



# Decision 1 of 2022 Spectrum Identified for IMT 2020 (5G) in Vanuatu

## 1. Background

The mobile industry has demonstrated its ability to connect and transform society through its 2G, 3G and 4G networks over the last 30 years. 5G will build on these significant changes. There has been much discussion around 5G and its impact on data networks. 5G will deliver a platform that enhances existing services and enables new business models. It is expected that 5G will increase mobile connectivity and support new services and produce substantial innovations. It will be central to future economic growth, employment, education, transport, retail, health, agriculture and more. 5G is the next generation of the global broadband multimedia international mobile telecommunication systems, known as IMT 2020 and is the next step in mobile broadband wireless communications. Compared with 4G, 5G offers a new network architecture to help significantly boost overall performance. 5G Networks will provide an enhanced broadband experience with speeds of over 10 Gbps, latency of less than 4 milliseconds, and ultra-high-dense connections. With these remarkable features, 5G is anticipated to significantly improve data speed and capacity as such could provide opportunities for new emerging markets.

The 'Mid' and 'High' frequency bands are bands that were identified in the ITU World Radiocommunication Conference for 2015 (WRC -15) and 2019 (WRC -19) for deployment of 5G Mobile Telecommunication Service. These are the frequency bands on which the service providers have been consulted and provided their comments. Telecommunication Radiocommunication Broadcasting Regulator (TRBR) has considered their inputs and feedbacks and have included them in this Decision.

In Vanuatu, connecting rural communities continues to remain as one of the biggest challenges. Most of the rural areas in Vanuatu are covered by 2G or 3G mobile service while 4G covers the major towns. Most of the Low-Band spectrum has been fully assigned to 2G, 3G or 4G, hence the Mid-Band and the High-Band are the only suitable bands for 5G trials. Initial deployment at this stage permits TRBR to anticipate that 5G initial deployment in the Mid-Band will gradually extend into High-Bands to address the increasing need for capacity. TRBR considers that making spectrum available in a timely manner is key to enabling progress in technology development and enabling economy growth. Avoidable short- and mid-term capacity shortages will be avoided as a result. Licensing considerations will be a factor to take into account when dealing with mmWave. Industry consultation and collaboration will be required to ensure a that suitable Licensing Regime is formulated and accepted by all parties to ensure growth and development of 5G with little or no interference issues.

The Office of the Telecommunications, Radiocommunications and Broadcasting Regulator (TRBR) published a consultation document on 12<sup>th</sup> May 2022 inviting public comments on the Spectrum Identified for IMT 2020 (5G) in Vanuatu. During the consultation period, the TRBR received comments and feedback from service providers and interested persons, which have assisted the TRBR in finalizing this Decision.

## 2. Legal Basis

The Telecommunications, Radiocommunications and Broadcasting Regulator (TRBR) is mandated by the Telecommunications Radiocommunications and Broadcasting Regulation Act no 30 of 2009 as amended (the Act) to regulate the telecommunications radiocommunications and broadcasting operations, including management of the radio spectrum to promote national, social and economic development.

TRBR' is mandated to develop Radio spectrum plans including frequency band plans in Vanuatu, taking into account global and regional harmonization. All band plans are developed in accordance with recommendations developed by the Radiocommunications sector of the International Telecommunications Union (ITU-R).

The primary legislation and rationale for the establishment of the spectrum fees is the Act. Paragraph 7(2) of the Act applies and permits TRBR to *“allocate, assign and manage the radio spectrum”*. Further powers are given under paragraph 7(4)(a)(b)(c) of the Act to:

- (a) Prescribing standard terms in various licenses and exemptions; or*
- (b) Prescribing procedures, forms, and fees in respect of any license or exception or anything which might be done by any person under this Act, except the provision of reasons for any decision by the Regulator; or*
- (c) Providing for the methodology by which any calculation required to be made under this Act is to be made.*



### 3. Decision

After assessing all the comments and feedback received from the Services Providers and in the exercise of the Regulator's power and duties under the Act, the Telecommunications, Radiocommunications and Broadcasting Regulator ("The Regulator") hereby make the following decisions.

1. Spectrum harmonization continues to be important for the mobile industry in the 5G era. Globally harmonized spectrum enables economies of scale and facilitates cross-border coordination and roaming for end users: a critical factor for initial deployment of 5G. Vanuatu will adopt 3GPP specifications for initial 5G bands and associated band combinations for 5G deployment.
2. The Regulator shall allocate the spectrum bands listed under part A for use by valid Licensees or Service Providers or potential Service Providers to provide Telecommunications services to the people of Vanuatu.

#### A. Frequency Band Identified for IMT 2020 and Approved Band Planning Arrangements.

- I. The TRBR will adopt N41 TDD band planning for the Mid-Frequency Bands 2 600 MHz (2 500 – 2 690 MHz).
  - II. The TRBR will adopt N78 TDD band planning for the Mid-Frequency Band 3.5 GHz (3 400 – 3 600 MHz).
  - III. The TRBR will adopt N258 TDD band planning for the High-Frequency Bands (mmWave) 26 GHz (37 – 43.5 GHz).
  - IV. The TRBR will adopt N259/N260 TDD band planning for the High-Frequency Bands (mmWave) 40 GHz (24.25 – 27.5 GHz).
  - V. The TRBR will adopt TDD band planning for the High-Frequency Bands (mmWave) 66 – 71 GHz.
3. The Regulator may assign these spectrum bands to licensees or to service providers, by means of direct assignment or by spectrum auction or by competitive tender, in such manner as the Regulator considers to be fair and reasonable in the circumstances



4. In the event the Regulator decides to assign spectrum in these specified band (schedule 1), the licensees, Service Providers or potential Service Providers will be subjected to Radio Spectrum Fees as prescribe by the Regulator. The TRBR has formulated the spectrum fees that applies to specific bands detailed in schedule 2 of this Decision. These fees are the fees that shall apply in the case of direct assignment. In the case of assignment by auction r competitive tender, the Regulator shall set a reserve price which shall not be lower than, but may be higher than, the spectrum fees in schedule 2.
5. Assignment of Bands in the mmWave, will be subjected to further analyses and approval from the Regulator.

Made this 30<sup>th</sup> of November 2022



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## Schedule 1: Band Planning for IMT 2020 (5G) in Vanuatu.

The TRBR will adopt for the Mid-Frequency Bands:

### A. N41 TDD Band Planning

Frequency Band	3GPP Band Number	Frequency Range	Frequency Identified for 5G in Vanuatu	Duplex Mode
FR 1	N41	2496 MHz	2690 MHz	TDD

### B. N78 TDD Band Planning

Frequency Band	3GPP Band Number	Frequency Range	Duplex Mode
FR 1 (sub-6 GHz)	n78	3.4 -3.6 GHz	TDD

The TRBR will adopt for the High-Frequency Bands (mmWave):

### C. N258 TDD band planning.

Frequency Band	3GPP Band Number	Frequency Range	Frequency Identified for 5G in Vanuatu	Duplex Mode
FR 2 (above-6 GHz)	n258	24.25-27.5 GHz	25.25-27.5 GHz	TDD

### D. N259/N260 TDD band planning.

Frequency Band	3GPP Band Number	Frequency Range	Duplex Mode	Comments
FR 2 (above-6 GHz)	n259/n260	37-43.5 GHz	TDD	Future 5G use

### E. TDD Band Planning

Frequency Band	3GPP Band Number	Frequency Range	Duplex Mode	Duplex Mode
FR 2 (above-6 GHz)	N/A	66-71 GHz	TDD	3GPP standard yet to be developed



## Schedule 2: Fee Schedule for Bands Identified for IMT 2020 (5G) in Vanuatu.

The IMT 2020 (5G) spectrum identified in this paper is categorized as high value bands for Vanuatu, therefore attract spectrum license fees.

TRBR believes that MNOs who are more active in rolling out quality network will be the preferred choice for allocating frequencies for important rollout but advice against frequency hoarding which is considered anti-competitive.

<b>Band</b>	<b>Annual Fee (Vatu per MHz)</b>
<b>Mid Frequency Band</b>	
2 600 MHz (2 500 – 2 690 MHz)	90,000 VT
3.5 GHz (3 400 – 3 600 MHz)	90,000 VT
<b>High-Frequency Bands (mmWave)</b>	
26 GHz (24.25 – 27.5 GHz)	90,000 VT
40 GHz (37 – 43.5 GHz)	90,000 VT
66 – 71 GHz	90,000 VT

