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6th April 2018

SUBJECT: Consultation on the Release of 2100Mhz Spectrum for International Mobile Telephony

The Telecommunication and Radiocommunication Regulator (TRR) under Section 7 of the Telecommunications and Radiocommunication Regulation Act No. 30 of 2009 (the Act) has the power to regulate telecommunications and radiocommunications including management of radio frequency spectrum (spectrum) in order to promote national social and economic development. Specifically Paragraph 7(2)(e) of the Act applies and permits TRR to "allocate, assign and manage the radio spectrum".

The TRR has recently been approached by operators for further assignments of spectrum in a specific range to support the increasing use of mobile telephony and data services. Access to reliable high capacity mobile telephony services is a recognised economic enabler and the existing spectrum bands allocated to International Mobile telephony (IMT) in Vanuatu have now been exhausted. As a consequence the TRR has investigated and proposes to plan and release the 2100Mhz spectrum band (1920 MHz to 2170 MHz) for IMT applications in Vanuatu. This information letter sets out the main options for planning this band, and seeks input from operators as to which of the options best meets their needs and the needs of Vanuatu.

Spectrum Band Planning

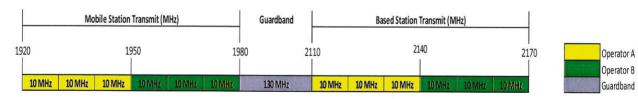
TRR research was conducted against the background of increasingly widespread use of the 2100 MHz band for IMT applications around the world and across the Asia Pacific region. Where the band has been adopted and allocated there have been different band plans adopted. Based on research done, the most common band planning methodology is Frequency Division Duplex (FDD) however there are a number of Time Division Duplex (TDD) implementations. Within the Pacific Islands only Fiji has implemented the 2100Mhz spectrum utilising the TDD band plan. The following table provides a brief overview of the various band plans used internationally.

¹ 700Mhz, 900Mhz, 1800Mhz and 2500Mhz

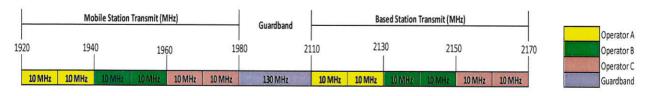
Country	Band Plan
Australia	Combination (FDD/TDD)
New Zealand	TDD
Fiji	TDD
Samoa	Undecided
Tonga	Undecided
PNG	Undecided
Brunei	FDD
India	FDD
Malaysia	Combination (FDD/TDD)
Nepal	FDD
Singapore	FDD
Sri Lanka	FDD
Taiwan	FDD

The TRR has had initial discussions with the two (2) main operators in Vanuatu and both operators have indicated a preference for the FDD band planning to be used in Vanuatu. Given that this is the initially preferred methodology and given there is likely to be no more than three (3) possible purchasers of spectrum in the immediate future, the 2100Mhz band plan may be structured in either of the two following methods:

1 Two Operators: FDD 3 X 10Mhz Pairs



2 Three Operators: FDD 2 x 10Mhz Pairs



Either methodology will provide all operators with the maximum possible frequency allocation. In order to achieve this no guard band between allocations has been defined and the TRR looks to self-regulation on frequency interference between each of the operators.

It should also be noted that as part of the original licence allocated to Telecom Vanuatu Limited (TVL) in 2009 by the then Minister responsible for Telecommunications, TVL were assigned a portion of this spectrum originally for fixed services. TVL have released this service to allow for the spectrum to be reallocated to IMT services, but retain the rights over the spectrum assigned as part of the original licence assignment. This has been taken into consideration by TRR as part of the band planning above.

TRR drew upon the principles set out in the <u>TRR Spectrum Management Principles</u> and <u>Spectrum Planning Allocation and Assignment Practices</u> documents in considering this band plan.

Spectrum Licence Fees

Decision 1 of 2016 Radio Spectrum Fees for the Republic of Vanuatu set fees for various spectrum ranges in use by operators at that time. It did not consider future spectrum use such as the 2100Mhz band as at that time no operator had shown interest in that band for IMT services in Vanuatu. In consideration of this paragraph 7(4)(b)(c) of the Act gives TRR powers for "proscribing procedures, forms or fees in respect of any licence" and for "providing for the methodology by which any calculation required to be made under this Act is made". TRR utilised the methodology that was presented as part of the Spectrum Fees Consultation undertaken with the industry in 2016.

Based on that consultation, existing spectrum fees and considering other factors contributing to telecommunications development in Vanuatu, TRR is setting a Spectrum Licence fee for the 2100Mhz band at VT27, 000 per megahertz per annum. TRR reserves the right to proceed to an Expression Of Interest (EOI) if demand for spectrum outstrips supply.

Questions Requiring Operators' Responses

In order to conclude the TRR deliberations and to be able to release this spectrum to operators for use in a timely manner, the TRR is seeking your response to the following questions;

- 1. Do you have any objection to allocating the 2100Mhz spectrum in Vanuatu to IMT services?
- 2. Do you have any objections to the use of FDD as the band planning methodology for the 2100Mhz band
- 3. Do you have any objections to the proposed spectrum allotments within the band plan identified
- 4. Do you have any objections to the proposition of self-regulation of interference due to the removal of guard bands between assignments to maximise spectrum allocations.
 - i. If YES, are you prepared to operate with reduced allocations?
 - ii. If NO, please explain how you would manage interference.
- 5. Do you intend to procure spectrum within this band plan and how much do you intend to procure?

TRR would appreciate your comments within 10 working days (20 April 2018) of the date of this letter in order to proceed with allocation and assignment of this spectrum. Please don't hesitate to contact TRR for further clarification and we look forward to your views.

Yours Faithfully,

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Telecommunications and Badiocommunication Regulator
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