stakeholder comments	Authority's view
third digital dividend for assignment for IMT. SACF similar proposes that the 600MHz band be considered for IMT.	
Vodacom recommends expediting the auction of the IMT450MHz band. Telkom comments on certain errors on references to TDD and FDD in the same band, and proposes removing references to CDMA450. SARAO proposes removing all links in the 450MHz band in the Karoo Central Astronomy Advantage Areas ("KCAAA"). Huawei considers that there are a limited number of devices for IMT in this band.	This IMT450MHz RFSAP is in force and the band is planned to be auctioned. The RFSAP provides protection for the KCAAA. The incorrect references have been removed.
Telkom comments that there are incorrect references and content in relation to the 700MHz, 750MHz bands. Huawei considers there to be limited devices in the IMT750MHz band.	The incorrect references and content have been updated. An RFSAP is in force in this band.
Vodacom recommends that progress on the implementation of RFSAP for the IMT850MHz band and specific migration activities still required, since the latter RFSAP ought to have been repealed by 1 April 2024. Telkom also recommended that references to this band as being available for IMT be removed.	The migration required in the RFSAP for the 850MHz band has been completed, and the RFSAP is no longer in force. The reference to the band being available for IMT has been removed.
Huawei comments that there are 1 175 LTE devices that support the core L-band (Band 32 SDL), 1452-1496 MHz, and proposes that assignments be made for SDL purposes. The GSOA and Viasat comment that there has been little deployment of IMT services in band 1427-1518MHz to date. Viasat proposes that mitigation measures be put in place for satellite services in the L-band, such as a suitable guard band. Vodacom, on the other hand, proposes aligning allocations in this band to ITU Region 1 to include FIXED, MOBILE except aeronautical mobile, BROADCASTING and BROADCASTING-SATELLITE, and assigning this band via a spectrum auction in 2025/26. Telkom comments that the band needs to be cleared of FS links if it is to be licensed for IMT. It no longer has a licence for FS links in this band. Telkom recommends that the incorrect references to FS, T-DAB, and S-DAB, should be removed. SACF requests clarity on whether the band is being used or not, and explains that references to ITU-R Working Party 5D are outdated and should be deleted.	The updated allocation for the band is reflected in NRFP-25 (see Section 14.5) and will be auctioned in due course. The current occupancy of the band will be monitored and tested by the Authority. The RFSAP for 1427-1518MHz is in force. The Authority may update this RFSAP to mitigate possible interference with adjacent frequency bands. Outdated references have been deleted.
Vodacom further proposes that a feasibility study be carried out for the band 1518-1525MHz given the reduced demand for proposed assignments in that band for repeater links for land mobile radio, including assignments for outside broadcasting links. An RFSAP should subsequently be developed.	The band 1518-1525MHz was not identified for IMT in WRC-23 and is therefore outside of the scope of the IMT Roadmap.
The GSOA comments that the frequency ranges 1518-1559 MHz (space-to-Earth) and 1626.5-1660.5 and 1668-1675 MHz (Earth-to-space) are used for a variety of mobile satellite services ("MSS") including Global Maritime Distress and Safety System (GMDSS), Public Protection and Disaster Relief (PPDR) and Aeronautical Mobile Satellite (Route) Service (AMS(R)S). There are also advances in non-terrestrial-network ("NTN") technologies such as Direct to Device ("D2D") and IoT services compatible with 3GPP's 5G NTN standards. Viasat makes similar comments, and requests protection from IMT services by ruling out single frequency links in 1518-1525MHz, limiting emitted power, adopting indoor-use only requirements in 1492-1518MHz, and establishing a suitable guard band, or limiting IMT use to below 1492MHz. SARAO raises concerns about D2D services and possible radio frequency interference at the SKA, and requests clarity on the Authority's approach to IMT-satellite, and enforcement measures to protect the SKA.	The Authority may consider ITU recommendation ITU-R M.2159-0 for coordination / coexistence between IMT and MSS, as explained in Section 5.2. The Authority notes that the ITU has agreed to use the term Direct Connectivity between Mobile-Satellite Service space station and IMT UEs ("DC-MSS-IMT") for all connectivity between terrestrial IMT and MSS. A suitable guard band may be considered for the 1492-1518MHz RFSAP.

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Stakeholder comments	Authority's view
Vodacom suggests that a feasibility study be carried out for the efficient use of the band 2025 – 2110 paired with 2200 - 2285 MHz, given the Authority's proposed use for the band for BFWA.	BFWA is outside of the scope of the IMT Roadmap.
Vodacom proposes that the band 2290 – 2300 MHz might be used by incumbents in the 2300-2400MHz band so as to ensure a more competitive assignment of spectrum in the latter band.	The bands adjacent to the 2300-2400MHz bands are outside of the scope of the IMT Roadmap.
Vodacom proposes that, in order to make the 2300-2400MHz freely available, that the ISM range be limited to 2410 – 2493.5 MHz. Furthermore, the RFSAP for the band 2300-2400MHz needs to be updated to reflect the migration of the incumbent out of this band. Telkom comments that the band 2300-2400MHz is used for IMT, including fixed wireless access (FWA). The upper part of 2.4GHz is used for WLAN (WiFi) among other services.	The band above 2400MHz is outside of the scope of the IMT Roadmap, and the RFSAP for 2300-2400MHz is in force.
Telkom and Vodacom comment on an incorrect reference to FDD arrangements in the 2600-2790MHz band. Telkom comments that references to outdated information should be removed.	The reference to FDD arrangements has been removed. References to outdated information have been removed.
Telkom notes that the reference to 2.7-2.9GHz should be removed since it is not relevant to IMT.	This has been removed.
The GSOA, SACF, and Telkom pointed out an incorrect reference to a feasibility study in the 3300-3400MHz band, for which there is already an RFSAP. SACF and Telkom further comment that references in the previous draft to WP5D can be deleted. Telkom also comments that references to the 3300-3400MHz band should be corrected. Vodacom recommends expediting the assignment process for this band given the large device ecosystem. Huawei comments that the ecosystem in this band is mature. MTN suggests that the Authority studies the extent of radar/radiolocation use of this band, and that all existing transmissions ought to have been cleared.	The RFSAP for 3300-3400MHz has already been issued, however, exclusion zones may need to be created. The reference to a feasibility study is outdated and has been deleted. The band range has been corrected and there is no longer a reference to WP5D. The Authority plans to assign this band for IMT services.
SACF, Telkom and Vodacom comment on an incorrect reference to Wi-max services in the 3400-3600MHz band. Telkom also recommends that the comments and references on the band 3300-3600MHz should also be updated.	The incorrect reference to Wimax has been removed, and the comments and references on this band have been updated.
Telkom comments that the bands 31.8-33.4GHz, 47.2-50.2, 50.4-52.6GHz, 57-66GHz, 81-86GHz, were not identified for IMT by WRC-23 (only 47.2-48.2GHz was identified), and so should be removed. MTN and SACF also comment on incorrect references to 47.2-50.2GHz and 66 - 76GHz.	These bands are not being considered for IMT and has been removed.
Telkom recommends that comments on the 81-86 GHz band be updated to reflect the NRFP-21.	The 81-86GHz band was not identified for IMT in WRC-23 and so is not being considered here.

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Table 15: Stakeholder comments and the Authority's responses for the 1 710-2 200 MHz band

Stakeholder comments	Authority's view
Several stakeholders commented that RFSAPs are needed for existing IMT1800MHz and IMT2100MHz assignments.	The Authority is developing the RFSAP for the terrestrial component of IMT for the band 1 710-2 200, including by extending the IMT2100MHz band by 30MHz, and is considering information on this for the feasibility study.
Cell C and Vodacom support extending the IMT2100MHz band by 30MHz. Vodacom notes the limited current device support and recommends a feasibility study.	
Cell C and Telkom comment that the sub-band 2170 - 2200MHz // 1980 - 2010MHz could be used for IMT-satellite services. Telkom recommends a feasibility study before expanding the IMT2100MHz band. An RFSAP can then be prepared and the band should be assigned through a competitive process.	
Telkom comments on incorrect references in the prior draft in the '1700-2290MHz' section. These include incorrect references to the 450MHz band, SADC frequency arrangements, fixed PTP band, the FS band, prior assignments to MTN and Vodacom, an available guard-band between 1915-1920MHz, and delays in the use of IMT2100.	Comments on this band have been updated in Section 9.1.

Table 16: Stakeholder comments and the Authority's responses for the 1880 – 1920 MHz band

Stakeholder comments	Authority's view
Vodacom supports the assignment of this band for IMT, following the development of a RFSAP. Vodacom expresses skepticism about the band's use for DECT services, and considers that the IMT1900 band has strong terminal support, and recommends a band b/n39 deployment.	The Authority is considering information on the value of this band for IMT use, such as in respect of potential auction values, the network costs avoided by using this band for IMT, and any other benefits.
Huawei expressed concerns regarding the potential use of this band for railway industry communications, given that the 1900-1910 MHz band has been identified for Railway Mobile Radio services in the EU.[90] Similarly, PRASA requested that the frequency range 1895-1915MHz be set aside for railway use. Telkom comments that this band can only be recommended for railway use after a feasibility study has been carried out.	The Authority is considering information on the value of this band for IMT in this band, including for railway use. Information such as in respect of potential auction values, network costs avoided by using this band for railways, or any other benefits that can be identified, is being considered.
The DECT Forum has expressed concern regarding the interference of new technologies with incumbent DECT users in the 1880-1900 MHz subrange. The Forum has further expressed their interest in introducing DECT NR+ to this subrange, which may be used for technologies such as Programme Making and Special Events (PMSE). Their recommendation is to allocate the entire 1880-1920 MHz band to DECT.	There is substantial demand for additional spectrum for IMT use including by railways, as set out in Section 7, and it is improbable that alternative niche uses such as DECT and PMSE. Nonetheless, the Authority is considering information on the value of the use of these bands for alternative services.
Shure cites the importance of PMSE in the 1880-1900 MHz band, suggesting that the Authority studies the compatibility of IMT services with the band's incumbent DECT technologies.	
Telkom comments that only the band 1900-1920MHz is available for IMT use.	

[90] See Commission Implementing Decision (EU) 2021/1730 of 28 September 2021, available at: Commission Implementing Decision (EU) 2021/1730 of 28 September 2021 on the harmonised use of the paired frequency bands 874,4-880,0 MHz and 919,4-925,0 MHz and of the unpaired frequency band 1900-1910 MHz for Railway Mobile Radio (notified under document C(2021) 6862) (Text with EEA relevance) - Publications Office of the EU

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Table 17: Stakeholder comments and the Authority's responses for the 3600 – 3800 MHz band

Stakeholder comments	Authority's view
Vodacom, Comsol, Cell C, Huawei, rain, and Telkom support the assignment of this band for IMT, following the development of a RFSAP. Telkom also considers that a feasibility study is needed for this band, including in order to consider the migration process for incumbents.	The Authority proposes the development of a RFSAP for IMT services in this band.
rain suggests that due to their deployment of the latest compatible 5G equipment, licensees such as themselves, Mthinte, and One Telecom, do not need to be migrated from this band. rain further requests their direct participation in the feasibility study for this band, as they currently control 80MHz within this band. MTN comments that incumbent users must migrate since there is a change in allocation at WRC-23. MTN also requests clarity on overlapping assignments in the band.	Incumbents licensed for BFWA in this band are going to have to migrate their services outside of this band.
Telkom comments that the Authority should not refer to BFWA, FS PTP and FSS in this band in the past tense as these services are operating in the band. MTN recognises that this band is allocated for BFWA use on a secondary basis, provided that BFWA could operate alongside FS PTP and/or FSS. Comsol notes that FS PTP and FSS applications have been operating on a coordinated basis in the band. Comsol explained that the European Conference of Postal and Telecommunications Regulators ("CEPT") supports allocation of the band to IMT, with the same conditions applying across the 3400-3800MHz band, and provided that there are no undue constraints on existing services. There is a PFD-limit and coordination procedures that protect fixed-satellite services. If the PFD limit at the border is exceeded, then coordination under no. 9.21 applies.	Coexistence / coordination between IMT and other services will be considered for this band during the development of the feasibility study, taking into account the comments in Section 5.2.
SACF and Telkom comment that there was an error referring to 3600-3700MHz in the previous draft.	This has been corrected.
GSOA expressed concern that deploying IMT services could create incompatibility issues for satellite uses, potentially resulting in the displacement of the latter from this band. The GSOA requested information on what protection would be put in place for satellite operators in this band. MTN notes that where allocations to different BFWA operators overlap, coordination is required between these operators, as well as FS PTP and FSS systems. Further, C-band currently comprises 31% of satellite capacity in Africa.	The Authority is considering whether and how coordination between IMT and satellite services can be included in the RFSAP for this band. See also Section 5.2.

Table 18: Stakeholder comments and the Authority's responses for the 4800 – 4990 MHz band

Stakeholder comments	Authority's view
Vodacom, MTN, Cell C, and Telkom support the assignment of this band for IMT, following the development of a RFSAP. Vodacom further recommends the expedited migration of current incumbents who are not licensed to provide IMT services in this band. Vodacom comments that there are 974 devices that support this band. MTN notes the growing use of the band in China. Telkom also supports the development of a feasibility study for this band, proposed additional wording for the text on this band.	The Authority proposes the development of an RFSAP for IMT services in this band. The text has been updated.
Huawei, however, urges that the feasibility of assigning this band for IMT be assessed before developing the RFSAP, noting the ecosystem's moderate maturity with only moderate 974 announced devices. MTN cites that the growing device ecosystem and increased assignments in China warrant RFSAP development.	The Authority is considering information on device availability and the maturity of this band for IMT services.

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Table 19: Stakeholder comments and the Authority's responses for the 6425 – 7125 MHz band

Stakeholder comments	Authority's view
Huawei, Telkom, and MTN support the assignment of this band for IMT, following the development of a RFSAP. Vodacom supports the feasibility study yet recommends a consultative process before the migration of existing incumbents.	The Authority proposes the development of a RFSAP for IMT services in this band given that it has been identified for IMT in WRC-23.
Huawei supports a feasibility study regarding the coexistence of fixed services with IMT.	The Authority will consider how coexistence / shared use of the band could be included in the RFSAP. See Section 5.2.
Telkom cites studies indicating not all FS links will need to be migrated, as these could coexist with IMT in rural areas. Vodacom comments that a feasibility needs to be carried out on how microwave assignments in 6GHz and lower 7GHz can be migrated to suitable alternatives sub-8GHz that achieve similar throughputs and distances.	
The Dynamic Spectrum Alliance (DSA) disputes that the WRC-23 has allocated the use of this band for IMT on a primary basis, citing that as per WRC-23, identification for IMT should not take preference over the current allocation of the band to RLAN/WAS. The DSA further urges that the band should be used for RLAN/WAS to avoid migration costs. Similarly, the WiFi alliance proposes using the band for RLAN/WAS. The WFA reiterates the high costs involved in an unavoidable migration process should the band be deployed for IMT. The WFA further cites the advantages of the use of this band by RLAN/WAS, such as the support of over 296 million devices that will be introduced to the Wi-Fi 7 market in 2024. The performance of Wi-Fi 7, as per the WFA, would be reduced substantively without access to the entire band. However, Telkom does not support the use of this band for RLAN/WAS systems.	
Viasat does not support the deployment of this band for IMT due to its current use for mobile satellite services.	

Table 20: Stakeholder comments and the Authority's responses for the 24.25 – 27.5 GHz band

Stakeholder comments	Authority's view
MTN, Telkom, Vodacom, and Cell C support the assignment of this band for IMT, following the development of a RFSAP. Vodacom cites that the device ecosystem for this band already encompasses a fairly wide selection. Further, MTN and Vodacom recommend that the Authority places focus on the 26.5-27.5 GHz subrange due to its popularity worldwide. Vodacom comments that there are 60 devices supporting band n257 and 64 device variants supporting n258. Huawei, however, recommends a feasibility study prior to RFSAP development, noting that the EU has seen few deployments in this band.	The Authority proposes the development of a RFSAP for IMT services in this band given that is has been recommended for IMT in WRC-23.
Telkom also proposes a feasibility study for the band, and suggests changes to the wording in the text. Telkom also proposes that coordination with FS links may be possible in this band, particularly outside of high-density areas. Telkom further proposes updating the band based on NRFP-21. MTN notes that while migration may need to take place for some users, there are portions of the band that can be fast-tracked for assignment.	The wording in the text has been amended. Coordination / coexistence will be considered during the course of developing the feasibility study and RFSAP for the band, as discussed in Section 5.2. The NRFP references have been updated to reflect the latest version.

Table 21: Stakeholder comments and the Authority's responses for the 37 – 43.5 GHz band

Stakeholder comments	Authority's view
Cell C supports the assignment of this band for IMT, following the development of a RFSAP. Vodacom supports the development of a feasibility study for the band. MTN notes that AT&T is deploying	An RFSAP is proposed for this band given that is has been recommended for IMT in WRC-23. The radio

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Stakeholder comments	Authority's view
services in the 39GHz band. Telkom recommended expanding the range in the previous draft from 37-40.5GHz to 37-43.5GHz, and including the range 40.5-42.5GHz.	frequency spectrum range has been updated, and the separate reference to 40.5-42.5GHz removed.
Huawei, however, recommends that the Authority postpones RFSAP development until the ecosystem is ready, given that there are currently no devices available for this band.	The Authority is considering information on the maturity of this band for IMT.
Viasat commented that it is carrying out tests in this band and requested that the Authority considers recent developments regarding high throughput satellite services when conducting a feasibility study, as well as when designing the RFSAP.	The Authority is gathering information on test results and other information that could assist in the development of an RFSAP for this band, including on how coordination with satellite services could take place.
Telkom further proposes updating the band based on NRFP-21.	The NRFP references have been updated to reflect the latest version.

Table 22: Stakeholder comments and the Authority's responses for the 45.5 – 47 GHz band

Stakeholder comments	Authority's view
Telkom proposes RFSAPs for all relevant mmWave bands, while Vodacom supports the development of a feasibility study for the band.	The Authority will develop the RFSAP for this band given that is has been recommended for IMT in WRC-23.
Telkom further proposes updating the band based on NRFP-21.	The NRFP references have been updated to reflect the latest version.

Table 23: Stakeholder comments and the Authority's responses for the 47.2 – 48.2 GHz band

Stakeholder comments	Authority's view
Cell C and Telkom support the assignment of this band for IMT, following the development of a RFSAP. Telkom recommended correcting the range in the previous draft to 47.2-48.2GHz. Telkom comments that 47-47.2GHz wat not allocated to IMT at WRC-23, and so this band should be removed.	The Authority will develop an RFSAP for this band given that is has been recommended for IMT in WRC-23. The radio frequency spectrum range has been updated, and the 47-47.2GHz range has been removed.
MTN and Huawei, however, recommend that the Authority postpones RFSAP development until the ecosystem is ready, given that there are currently no devices available for this band. Telkom and Vodacom also support the development of a feasibility study for the band.	
Viasat has requested that the Authority considers recent developments regarding high throughput satellite services when conducting a feasibility study, as well as when designing the RFSAP.	The Authority is considering whether and how coordination with satellite services could take place.
Telkom further proposes updating the band based on NRFP-21.	The NRFP references have been updated to reflect the latest version.

Table 24: Stakeholder comments and the Authority's responses for the 66 – 71 GHz band

Stakeholder comments	Authority's view
Cell C and Telkom support the assignment of this band for IMT, following the development of a RFSAP. Telkom also recommended that a feasibility study be developed, and that the range be limited to 66-71GHz. MTN also noted the typographical error in the previous draft proposing 66-71GHz.	The Authority will develop an RFSAP for this band given that is has been recommended for IMT in WRC-23. The radio frequency spectrum range has been updated.
Huawei, however, recommends that the Authority postpones RFSAP development until the ecosystem is ready, given that there are currently no devices available for this band.	
MTN recommends allocating this band for local wireless networks, such as 60GHz WiGig deployments, due to its limited wall penetration and high reflectivity.	

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Stakeholder comments	Authority's view
Telkom further proposes updating the band based on NRFP-21.	The NRFP references have been updated to reflect the latest version.

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14 APPENDIX C: NRFP EXTRACTS BANDS IMT BANDS

The South African allocations in the International Telecommunications Union Edition 2024 of the Radio Regulations to the Mobile Radiocommunications Services and Identification for Implementation of the Terrestrial Component of IMT Frequency bands are shown in the sections below.

14.1 450 MHz

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
450-455 MHz	**450-455 MHz**		RFSAP- GG No. 48353, 31 March 2023 (Notice 3246 of 2023)
FIXED	FIXED	~~Fixed links (450 – 453 MHz)~~	~~Paired with 460 – 463 MHz~~
MOBILE 5.286AA	MOBILE 5.286AA NF9	Government Services (fixed links) ~~Trunked Mobile BTX (454.425 – 460 MHz)~~	~~Paired with MTX (464.425 – 470 MHz)~~
		~~Single Frequency Mobile (453 – 454 MHz)~~ ~~Paging (454 – 454.425 MHz)~~	~~This band is currently used for a variety of fixed and mobile systems in the various SADC countries~~.
		IMT450 (450-470 MHz)	ITU-R Recommendation M.1036-~~6~~ 7 ~~latest version.~~ Resolution 224 (Rev WRC-~~19~~ 23) Radio Frequency Spectrum Regulations as amended (Annex B)
		~~PMR and/or PAMR~~ IoT, M2M	

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
			(GG. No. 38641, Notice 279, 30 March 2015). ~~Radio Frequency Spectrum Assignment Plan 2015, Government Gazette 38640 (Notice 270 of 2015)~~ International Mobile Telecommunication Roadmap (GG No.42829 Notice 600 of 2019). ~~New RFSAP to be developed.~~
		PPDR	Consideration of the future spectrum needs of Broadband Public Protection and Disaster Relief (PPDR) in the range 380-470 MHz as described in the most recent ITU-R M.2015, while taking into account studies called for by Resolution 646 (WRC-15) for technical and operational measures. Draft Frequency Migration Plan (GG 50389, Notice 4559 of 24 March 2024)
5.209 5.271 5.286 5.286A 5.286B 5.286C 5.286D 5.286E	SPACE OPERATION (Earth-to-space) SPACE RESEARCH (Earth-to-space) 5.209 5.286 5.286A 5.286B 5.286C		

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
455-456 MHz FIXED MOBILE 5.286AA	**455-456 MHz** FIXED MOBILE 5.286AA NF9	Government Services (fixed) ~~Trunked mobile BTX (454.425 – 460 MHz)~~ IMT450 (450-470 MHz) IoT M2M PPDR	RFSAP- GG No. 48353, 31 March 2023 (Notice 3246 of 2023) ~~Paired with 464.425 – 470 MHz~~ ITU-R Recommendation M.1036-~~6~~ 7 ~~latest version.~~ Resolution 224 (Rev WRC-~~19~~ 23) Radio Frequency Spectrum Regulations as amended (Annex B) (GG. No. 38641, Notice 279, 30 March 2015). ~~Radio Frequency Spectrum Assignment Plan 2015, Government Gazette 38640 (Notice 270 of 2015)~~ International Mobile Telecommunication Roadmap (GG No.42829 Notice 600 of 2019). ~~New RFSAP to be developed~~ Consideration of the future spectrum needs of Broadband Public Protection and Disaster Relief (PPDR) in the range 380-470 MHz as described in the most recent ITU-R M.2015, while taking into account studies called for by Resolution 646

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
5.209 5.271 5.286A 5.286B 5.286C 5.286E	5.209 5.286A 5.286B 5.286C		(WRC-15) for technical and operational measures.
456-459 MHz FIXED MOBILE 5.286AA	**456-459 MHz** FIXED MOBILE 5.286AA NF9	~~Trunked mobile BTX (454.425 – 460 MHz~~) IMT450 (450-470 MHz) IoT M2M Government Services (Fixed links)	RFSAP - GG No.48353 of 31 March 2023 (Notice 3246 of 2023) ~~Paired with 464.425 – 470 MHz~~ ITU-R Recommendation M.1036-~~6~~ 7 ~~latest version.~~ Resolution 224 (Rev WRC-~~19~~ 23) Radio Frequency Spectrum Regulations as amended (Annex B) (GG. No. 38641, Notice 279, 30 March 2015). ~~Radio Frequency Spectrum Assignment Plan 2015, Government Gazette 38640 (Notice 270 of 2015)~~ International Mobile Telecommunication Roadmap (GG No.42829 Notice 600 of 2019). ~~New RFSAP to be developed~~ Consideration of the future spectrum needs of Broadband Public Protection and Disaster Relief (PPDR) in the range 380-470 MHz as described in the most recent ITU-

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
5.271 5.287 5.288	5.287	PPDR	R M.2015, while taking into account studies called for by Resolution 646 (WRC-15) for technical and operational measures.
459-460 MHz FIXED MOBILE 5.286AA	**459-460 MHz** FIXED MOBILE 5.286AA NF9	~~Trunked Mobile BTX 454.425 – 460 MHz~~ IMT450 (450-470 MHz) Government Services (Fixed links) IoT M2M Government Services	RFSAP- GG ~~overnment Gazette~~ No. 48353of 31 March of 2023 (Notice 3246 of 2023 ~~Paired with 464.425 – 470 MHz~~ ITU-R Recommendation M.1036-~~6~~ 7 ~~latest version.~~ Resolution 224 (Rev WRC-~~19~~ 23) Radio Frequency Spectrum Regulations as amended (Annex B) (GG. No. 38641, Notice 279, 30 March 2015).~~30 March 2015).~~ ~~Radio Frequency Spectrum Assignment Plan 2015, Government Gazette 38640 (Notice 270 of 2015)~~ International Mobile Telecommunication Roadmap (GG No.42829 Notice 600 of 2019). ~~New RFSAP to be developed~~

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
5.209 5.271 5.286A 5.286B 5.286C 5.286E	5.209 5.286A 5.286B 5.286C	PPDR	Consideration of the future spectrum needs of Broadband Public Protection and Disaster Relief (PPDR) in the range 380-470 MHz as described in the most recent ITU-R M.2015, while taking into account studies called for by Resolution 646 (WRC-15) for technical and operational measures.
460-470 MHz FIXED MOBILE 5.286AA 5.287 5.288	**460-470 MHz** FIXED MOBILE 5.286AA 5.287 NF9	~~Fixed Links (460 – 463 MHz)~~ ~~Trunked Mobile MTX (464.425 – 470 MHz)~~ ~~Single Frequency Mobile (463.025 – 463.975 MHz)~~ ~~Low Power Mobile Radio (463.975 MHz, 464.125 MHz,~~	RFSAP- GG ~~Government Gazette~~ No. 48353 of 31 March 2023. (Notice 3246 of 2023) ~~Paired with 450 – 453 MHz~~ ~~Paired with BTX (454.425 – 460 MHz)~~

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
		~~464.175 MHz, 464.325 MHz, 464.375 MHz)~~ ~~Single Frequency Mobile (464.375 – 464.425 MHz)~~ IMT450 (450-470 MHz) ~~Security Systems (464.5375 MHz)~~ ~~Non-specific SRDs (464.5 – 464.5875 MHz)~~ IoT M2M Government Services PPDR	ITU-R Recommendation M.1036-~~6~~ 7 ~~latest version.~~ Resolution 224 (Rev WRC-~~19~~ 23) Radio Frequency Spectrum Regulations as amended (Annex B) (GG. No. 38641, Notice 279, 30 March 2015).~~30 March 2015).~~ ~~Radio Frequency Spectrum Assignment Plan 2015, GG 38640 (Notice 270 of 2015)~~ International Mobile Telecommunication Roadmap (GG No.42829 Notice 600 of 2019). ~~New RFSAP to be developed~~ Consideration of the future spectrum needs of Broadband Public Protection and Disaster Relief (PPDR) in the range 380-470 MHz as described in the most recent ITU-R M.2015, while taking into account studies called for by Resolution 646 (WRC-15) for technical and operational measures.
Meteorological-satellite (space-to-Earth) 5.290	Meteorological-satellite (space-to-Earth)		

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
~~5.287 5.288~~ 5.289 ~~5.290~~	Earth exploration-satellite (space-to-Earth) ~~5.287~~ 5.289		

14.2 700 MHz, 750MHz

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
694-790 MHz MOBILE except aeronautical mobile 5.312A 5.312B 5.317A	**694-790 MHz** MOBILE except aeronautical mobile 5.312A 5.312B 5.317A NF9 ~~NF9~~	IMT700 MTX (703 – 733 MHz) IMT750 (733 to 758 MHz) ~~LTE~~ ~~LTE Advance~~	Paired with BTX (758 – 788 MHz) International Mobile Telecommunication Roadmap (GG No.42829 Notice 600 of 2019). ~~Radio Frequency Spectrum Assignment Plan (GG 38640 Notice 271 and 272 of 2015) as amended~~ Radio Frequency Spectrum Assignment Plan IMT700 (GG 47788 Notice 2886 of 2022) Radio Frequency Spectrum Assignment Plan IMT750 (GG 47788 Notice 2887 2022)

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
	~~5.312A~~ ~~5.317A~~	SDL	IMT in accordance with ITU-R Recommendation ITU-R M.2090 latest version ~~and Resolutions 760 (WRC-19)~~ Res 224 (Rev. WRC-23), Res 760 (Rev. WRC-23) and Res 749 (Rev. WRC-23), apply Recommendation ITU-R M.1036-7 . HCM4A for cross-border coordination Consideration of the future spectrum needs of Broadband Public Protection and Disaster Relief (PPDR) in the range 694-790 MHz as described in the most recent ITU-R M.2015, while taking into account studies called for by Resolution 646 (WRC15) for technical and operational measures. SADC PPDR recommendation Framework for Harmonisation of Radio Frequency Spectrum for Public Protection and Disaster Relief (PPDR) in SADC Edition 2020 ~~Band IV/V analogue television is to be migrated to digital television and ensure harmonisation with SADC. WRC-07, WRC-12 and WRC-15 allocated this band to Mobile service~~

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
BROADCASTING 5.300 5.312		HIBS (694-960 MHz) – ~~Resolution 213 (WRC-23) applies~~. Wireless microphones (470-786 MHz)	~~except aeronautical mobile and identified it for IMT.~~ ~~Fixed links operating in this band will have to be migrated in order to accommodate IMT.~~ Resolution 213 (WRC-23) applies

14.3 800 MHz

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
790-862 MHz FIXED	**790-862 MHz** FIXED	IMT800 MTX (832 - 862 MHz)	~~Paired with 868.1 – 876 MHz~~ Paired with BTX (791 – 821 MHz)

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
MOBILE except aeronautical mobile 5.312B 5.316B 5.317A	MOBILE except aeronautical mobile 5.316B 5.317A NF9	~~Fixed Links (856 – 864.1 MHz)~~ ~~Wireless Access (827.775 – 832.695 MHz)~~ ~~IMT850 MTX (825 – 830 MHz)~~	~~Paired with 827.775 - 832.695 MH~~z ~~Paired with BTX (870 – 875 MHz)~~ Radio Frequency Spectrum Assignment Plan (GG No 47788, Notice 2888 of 20th December 2022) IMT 850 RFSAP GG No 48353, Notice 3245 of 31st March 2023 was Repealed. This followed the publication of the Reasons Document GG 48353 (Notice 3243) of 31st March 2023 Res 224 (Rev. WRC-23), Res 760 (Rev. WRC-23) and Res 749 (Rev. WRC-23) apply ~~International Mobile Telecommunication Roadmap (GG No.42829 Notice 600 of 2019) . Radio Frequency Spectrum Assignment Plan (GG 38640 Notice 271 and 272 of 2015) as amended IMT~~ IMT in accordance with ITU-R Recommendation ~~ITU-R~~ M.2090 latest version and Resolution 760 (WRC-15) applies

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
		HIBS (694-960 MHz) – Resolution 213 (WRC-23) applies . PMSE (823–832 MHz)	Recommendation ITU-R M.1036-~~6~~ 7 Resolution 213 (WRC-23) applies HCM4A for cross-border coordination Consideration of the future spectrum needs of Broadband Public Protection and Disaster Relief (PPDR) in the range 694-790 MHz as described in the most recent ITU-R M.2015, while taking into account studies called for by Resolution 646 (WRC15) for technical and operational measures. SADC PPDR recommendation Framework for Harmonisation of Radio Frequency Spectrum for Public Protection and Disaster Relief (PPDR) in SADC Edition 2020 ~~Band IV/V analogue television is to be migrated to digital television and ensure harmonisation with SADC.~~ ~~WRC-07, WRC-12 and WRC-15 allocated this band to Mobile service except aeronautical mobile and identified it for IMT.~~

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
BROADCASTING 5.312 5.319	5.312A 5.312B 5317A	Body Worn Equipment (823-826 MHz)	~~Fixed links operating in this band will have to be migrated in order to accommodate IMT.~~ ~~Radio Frequency Spectrum Assignment Plan GG 42337 Notice 165 of 2019~~ ~~Radio Frequency Spectrum Assignment Plan (GG 38640 Notice 273 of 2015) as amended~~ ~~Radio Frequency Spectrum Assignment Plan GG 41082 Notice 648 of 2017~~

14.4 900 MHz

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
862-890 MHz FIXED	**862-890 MHz** FIXED	~~Fixed Links (856 – 864.1 MHz)~~ ~~Wireless Access (872.775 877.695 MHz)~~	~~Paired with 868.1 – 876 MHz~~ ~~Paired with 827.775 – 832.695 MHz~~

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
MOBILE except aeronautical mobile 5.312B 5.317A	MOBILE except aeronautical mobile 5.312B 5.317A NF9 NF10	GSM-R MTX (877.695 – 880 MHz) ~~NF10~~ IMT900 MTX (880-915 MHz) ~~IMT850 BTX (870-875 MHz)~~	Paired with 921 – 925 MHz Paired with BTX (925 – 960 MHz) ~~Paired with MTX (825-830 MHz~~) Radio Frequency Spectrum Assignment Plan GG 49556, 27 Oct 2023 Notice 3999) IMT 850 RFSAP GG No 48353, Notice 3245 of 31st March 2023 was Repealed. This followed the publication of the Reasons Document GG 48353 (Notice 3243) of 31st March 2023 Res 224 (Rev. WRC-23), Res 760 (Rev. WRC-23) and Res 749 (Rev. WRC-23) apply Radio Frequency Spectrum Regulations as amended (Annex B) (GG. No. 38641, Notice 279, 30 March 2015). ~~30 March 2015,~~ HCM4A for cross-border coordination ~~Radio Frequency Spectrum Assignment Plan GG 42337 Notice 1656 of 2019~~ ~~Radio Frequency Spectrum Assignment Plan (GG 38640 Notice 275 of 2015) as amended~~ ~~International Mobile Telecommunication Roadmap GG No.42829 Notice 600 of 2019).~~

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
			Recommendation ITU-R M.1036 ~~6~~ 7
		Wireless Audio systems and Wireless microphones (863 – 865 MHz) CT2 cordless phones (864.1 – 868.1 MHz) ~~FWA (864.1 – 868.1 MHz)~~ RFID (865 – 868 MHz) Non-specific SRD and RFID (869.4 – 869.65 MHz) Non Specific SRDs (862-863. 863-870 , 868 – 868.6 MHz, 868.7 – 869.2 MHz, 869.4 – 869.65 MHz, 869.7 – 870.0 MHz) Alarms (868.6 – 868.7 MHz, 869.25 – 869.3 MHz, 869.65 – 869.7 MHz) Social Alarms (869.2-869.25 MHz)	
		HIBS (694-960 MHz) – ~~Resolution 213 (WRC-23) applies~~ .	Resolution 213 (WRC-23) applies
		PMR for GSM-R (874.4-880.0 MHz paired with 919.4-925.0 MHz)	CEPT report 90

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
BROADCASTING 5.322 5.319 5.323			
890-942 MHz FIXED MOBILE except aeronautical mobile 5.312B 5.317A	**890-942 MHz** FIXED MOBILE except aeronautical mobile 5.312B 5.317A NF9 NF10 ~~NF11~~	IMT900 MTX (880 – 915 MHz) GSM-R (BTX) (921 - 925 MHz) RMR/FRMCS (downlink 919.4 – 925 MHz)	Paired with BTX (925 – 960 MHz Paired with MTX (877.695 – 880 MHz) Radio Frequency Spectrum Assignment Plan (GG 49556, 27 Oct 2023 Notice 3999) ~~GG 38640 Notice 275 of 2015) International Mobile Telecommunication Roadmap GG No.42829 Notice 600 of 2019). Final Frequency Migration Plan 2019 (GG No.42337 Notice 36166 of 2019)~~ HCM4A for cross-border coordination Res 224 (Rev. WRC-23), Res 760 (Rev. WRC-23) and Res 749 (Rev. WRC-23) apply GG No. 48643, Notice 822 of 2023

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
BROADCASTING 5.322 Radiolocation 5.323	Radiolocation	RFID (including, passive tags and vehicle location) (915.1 – 921 MHz)	
942-960 MHz FIXED MOBILE except aeronautical mobile 5.312B 5.317A BROADCASTING 5.322 5.323	**942-960 MHz** FIXED MOBILE except aeronautical mobile 5.312B 5.317A NF9	IMT900 BTX (925 – 960 MHz) HIBS (694-960 MHz) – ~~Resolution 213 (WRC-23) applies~~ .	Paired with MTX(880 – 915 MHz) Recommendation ITU-R M.1036-~~6~~ 7 ~~latest version.~~ Radio Frequency Spectrum Assignment Plan (GG 49556, 27 Oct 2023 Notice 3999) Res 224 (Rev. WRC-23), Res 760 (Rev. WRC-23) and Res 749 (Rev. WRC-23) apply HCM4A for cross-border coordination Resolution 213 (WRC-23) applies

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
1 427-1 429 MHz SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 5.341A 5.341B 5.341C 5.338A 5.341	**1 427-1 429 MHz** SPACE OPERATION (Earth-to-space) FIXED NF14 MOBILE except aeronautical mobile 5.341A NF9 5.338A 5.341	~~Fixed links (duplex)(1 427- 1 452 MHz)~~ IMT TDD/SDL (1427-1518) MFCN SDL	RFSAP (GG 48353 Notice 3244, 31 March 2023) ~~'s to be developed~~ This followed the publication of the Reasons Document GG 48353 (Notice 3243) of 31st March 2023.~~'s to be developed~~ ~~Paired with 1 375 – 1 400 MHz In accordance with Recommendation ITU-R F.1242~~ ITU Res. 223 (Rev.WRC-23 ~~15~~) Recommendation ITU-R M.1036 ~~6~~ 7 (International Mobile Telecommunications (IMT)) ~~Resolution 528 (Rev. WRC-19) Resolution 739 (Rev. WRC-19)~~. Res 750
1 429-1 452 MHz FIXED	**1 429-1 452 MHz** FIXED	~~Fixed links (duplex)(1 427- 1 452 MHz)~~	RFSAP (GG 48353 Notice 3244, 31 March 2023) ~~'s to be developed~~ ~~Paired with 1 375 – 1 400 MHz) In accordance with Recommendation ITU-R F.1242~~

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
MOBILE except aeronautical mobile 5.341A 5.338A 5.341 5.342	MOBILE except aeronautical mobile 5.341A NF9 5.338A 5.341	IMT (1427-1518)	Resolution 223 (Rev. WRC-23) This followed the publication of the Reasons Document GG 48353 (Notice 3243) of 31st March 2023. Recommendation ITU-R M.1036-~~6~~ 7 (International Mobile Telecommunications (IMT)) Res 750 (Rev. WRC-19).(passive) ~~Resolution 528 (Rev. WRC-19)~~ ~~Resolution 739 (Rev. WRC-19).~~
1 452-1 492 MHz FIXED MOBILE except aeronautical mobile 5.346	**1 452-1 492 MHz** FIXED NF14 MOBILE except aeronautical mobile 5.346 NF9	IMT (1427-1518)	223 (Rev. WRC-23) Resolution 761 (Rev. WRC-19) Res 750 (Rev. WRC-19).(passive) RFSAP (GG 48353 Notice 3244, 31 March 2023)~~'s to be developed~~ This followed the publication of the Reasons Document GG 48353 (Notice 3243) of 31st March 2023

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
BROADCASTING BROADCASTING-SATELLITE 5.208B 5.341 5.342 5.345	BROADCASTING BROADCASTING-SATELLITE 5.208B 5.341 5.345	~~Terrestrial Digital Audio Broadcasting (T-DAB)~~	Recommendation ITU-R M.1036 ~~-6~~ 7 International Mobile Telecommunications (IMT)) Final Frequency Migration Plan 2019 (GG No.42337 Notice 36 of 2019) Draft Frequency Migration Plan (GG 50389, Notice 4559 of 24 March 2024) ~~Resolution 528 (Rev. WRC-19)~~ ~~Resolution 739 (Rev. WRC-19).~~
1 492-1 518 MHz FIXED MOBILE except aeronautical mobile 5.341A	**1 492-1 518 MHz** FIXED MOBILE except aeronautical mobile 5.341A NF9	~~Fixed Links (1 492 – 1 517 MHz)~~ ~~Single Frequency Links (1 517 – 1 525 MHz)~~ IMT (1427-1518)	~~Paired with 1 350 – 1 375 MHz.~~ ~~In accordance with Recommendation ITU-R F.1242~~ ITU-R Res. 223 (Rev.WRC-~~15~~ 23) Radio Frequency Spectrum Assignment Plan ~~RFSAP~~ (GG 48353

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
5.341 5.342	5.341		Notice 3244 of 31st March 2023) ~~'s to be developed~~ Recommendation ITU-R M.1036-~~6~~ 7 International Mobile Telecommunications (IMT)) ~~Resolution 528 (Rev. WRC-19) and Resolution 739 (Rev. WRC-19)~~
1 518-1 525 MHz FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A	**1 518-1 525 MHz** FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.351A	IMT Satellite component	The band 1518-1559 MHz is identified for satellite component of IMT; Res.225 applies. Radio Frequency Spectrum Assignment Plan GG No. 49079 Notice 3768 of 4 August 2023 ~~Radio Frequency Spectrum Assignment Plan GG42286 Notice 125 of 2019~~ Final Frequency Migration Plan 2019 (GG No.42337 Notice 36 of 2019)

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
5.341 5.342	5.341		Draft Frequency Migration Plan (GG 50389, Notice 4559 of 24 March 2024)

14.6 1800 MHz, 1900MHz, 2100MHz

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
1 710-1 930 MHz FIXED MOBILE 5.384A 5.388 5.388A ~~5.388B~~	**1 710-1 930 MHz** FIXED MOBILE 5.384A 5.388 5.388A NF9	FWA TDD (1880 – 1900 MHz) FWA TDD (1900 – 1920 MHz) Fixed Broadband data applications (1 785 – 1 805 MHz) IMT1800 MTX (1710 – 1785 MHz) IMT2100 MTX (1920 – 1980 MHz) ~~IMT 1800 BTX (1 805-1 880 MHz)~~ ~~IMT (terrestrial)~~ IMT1900 TDD (1900 – 1920 MHz)	Paired with IMT 1800 BTX (1805 – 1880 MHz) Paired with IMT2100 BTX (2110 – 2170 MHz) ~~IMT TDD applications~~

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
			~~RFSAP's to be developed to address compatibility between TDD IMT in the band 1900-1920 MHz with FDD IMT systems deployed in the IMT2100 b~~ ~~See NF9.8 for IMT frequency band - terrestrial~~ ~~(International Mobile Telecommunications (IMT)~~) Radio Frequency Spectrum Regulations as amended (Annex B) (GG. No. 38641, Notice 279, 30 March 2015)., amended by GG 45690, 24 Dec 2021 and then in GG 48643, 18 May 2023) Res. 212 (Rev. WRC-23) Res. 223 (Rev. WRC-23) Res. 221 (Rev. WRC-23) RFSAP for the IMT1800 band to be developed. RFSAP for the IMT2100 band to be developed.
		DECT Cordless telephones (1880 – 1900 MHz) DECT Cordless Telecommunications Systems DECT-based audio applications	ITU-R Report BT.2338 (2014); ITU-R Resolution 59 (Rev.WRC-19);

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
5.149 5.341 5.385 5.386 5.387 5.388	Radio astronomy 5.149 5.341 5.385 5.388	PMR for GSM-R (1900-1910 MHz) FRMCS (1895-1951 MHz) HIBS (1 710-1 980, 2 010-2 025 MHz and 2 110-2 170 MHz) Radio astronomy (1718.8-1722.2 MHz) Radio astronomy (OH radical and molecules)	PMR for GSM-R (paired with 874.4-880.0 MHz) Resolution 221 (Rev.WRC-23) See Section 5 of this NRFC for coordination with radio astronomy
1 930-1 970 MHz FIXED MOBILE 5.388A ~~5.388B~~	**1 930-1 970 MHz** FIXED MOBILE 5.388A NF9	IMT2100 MTX (1920 – 1980 MHz)	Paired with BTX(2110 – 2170 MHz) [FIXED (HAPS) (base stations for IMT)] ~~Resolution 221 (Rev. WRC-07) (International Mobile Telecommunications (IMT))~~

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
5.388	5.388	HIBS (1 710-1 980, 2 010-2 025 MHz and 2 110-2 170 MHz1)	Res. 212 (Rev. WRC-23) Res. 223 (Rev. WRC-23) Res. 221 (Rev. WRC-23)
1 970-1 980 MHz FIXED MOBILE 5.388A ~~5.388B~~ 5.388	**1 970-1 980 MHz** FIXED MOBILE 5.388A NF9 5.388 5.388B	IMT2100 MTX (1920 – 1980 MHz) HIBS (1 710-1 980, 2 010-2 025 MHz and 2 110-2 170 MHz1)	Paired with BTX(2110 – 2170 MHz) [FIXED (HAPS) (base stations for IMT)] ~~Resolution 221 (Rev. WRC-07) (International Mobile Telecommunications (IMT))~~ Res. 212 (Rev. WRC-23) Res. 223 (Rev. WRC-23) Resolution 221 (Rev.WRC-23)

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
2 010-2 025 MHz FIXED MOBILE 5.388A ~~5.388B~~ 5.388	**2 010-2 025 MHz** FIXED MOBILE 5.388A NF9 5.388	IMT (2010 – 2025 MHz) HIBS (1 710-1 980, 2 010-2 025 MHz and 2 110-2 170 MHz)	[FIXED (HAPS) (base stations for IMT)] IMT TDD applications Recommendation ITU-R M.1036 - 7 Resolution 221 (Rev. WRC-07) (International Mobile Telecommunications (IMT)) Res. 212 (Rev. WRC-23) Res. 223 (Rev. WRC-23) Res. 221 (Rev. WRC-23) Resolution 221 (Rev.WRC-23)
2 110-2 120 MHz FIXED MOBILE 5.388A~~5.388B~~	**2 110-2 120 MHz** FIXED MOBILE 5.388A NF9	IMT2100 BTX (2110 – 2170 MHz)	FIXED (HAPS) (base stations for IMT)] Paired with MTX(1920 – 1980 MHz) Recommendation ITU-R M.1036-7 ~~[Resolution 221 (Rev. WRC-07)~~ ~~(International Mobile Telecommunications (IMT))~~ Res. 212 (Rev. WRC-23) Res. 223 (Rev. WRC-23)

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
SPACE RESEARCH (deep space) (Earth-to-space) 5.388	SPACE RESEARCH (deep space) (Earth-to-space) 5.388 ~~5.388B~~	HIBS (1 710-1 980, 2 010-2 025 MHz and 2 110-2 170 MHz1)	Resolution 221 (Rev.WRC-23) RFSAP to be developed for this band
2 120-2 160 MHz FIXED MOBILE 5.388A ~~5.388B~~	**2 120-2 160 MHz** FIXED MOBILE 5.388A NF9	IMT-2100 BTX (2110 – 2170 MHz)	[FIXED (HAPS) (base stations for IMT)] Paired with MTX(1920 – 1980 MHz) Recommendation ITU-R M.1036-7 ~~Resolution 221 (Rev. WRC-07) (International Mobile Telecommunications (IMT))~~ Res. 212 (Rev. WRC-23) Res. 223 (Rev. WRC-23) Resolution 221 (Rev.WRC-23) RFSAP to be developed for this band

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
5.388	5.388 ~~5.388B~~	HIBS (1 710-1 980, 2 010-2 025 MHz and 2 110-2 170 MHz1)	
2 160-2 170 MHz FIXED MOBILE 5.388A ~~5.388B~~ 5.388	**2 160-2 170 MHz** FIXED MOBILE 5.388A NF9 5.388 ~~5.388B~~	IMT2100 BTX (2110 – 2170 MHz) HIBS (1 710-1 980, 2 010-2 025 MHz and 2 110-2 170 MHz1)	[FIXED (HAPS) (base stations for IMT)] Paired with MTX(1920 – 1980 MHz) Recommendation ITU-R M.1036- 7 ~~Resolution 221 (Rev. WRC-07) (International Mobile Telecommunications (IMT))~~ Res. 212 (Rev. WRC-23) Res. 223 (Rev. WRC-23) Resolution 221 (Rev.WRC-23) RFSAP to be developed for this band

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
2 300-2 450 MHz FIXED MOBILE 5.384A	**2 300-2 450 MHz** FIXED MOBILE 5.384A NF9	 FAR147 IMT2300 TDD (2300 – 2400 MHz) WLAN, FDDA and model ctrl. (2400 – 2483.5 MHz) Non-Specific SRDs and low power video surveillance (2400 – 2483.5 MHz) RFID (2 400 – 2 483.5 MHz)	RFSAP (GG50657, Notice No.4824 of 2024) ~~International Mobile Telecommunication Roadmap (GG No.42829 Notice 600 of 2019) as amended~~. Resolution 223 (Rev. WRC-23) Common international SRD band; see ITU-R Rec. SM.1896 latest version (above 2400 MHz) ~~Radio Frequency Spectrum Assignment Plan (GG N. 38640) as amended 30 March 2015~~. Radio Frequency Spectrum Regulations as amended (Annex B) (GG. No. 38641, Notice 279, 30 March 2015). ~~(Notice No. 279) of 30 March 2015~~. GG No. 48643 (Notice 1822) of 23 May 2023 Recommendation ITU-R M.1036- 7

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
		ISM applications (2400 2500 – ~~2483.5~~ MHz) Radiodetermination Applications for Material Sensing	(International Mobile Telecommunications (IMT)) ~~Radio Frequency Spectrum Assignment Plan to be amended to incorporate capabilities and requirements for IMT2020.~~ Final Frequency Migration Plan 2019 (GG No.42337 Notice 36 of 2019) Draft Frequency Migration Plan (GG 50389, Notice 4559 of 24 March 2024)
Amateur Radiolocation 5.150 5.282 5.395	Amateur Radiolocation Amateur-satellite 5.150 5.282 ~~5.395~~	Amateur-satellite (2400 – 2450 MHz)	

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
2 500-2 520 MHz FIXED 5.410 MOBILE except aeronautical mobile 5.384A 5.409A 5.412	**2 500-2 520 MHz** MOBILE except aeronautical mobile 5.384A 5.409A NF9	IMT2600 ~~MTX~~ (2500 – ~~2570~~ 2690 MHz) HIBS (2500-2690 MHz)	~~Paired with 2620 – 2690 MHz~~ ~~International Mobile Telecommunication Roadmap (GG No.42829 Notice 600 of 2019)~~. Radio Frequency Spectrum Assignment Plan on 22 May 2020 (GG 43341, Notice 285 of 2020). Radio Frequency Spectrum Assignment Plan GG 43341 Notice 285 of 2020 Recommendation ITU-R M.1036-7 ~~(International Mobile Telecommunications (IMT))~~ ~~Radio Frequency Spectrum Assignment Plan to be amended to incorporate capabilities and requirements for IMT2020.~~ Resolution 223 (Rev. WRC-23) Resolution 218 (WRC-23)
2 520-2 655 MHz	**2 520-2 655 MHz**		

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
FIXED 5.410 MOBILE except aeronautical mobile 5.384A 5.409A	MOBILE except aeronautical mobile 5.384A 5.409A NF9	IMT2600 ~~MTX~~ (2500 – ~~2570~~ 2690 MHz) ~~IMT2600 TDD (2570 – 2620 MHz)~~ ~~IMT2600 BTX (2620 – 2690 MHz)~~ ~~IMT (2500-2690 MHz)~~ HIBS (2500-2690 MHz)	~~Paired with BTX (2620 – 2690 MHz)~~ ~~Paired with 2500 – 2570 MHz International Mobile Telecommunication Roadmap (GG No.42829 Notice 600 of 2019).~~ Radio Frequency Spectrum Assignment Plan on 22 May 2020 (GG 43341, Notice 285 of 2020). Recommendation ITU-R M.1036 - 7. ~~The band 2 500-2 690 MHz is also used for BFWA in some SADC countries.~~ ~~Radio Frequency Spectrum Assignment Plan GG 43341 Notice 285 of 202 (International Mobile Telecommunications (IMT))~~ ~~Radio Frequency Spectrum Assignment Plan to be amended to incorporate capabilities and requirements for IMT2020~~. Resolution 223 (Rev. WRC-23) Resolution 218 (WRC-23)

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
BROADCASTING-SATELLITE 5.413 5.416 5.339 5.412 5.418B 5.418C	Earth exploration-satellite (passive) Space research (passive) 5.339 5.418B 5.418C	Earth exploration-satellite (passive)(2 640-2 655 MHz) Space research (passive) (2 640-2 655 MHz)	
2 655-2 670 MHz FIXED 5.410 MOBILE except aeronautical mobile 5.384A 5.409A	**2 655-2 670 MHz** MOBILE except aeronautical mobile 5.384A 5.409A NF9	IMT2600 ~~MTX~~ (2500 – ~~2570~~ 2690 MHz) ~~IMT2600 MTX (2500-2570 MHz)~~	~~Paired with MTX (2500 – 2570 MHz)~~ Resolution 223 (Rev. WRC-23) International Mobile Telecommunication Roadmap (GG No.42829 Notice 600 of 2019). Radio Frequency Spectrum Assignment Plan on 22 May 2020 (GG 43341, Notice 285 of 2020).. Recommendation ITU-R M.1036-7 ~~Radio Frequency Spectrum Assignment Plan GG 43341 Notice 285 of 2020~~

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
BROADCASTING-SATELLITE 5.208B 5.413 5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412	Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149	HIBS (2500-2690 MHz) Radio Astronomy (2655 – 2690 MHz) (Continuum measurement and galactic studies)	(International Mobile Telecommunications (IMT)) Resolution 218 (WRC-23) ~~Radio Astronomy (2655 – 2690 MHz)~~. See section 5 for coordination with radio astronomy
2 670-2 690 MHz FIXED 5.410 MOBILE except aeronautical mobile 5.384A 5.409A Earth exploration-satellite (passive)	**2 670-2 690 MHz** MOBILE except aeronautical mobile 5.384A 5.409A NF9 Earth exploration-satellite (passive)	IMT2600 ~~MTX~~ (2500 – ~~2570~~ 2690 MHz) ~~IMT2600 MTX (2500-2570 MHz)~~	Radio Frequency Spectrum Assignment Plan on 22 May 2020 (GG 43341, Notice 285 of 2020) ~~Paired with 2500 – 2570 MHz International Mobile~~ Resolution 223 (Rev. WRC-23) ~~Telecommunication Roadmap (GG No.42829 Notice 600 of 2019)~~. . Recommendation ITU-R M.1036-7 ~~(International Mobile Telecommunications (IMT))~~

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
Radio astronomy Space research (passive) 5.149 5.412	Radio astronomy Space research (passive) 5.149	HIBS (2500-2690 MHz) Radio Astronomy (Continuum measurement and galactic studies)	~~Radio Frequency Spectrum Assignment Plan to be amended to incorporate capabilities and requirements for IMT2020~~. Resolution 218 (WRC-23) See section 5 for coordination with radio astronomy

14.9 3300 MHz

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
3 300-3 400 MHz RADIOLOCATION	**3 300-3 400 MHz** RADIOLOCATION MOBILE except aeronautical mobile NF9	Radio astronomy (CH Molecules) IMT (3300-3400 MHz) Res. 223 (Rev.WRC-15)	See section 5 for coordination with radio astronomy RFSAP (GG . 47788 Notice 2891 of 20 December 2022. Res. 223 (Rev.WRC-23) Recommendation ITU-R M.1036-~~6~~7

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5.149 5.429 5.429A 5.429B 5.430	5.149 5.429A 5.429B		~~(International Mobile Telecommunications (IMT)) Develop a RFSAP for the band~~

14.10 3400-3600MHz

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
3 400-3 600 MHz FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.430A Radiolocation 5.431	**3 400-3 600 MHz** FIXED MOBILE except aeronautical mobile 5.430A NF9 Radiolocation	~~BFWA~~ IMT3500 TDD (3400 – 3600 MHz)	~~The band 3400 -3600 MHz is also used for BFWA in some SADC countries~~ RFSAP (GG . 47763 Notice 2879 of 19 December 2022. ~~International Mobile Telecommunication (GG No.42829 Notice 600 of 2019). Radio Frequency Spectrum Assignment Plan (GG N. 38640) as amended 30 March 2015~~. Res. 223 (Rev.WRC-23) Recommendation ITU-R M.1036-~~6~~ 7 ~~(International Mobile Telecommunications (IMT))~~

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14.11 3600-3800MHz

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
3 600-~~4 200~~3 800 MHz	**3 600-3 800~~4 200~~ MHz**		
FIXED	FIXED NF14	Fixed links (4 GHz) (3600 – 4200 MHz) BFWA (3600 – 3800 MHz) C-band downlink (VSAT/SNG/PTP links)(3600 – 4200 MHz)	~~The sub-band 3 600-3 800 MHz could be used for BFWA where frequency sharing with FS PTP and/or FSS is feasible.~~
FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)		
~~Mobile~~MOBILE except aeronautical mobile 5.433B 5.434A 5.434B 5.435A	MOBILE except aeronautical mobile 5.434A 5.434B NF09	IMT (3600 – 3800 MHz)	The band 3 600-3 800 MHz shall be used for IMT noting ITU-R Recommendation 1036-7~~8.~~ The channelling arrangement for PTP links in this band is based on ITU-R Recommendation F.635 latest versionAnnex 1. ~~The sub-band~~ 3 600-4 200 MHz band is used for medium and high capacity PTP links and FSS. In the band 3 600-3 800 MHz, FS PTP and FSS applications will have to operate on coordinated basis. Operators are encouraged to apply for spectrum licenses including registering all C-Band Earth stations on the ICASA online database

			RFSAP to be developed for this band

14.12 4.9 GHz

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
4 800-4 990 MHz	**4 800-4 825 MHz**		
FIXED	FIXED NF14 NF15	Fixed links (4.8 GHz) (4400 – 5000 MHz) Government services Outside Broadcast Links	Recommendation ITU-R F.1099, Annex 1
MOBILE 5.440A 5.441A 5.441B 5.442	MOBILE 5.441B NF9 NF15	IMT4800 TDD (4800-4990 MHz) Electronic News Gathering	Res. 223 (Rev. WRC-23) Recommendation ITU-R M.1036-~~6~~ 7 ~~(International Mobile Telecommunications (IMT))~~ RFSAP to be developed for this band
Radio astronomy 5.443	Radio astronomy 5.443 ~~NF15~~	Radio astronomy (Observations of formaldehyde (H2CO) interstellar clouds)	See section 5 for coordination with radio astronomy
	4 825-4 835 MHz		
	FIXED NF14 NF15	Outside Broadcast Links Government services	

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
	MOBILE except aeronautical mobile 5.441B NF9 NF15	IMT4800 TDD (4800-4990 MHz) Electronic News Gathering	Res. 223 (Rev. WRC-23) Recommendation ITU-R M.1036- ~~6~~ 7 (International Mobile Telecommunications (IMT)) RFSAP to be developed for this band
	Radio astronomy 5.149	.Radio astronomy (Observations of formaldehyde (H2CO) interstellar clouds)	See section 5 for coordination with radio astronomy
	4 835-4 950 MHz FIXED NF14 NF15	Fixed links (4.8 GHz) (4400 – 5000 MHz) Government services Outside Broadcast Links	Recommendation ITU-R F.1099, Annex 1
	MOBILE 5.441B NF9 NF15	IMT4800 TDD (4800-4990 MHz) Electronic News Gathering	Res. 223 (Rev. WRC-23) Recommendation ITU-R M.1036- ~~6~~ 7 (International Mobile Telecommunications (IMT))

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
	Radio astronomy	Radio astronomy (Observations of formaldehyde (H2CO) interstellar clouds)	RFSAP to be developed See section 5 for coordination with radio astronomy
5.149 5.339 5.443	**4 950-4 990 MHz** FIXED NF14 NF15	Fixed links (4.8 GHz) (4400 – 5000 MHz) Government services Outside Broadcast Links	Recommendation ITU-R F.1099, Annex 1
	MOBILE except aeronautical mobile5.441B 5.442 NF9 NF15	Electronic News Gathering IMT4800 TDD (4800-4990 MHz)	Res. 223 (Rev. WRC-23) Recommendation ITU-R M.1036- ~~6~~ 7 (International Mobile Telecommunications (IMT)) RFSAP to be developed
	Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.339	Radio astronomy (Observations of formaldehyde (H2CO) interstellar clouds)	See section 5 for coordination with radio astronomy

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14.13 6 GHz

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
5 925-6 700 MHz FIXED 5.457 FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B MOBILE 5.457C ~~,~~ 5.457D ~~,~~ 5.457E ~~,~~ 5.457F ~~,~~	**5 925-6 425 MHz** FIXED ~~5.457~~ NF14 FIXED-SATELLITE (Earth-to-space) 5.457A ~~5.457B~~ MOBILE 5.149 5.440 5.458	Fixed links - Lower 6 GHz (5925-6425 MHz) BFWA Fixed-satellite uplinks (PTP/VSAT/SNG) (5850-6425 MHz) ESVs (5925 – 6425 MHz) Radio astronomy (observation of Methanol) WAS/RLAN (5925-6425 MHz)	Channelling plan for L6 GHz band in accordance with ITU-R Rec. F.383 latest version. ~~Earth Station onboard vessels (ESV) also allowed under FSS~~. Resolution 902 (WRC-03) Consideration may be made for future License exempt provided it is feasible for the protection of incumbent service. Radio Frequency Spectrum Regulations, 2015 – Annexure B as amended by GG No. 48643 (Notice 1822) of 23 May 2023 RFSAP to be developed for this band The development of Draft Regulations on Dynamic Spectrum Access and Opportunistic Spectrum Management in the Innovation Spectrum are in progress (GG 52415 No 6066 of 28 March 2025)

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
	6 425-6 429 MHz		Radio Frequency Spectrum Regulations, 2015 – Annexure B as amended by GG No. 48643 (Notice 1822) of 23 May 2023
	FIXED 5.457 NF14	Upper 6 GHz (6425-7110 MHz), BFWA	Channelling plan for U6 GHz band in accordance with ITU-R Rec. F.384 latest version.
	FIXED-SATELLITE (Earth-to-space)	Fixed-satellite uplinks (PTP/VSAT/SNG) (5850-6425 MHz) Radio astronomy (observation of Methanol)	~~Resolution 150 (WRC 12~~)
	MOBILE 5.457E	IMT ~~Identification~~ (6425 - 6429 MHz)	Resolution 220 (WRC 23) Channel plan to be developed within ITU-R Recommendation M1036 ~~8~~
		WAS/RLAN (6425-7125 MHz)	RFSAP to be developed for this band.
	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (6 427 MHz) (space-to-Earth) 5.149 5.440 5.458		
	6 429-6700 MHz	Upper 6 GHz (6425-7110 MHz), BFWA	

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
5.149 5.440 5.458	FIXED ~~5.457~~ MOBILE . 5.457E 5.458	Radio astronomy (observation of Methanol) IMT ~~Identification~~ (6429 -6700 MHz) WAS/RLAN (6425-7125 MHz)	Channelling plan for U6 GHz band in accordance with ITU-R Rec. F.384 latest version. ~~Resolution 150 (WRC 12)~~ Resolution 220 (WRC 23) Channel plan to be developed within ITU-R Recommendation M1036-7 ~~8~~ RFSAP to be developed for this band .
6 700-7 075 MHz FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE 5.457E 5.458 5.458A 5.458B	**6 700-7 075 MHz** FIXED NF14 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE 5.457E 5.458 5.458A 5.458B	Fixed Links (U6) (6425 – 7110 MHz) IMT ~~Identification~~ (6700 -7125 MHz) WAS/RLAN (6425-7125 MHz)	Channelling plan for U6 GHz band in accordance with ITU-R Rec. F.384 latest version. The band 6 725-7 025 MHz is part of the APP30B Plan (FSS Earth-to-space); refer to Annex B. Resolution 220 (WRC 23) ITU-R Recommendation M1036.-7 .~~8~~ RFSAP to be developed for this band
7 075-7 145 MHz	**7 075-7 145 MHz**		

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
FIXED MOBILE 5.457E 5.458 5.459	FIXED NF14 MOBILE 5.457E 5.458	Fixed Links (U6) (6425 – 7110 MHz) Fixed Links (L7) (7110 – 7425 MHz) IMT ~~Identification~~ (6700 -7125 MHz) WAS/RLAN (6425-7125 MHz)	Channelling plan for U6 band in accordance with ITU-R Rec. F.384 latest version. Channelling plan for L7 band is in accordance with ITU-R Rec. F.385 latest version Annex 3. Resolution 220 (WRC 23) ITU-R Recommendation M1036.-7 .~~8~~ RFSAP to be developed for this band

14.14 26 GHz (24.25-27.5GHz)

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
24.25-24.45 GHz FIXED	**24.25-24.45 GHz** FIXED NF14	Fixed links – 26 GHz (24.25-26.5 GHz)	Channelling plan for 26 GHz band in accordance with ITU-R Rec. F.748 Annex 1 latest version ~~Annex 1.~~ Temporary fixed links for ENG/OB Re~~solution~~ 242 (WRC-~~19~~ 23) (IMT)

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
MOBILE except aeronautical mobile 5.338A 5.532AB	MOBILE except aeronautical mobile 5.338A 5.532AB NF9	IMT TDD (24.25 – 27.5 GHz)	Recommendation ITU-R M.1036-~~6~~7 ~~currently being updated and revised within the ITU-R (International Mobile Telecommunications (IMT))~~ RFSAP to be developed for the band 24.25-27.5 GHz Res 750 (Rev.WRC-19) (passive protection)
24.45-24.65 GHz FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.338A 5.532AB	**24.45-24.65 GHz** FIXED NF14 INTER-SATELLITE MOBILE except aeronautical mobile 5.338A 5.532AB NF9	Fixed links – 26 GHz (24.5-26.5 GHz) BFWA (24.5-26.5 GHz) IMT TDD (24.25 – 27.5 GHz)	Channelling plan for 26 GHz band in accordance with ITU-R Rec. F.748 Annex 1 latest version ~~Annex 1.~~ Re~~solution~~ 242 (WRC-~~19~~ 23) (IMT) Recommendation ITU-R M.1036-6 currently being updated and revised within the ITU-R ~~(International Mobile Telecommunications (IMT))~~ RFSAP to be developed for the band 24.25-27.5 GHz Res 750 (Rev.WRC-19) (passive protection)

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
24.65-24.75 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.532B INTER-SATELLITE MOBILE except aeronautical mobile 5.338A 5.532AB	**24.65-24.75 GHz** FIXED NF14 FIXED-SATELLITE (Earth-to-space) 5.532B INTER-SATELLITE MOBILE except aeronautical mobile 5.338A 5.532AB NF9	Fixed links – 26 GHz (24.5-26.5 GHz) BFWA (24.5-26.5 GHz) IMT (24.25 – 27.5 GHz)	Channelling plan for 26 GHz band in accordance with ITU-R Rec. F.748 Annex 1 latest version ~~Annex 1.~~ Re~~solution~~ 242 (WRC-~~19~~ 23) (IMT) Recommendation ITU-R M.1036-6 currently being updated and revised within the ITU-R ~~(International Mobile Telecommunications (IMT))~~ RFSAP to be developed for the band 24.25-27.5 GHz Res 750 (Rev.WRC-19) (passive protection)
24.75-25.25 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.532B	**24.75-25.25 GHz** FIXED NF14 FIXED-SATELLITE (Earth-to-space) 5.532B	Fixed links - 26 GHz (24.5-26.5 GHz) BFWA (24.5-26.5 GHz)	Channelling plan for 26 GHz band in accordance with ITU-R Rec. F.748 Annex 1 latest version ~~Annex 1.~~ Re~~solution~~ 242 (WRC-~~19~~ 23) (IMT)

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
MOBILE except aeronautical mobile 5.338A 5.532AB	MOBILE except aeronautical mobile 5.338A 5.532AB NF9	IMT TDD (24.25 – 27.5 GHz)	Recommendation ITU-R M.1036-6 currently being updated and revised within the ITU-R (International Mobile Telecommunications (IMT)). RFSAP to be developed for the band 24.25-27.5 GHz Res 750 (Rev.WRC-19) (passive protection)
25.25-25.5 GHz FIXED 5.534A INTER-SATELLITE 5.536	**25.25-25.5 GHz** FIXED NF14 INTER-SATELLITE (Earth exploration-satellite applications) 5.536 INTER-SATELLITE (space research applications) 5.536 INTER-SATELLITE (transmissions of data originating from industrial and medical activities in space) MOBILE 5.338A 5.532AB NF9 Standard frequency and time signal-satellite (Earth-to-space)	Fixed Links (26 GHz) (24.5 – 26.5 GHz) BFWA (24.5-26.5 GHz	Channelling plan for 26 GHz band in accordance with ITU-R Rec. F.748 Annex 1 latest version Annex 1. Resolution 242 (WRC-19 23) (IMT) Recommendation ITU-R M.1036-6 currently being updated and revised within the ITU-R (International Mobile Telecommunications (IMT)). RFSAP to be developed for the band 24.25-27.5 GHz Res 750 (Rev.WRC-19) (passive protection)

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
MOBILE 5.338A 5.532AB Standard frequency and time signal-satellite (Earth-to-space)		IMT TDD (24.25 – 27.5 GHz)	
25.5-27 GHz EARTH EXPLORATION-SATELLITE (space-to Earth) 5.536B FIXED 5.534A INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB SPACE RESEARCH (space-to-Earth) 5.536C Standard frequency and time signal-satellite (Earth-to-space)	**25.5-27 GHz** EARTH EXPLORATION-SATELLITE (space-to Earth) 5.536B FIXED NF14 INTER-SATELLITE (Earth exploration-satellite applications) 5.536 INTER-SATELLITE (space research applications) 5.536 INTER-SATELLITE (transmissions of data originating from industrial and medical activities in space) MOBILE 5.338A 5.532AB NF9 SPACE RESEARCH (space-to-Earth) 5.536C	National Polar-Orbiting Operational Environment Satellite System (NPOESS) 25.5-27 GHz Fixed Links (26 GHz) (24.5 – 26.5 GHz) FWA (24.5-26.5 GHz IMT TDD (24.25 – 27.5 GHz)	Channelling plan for 26 GHz band in accordance with ITU-R Rec. F.748 latest version Annex 1 latest version ~~Annex 1.~~ Re~~solution~~ 242 (WRC-~~19~~ 23) (IMT) Rec~~ommendation~~ ITU-R M.1036-~~6 currently being updated and revised within the ITU-R (International Mobile Telecommunications (IMT))~~ RFSAP to be developed for the band 24.25-27.5 GHz Res 750 (Rev.WRC-19) (passive protection)

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
5.536A	Standard frequency and time signal-satellite (Earth-to-space) 5.536A		
27-27.5 GHz FIXED INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB	**27-27.5 GHz** FIXED INTER-SATELLITE (Earth exploration-satellite applications) 5.536 INTER-SATELLITE (space research applications) 5.536 INTER-SATELLITE (transmissions of data originating from industrial and medical activities in space) MOBILE 5.338A 5.532AB NF9	IMT TDD (24.25 – 27.5 GHz)	Rec~~ommendation~~ ITU-R M.1036 -~~6~~ latest version ~~currently being updated and revised within the ITU-R~~ ~~(International Mobile Telecommunications (IMT))~~ RFSAP for the band 24.25 - 27.5 GHz to be developed Res 750 (Rev.WRC-19) (passive protection)

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14.15 40 GHz (37-43.5GHz)

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
37-37.5 GHz FIXED MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to-Earth) 5.547	**37-37.5 GHz** FIXED NF14 MOBILE except aeronautical mobile 5.550B NF9 SPACE RESEARCH (space-to-Earth) 5.547	Fixed Links (38 GHz) (37.0 – 39.5 GHz) HDFS (37-40 GHz) (5.547) IMT TDD (37-43.5 GHz)	Res.~~olution~~ 243 (WRC-~~19~~ 23) ~~Recommendation~~ ITU-R M.1036-~~6~~ latest version ~~currently being updated and revised within the ITU-R~~ ~~(International Mobile Telecommunications~~ (IMT)) RFSAP for the frequency range 37 - 43.5 GHz to be developed. IMT deployment is subject to the publication of the RFSAP.
37.5-38 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.550C 5.550CA	**37.5-38 GHz** FIXED NF14 FIXED-SATELLITE (space-to-Earth) 5.550C 5.550CA	Fixed Links (38 GHz) (37.0 – 39.5 GHz) HDFS (37-40 GHz) (5.547)	~~The band 37-40 GHz is identified for HDFS;~~ Res.~~olution~~ 7~~5~~56 (Rev. WRC-12) applies. Res.~~olution~~ 770 (WRC-~~19~~ 23) (FSS) Res.~~olution~~ 243 (WRC-~~19~~ 23) (IMT)

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547	MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547	IMT TDD (37-43.5 GHz)	Channelling plan for 38 GHz band in accordance with ITU Rec. F.749 Annex 1. Recommendation ITU-R M.1036 6 latest version currently being updated and revised within the ITU-R recommends TDD only (International Mobile Telecommunications (IMT)) RFSAP for the frequency range 37 - 43.5 GHz to be developed. IMT deployment is subject to the publication of the RFSAP.
38-39.5 GHz FIXED 5.550D FIXED-SATELLITE (space-to-Earth) 5.550C	**38-39.5 GHz** FIXED 5.550D NF14 FIXED-SATELLITE (space-to-Earth) 5.550C	Fixed Links (38 GHz) (37.0 – 39.5 GHz) HDFS (37-40 GHz) (5.547) FIXED (HAPS) (38-39.5 GHz)	Channelling plan for 38 GHz band in accordance with ITU Rec. F.749 Annex 1. The band 37-40 GHz is identified for HDFS; Resolution 75 (Rev. WRC-12) applies. Resolution 770 (Rev. WRC-19 23) (FSS) Resolution 243 (WRC-19 23) (IMT) Resolution 168 (Rev. WRC-23) (HAPS)

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
MOBILE 5.550B Earth exploration-satellite (space-to-Earth) 5.547	MOBILE 5.550B NF9 Earth exploration-satellite (space-to-Earth) 5.547	IMT TDD (37-43.5 GHz)	Rec~~ommendation~~ ITU-R M.1036-~~6~~ latest version ~~currently being updated and revised within the ITU-R~~ recommends TDD only ~~(International Mobile Telecommunications~~ (IMT)) RFSAP for the frequency range 37 - 43.5 GHz to be developed. IMT and HAPS deployment is subject to the publication of the RFSAP.
39.5-40 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C	**39.5-40 GHz** FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C	HDFS (37-40 GHz) (5.547) ~~HIGH DENSITY APPLICATIONS IN THE~~ High-density applications in the FSS (HDFSS) (space-to-Earth) (39.5-40.5 GHz)	Res.~~olution~~ 770 (WRC-~~19~~ 23) (FSS) Res.~~olution~~ 243 (WRC-~~19~~ 23) (IMT) ~~The band 39.5-40 GHz is identified for HDFSS~~; Res.~~olution~~ 143 (Rev. WRC-19) ~~applies~~ (HDFSS)

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
MOBILE 5.550B MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547 5.550E	MOBILE 5.550B NF9 MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547 5.550E	IMT TDD (37-43.5 GHz) Fixed links	~~Recommendation~~ ITU-R M.1036-~~6~~ 7 ~~currently being updated and revised within the ITU-R~~ recommends TDD only ~~International Mobile Telecommunications~~ (IMT)~~)~~ RFSAP for the frequency range 37 - 43.5 GHz to be developed. IMT deployment is subject to the publication of the RFSAP.
40-40.5 GHz EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C	**40-40.5 GHz** EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C	Government Services ~~HIGH DENSITY APPLICATIONS IN THE~~ High-density applications in the FSS (HDFSS) (space-to-Earth) (39.5-40.5 GHz)	~~The band 40-40.5 GHz is identified for HDFSS; Resolution 75 (Rev. WRC-12) applies..~~ Res. 143 (Rev.WRC-19) (HDFSS)

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
MOBILE 5.550B MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth) 5.550E	MOBILE 5.550B NF9 MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth) 5.550E	IMT (TDD) (37-43.5 GHz)	Res.~~olution~~ 770 (WRC-~~19~~ 23) (FSS) Res.~~olution~~ 243 (WRC-~~19~~ 23) (IMT) ~~Recommendation~~ ITU-R M.1036-~~6~~ 7 ~~currently being updated and revised within the ITU-R (International Mobile Telecommunications~~ (IMT)) RFSAP for the frequency range 37 - 43.5 GHz to be developed. IMT deployment is subject to the publication of the RFSAP.
40.5-41 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.550C LAND MOBILE 5.550B	**40.5-41 GHz** FIXED NF14 FIXED-SATELLITE (space-to-Earth) 5.550C LAND MOBILE 5.550B	Fixed links (42 GHz) (40.5 – 43.5 GHz) HDFS (40.5-43.5 GHz) (5.547) IMT (TDD) (37-43.5 GHz)	ITU-R F.2005 Annex 1 (channel plan) Res.~~olution~~ 770 (WRC-19) (NGSO FSS) ~~BFWA or MWS (40.5-43.5 GHz)~~.

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
BROADCASTING BROADCASTING-SATELLITE ~~LAND MOBILE 5.550B~~ Aeronautical mobile Maritime mobile 5.547	BROADCASTING BROADCASTING-SATELLITE ~~LAND MOBILE 5.550B~~ Aeronautical mobile Maritime mobile 5.547		~~The band 40.5-43.5 GHz is identified for HDFS;~~ ~~Resolution 75 (Rev. WRC-12) applies..~~ Res.~~olution~~ 243 (WRC-19) (IMT) ~~Recommendation~~ ITU-R M.1036-~~6~~ 7 ~~currently being updated and revised within the ITU-R~~ recommends TDD only (International Mobile Telecommunications (IMT)) RFSAP to be developed
41-42.5 GHz FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C LAND MOBILE 5.550B	**41-42.5 GHz** FIXED NF14 FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C LAND MOBILE 5.550B	Fixed links (42 GHz) (40.5 – 43.5 GHz) HDFS (40.5-43.5 GHz) (5.547) IMT (TDD) (37-43.5 GHz)	ITU-R F.2005 Annex 1 (channel plan) Res.~~olution~~ 770 (WRC-19) (NGSO FSS) Res.~~olution~~ 243 (WRC-19) (IMT) ~~BFWA or MWS (40.5-43.5 GHz)~~.

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
BROADCASTING BROADCASTING-SATELLITE ~~LAND MOBILE 5.550B~~ Aeronautical mobile Maritime mobile 5.547 5.551F 5.551H 5.551I	BROADCASTING BROADCASTING-SATELLITE ~~LAND MOBILE 5.550B~~ Aeronautical mobile Maritime mobile 5.547 5.551H 5.551I		~~The band 40.5-43.5 GHz is identified for HDFS; Resolution 75 (Rev. WRC-12) applie~~s. ~~Recommendation~~ ITU-R M.1036-~~6~~ 7 ~~currently being updated and revised within the ITU-R (International Mobile Telecommunications (IMT))~~ RFSAP to be developed
42.5-43.5 GHz FIXED	**42.5-43.5 GHz** FIXED NF14	Fixed links (42 GHz) (40.5 – 43.5 GHz) HDFS (40.5-43.5 GHz) (5.547)	~~BFWA or MWS (40.5-43.5 GHz).~~ ITU-R F.2005 Annex 1 (channel plan) ~~The band 40.5-43.5 GHz is identified for HDFS;Resolution 75 (Rev. WRC-12) applies.~~

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE except aeronautical mobile 5.550B RADIO ASTRONOMY 5.149 5.547	FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE except aeronautical mobile 5.550B RADIO ASTRONOMY 5.149 5.547	IMT (TDD) (37-43.5 GHz) ~~Government Services (43.5-45.5 GHz)~~ Radio astronomy (Observation of silicon monoxide)	Res~~olution~~ **243 (WRC-19)** (IMT) ~~Recommendation~~ ITU-R M.1036-~~67 currently being updated and revised within the ITU-R~~ ~~(International Mobile Telecommunications (IMT))~~ RFSAP to be developed See section 5 for coordination with radio astronomy

14.16 46GHz (45.5-47GHz)

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
43.5-47 GHz MOBILE 5.553 5.553A MOBILE-SATELLITE RADIONAVIGATION	**43.5-45.5 GHz** **MOBILE 5.553 5.553A** MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE	Government Services (43.5-45.5 GHz)	

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
RADIONAVIGATION-SATELLITE 5.554	5.554		
	45.5-47 GHz **MOBILE 5.553** 5.553A MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	IMT (TDD) (45.5-47 GHz)	Res.~~olution~~ 244 (WRC-19) (IMT) ~~Recommendation~~ ITU-R M.1036-~~76~~ ~~currently being updated and revised within the ITU-R~~ (International Mobile Telecommunications (IMT)) RFSAP to be developed

14.17 48 GHz (47.2-48.2GHz)

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
47.2-47.5 GHz FIXED	**47.2-47.5 GHz** FIXED	~~[~~FIXED FS (HAPS)~~]~~	Res. 122 (Rev.WRC-19) ITU-R F.1500 (HAPS)

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ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.553B 5.552A	FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.553B 5.552A	IMT	Res.~~olution~~ 770 (WRC-19) for non-GSO in 47.2-50.2 GHz (E-to-s) non-GSO/GSO sharing: Res. 770 (Rev.WRC-23) and Res. 771 (WRC-19) apply for non-GSO FSS in 47.2–50.2 GHz Res.~~olution~~ 243 (WRC-19) (IMT) ~~Recommendation~~ ITU-R M.1036-~~76 currently being updated and revised within the ITU-R~~ (International Mobile Telecommunications (IMT)) RFSAP to be developed
47.5-47.9 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A MOBILE 5.553B	**47.5-47.9 GHz** FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (GSO) (space-to-Earth) 5.516B 5.554A MOBILE 5.553B	~~The band 47.5-47.9 GHz is identified for HDFSS; Res.143 applies~~. ~~HIGH DENSITY APPLICATIONS IN THE~~ High-density applications in the FSS (HDFSS) (space-to-Earth)] IMT (TDD) 47.2-48.2 GHz	Res.~~olution~~ 770 (WRC-19) for non-GSO in 47.2-50.2 GHz (E-to-s) Res. 143 (Rev.WRC-19) (HDFSS s-to-E) ITU-R S.2461 (2019) (HDFSS spectrum needs; 47.5–47.9 GHz s-to-E, GSO-only) Res.~~olution~~ 243 (WRC-19) (IMT)

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
			~~Recommendation~~ ITU-R M.1036-~~7~~6 ~~currently being updated and revised within the ITU-R~~ (International Mobile Telecommunications (IMT)) RFSAP to be developed
47.9-48.2 GHz FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.553B 5.552A	**47.9-48.2 GHz** FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.553B 5.552A	~~[FIXED~~ FS (HAPS)~~]~~ FSS uplinks (E-to-s), especially BSS feeder uplinks (within 47.2–49.2 GHz per 5.552). IMT (TDD) (47.5-48.5 GHz)	ITU-R F.1500 (HAPS) Res.~~olution~~ 770 (WRC-19) for non-GSO FSS in 47.2-50.2 GHz (E-to-s) Res.~~olution~~ 243 (WRC-19) (IMT) ~~Recommendation~~ ITU-R M.1036-~~7~~6 ~~currently being updated and revised within the ITU-R~~ (International Mobile Telecommunications (IMT)) RFSAP for the band 47.5-48.5 GHz to be developed

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14.18 66-71 GHz (E-Band)

66-71 GHz INTER-SATELLITE MOBILE 5.553 5.558 5.559AA	**66-71 GHz** INTER-SATELLITE MOBILE 5.553 5.558 5.559AA	IMT (TDD) (66-71 GHz) Multiple GIGABIT wireless systems (MGWS) WAS/RLAN	Res~~olution~~ 241 (WRC~~-19~~ 23) ~~Recommendation~~ ITU-R M.1036-~~76~~ ~~latest version currently being updated revied within the ITU-R (candidate band for International Mobile Telecommunications (IMT) in line with Res. 241 (WRC-19 23))~~ RFSAP to be developed for this band . ~~Amendment to the~~ Radio Frequency Spectrum Regulations 2015, ~~GG 40436 (Notice 781 of 2016)~~ (GG. No. 38641, Notice 279 of 30 March 2015), Annex B as amended by GG 48643 Notice 1822 of 23 May 2023.
MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554		

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