TRR
Telecommunications &
Radiocommunications
Regulator

PO Box 3547
Port Vila
Vanuatu
t: +678 27621
e: enquiries@trr.vu

A Consultation Paper on
Proposed New Radio Apparatus Licence Fees and Procedures

INVITING PUBLIC COMMENT AND INPUT

20/08/2014

TABLE OF CONTENTS

CONSULTATION FEEDBACK INFORMATION

- TRR welcomes and invites comments and feedback to this Consultation document from all interested parties.
- We would appreciate your provision of information to be clear by quoting the corresponding main sections and sub sections when providing your comments.
- More general comments on the Consultation document should be indicated accordingly.
- In the interests of transparency, TRR will make public all or parts of any submissions made in response to this Consultation Document unless there is a specific request to treat all or part of a response in confidence. If no such request is made, TRR will assume that the response is not intended to be confidential. TRR will evaluate requests for confidentiality according to relevant legal principles.
- Respondents are required to clearly mark any information included in their submission that they consider confidential. They shall provide reasons why that information should be treated as such. Where information claimed to be confidential is included in a submission, respondents are required to provide both a confidential and a non-confidential version of their submission. TRR will determine, whether the information claimed to be confidential is to be treated as such, and, if so, will not publish that information. In respect of the information that is determined to be non-confidential, TRR may publish or refrain from publishing such information at its sole discretion.
- If you have specific questions, please use Section 7 to provide us with your queries.
- TRR will accept comments in English, French or Bislama.
- If comments are submitted in printed format, they must be submitted on A4 paper accompanied, wherever possible, by a disk containing the comments, in electronic format.
- Comments on this Consultation document should be provided to TRR via the following means:
  - Email address Consultation@trr.vu
  - Faxed to (678) 24470
  - Posted or hand delivered to:

    Public Input – Proposed New Radio Apparatus Licence Fees and Procedures
    Telecommunications and Radiocommunications Regulator
    P O Box 3547, Port Vila, Vanuatu
- The deadline for public Comments is **4pm, 18 September 2014.**
- For any phone enquiries regarding this Consultation document, please call the following numbers:

- (678) 27621 or (678) 27487

- All comments will be reviewed by TRR's established industry Advisory Working Groups (AWG), as appropriate. If TRR has not established an AWG, TRR only will review the comments. TRR will consider every comment submitted when finalizing its report or decision. For transparency, a record of every comment received will be made available for public information, unless comments are labelled 'In Confidence' (see also dot points 4 and 5 above).

- For more information about TRR's Consultation Guidelines, please visit the following website **http://www.trr.vu/index.php/en/public-register/guidelines/consultation-guideline**

- You are welcome to visit our website http://www.trr.vu for more details on the latest developments in the telecommunication services industry and other related matters.

INTRODUCTION

- The Telecommunications and Radiocommunications Regulator (TRR) is responsible under section 7 (2) (e) of the Telecommunications and Radiocommunications Regulations Act No. 30 of 2009 ("the Act" to "allocate, assign and manage the radio spectrum".
- Section 7(4) grants to TRR powers in relation to "prescribing standard terms in various licences and exemptions", and "prescribing procedures, forms and fees in respect of any licence". Further, the Act gives TRR powers in relation to "providing for the methodology by which any calculation required to be made under this Act is to be made". Section 12 (2) of the Act provides that radiocommunications devices are not to be operated in Vanuatu without a licence or exception. Also, the Radio Apparatus Licence and Spectrum Licence (Fees) Regulation Order No. 153 of 2012 states that persons operating radiocommunications equipment must have a radio apparatus licence and pay the prescribed fee for the licence (Section 3).
- This public Consultation document addresses the methodology for the setting of radio apparatus licence fees, and proposes a new set of fees to apply to these licence applications and renewals.
- Prior to the establishment of TRR in February 2008, radio apparatus licence fees (known then as 'Radio Licence Fees') were set and collected by Telecom Vanuatu Limited (TVL). After February 2008 the management responsibilities for radio spectrum and radio apparatus management were transferred from TVL to TRR.
- In its 'Spectrum Planning, Allocation and Assignment Practices' document published in December 2011 (the Practices document), TRR set out its objective for radio spectrum management: "the overall goal of radio spectrum in Vanuatu is to create a predictable environment for current and future spectrum usage, which is in the public interest." In section 11, the document sets out the specific objectives for spectrum charges and fees. These objectives include:

  a) "Recover the cost of managing the radio spectrum where there is no congestion;
  b) Encourage the efficient use of the radio spectrum;
  d) Reflect the socio-economic or market value of radio spectrum where such spectrum can be shown to be congested or scarce."

- TRR conducted an earlier Consultation on this issue, in May 2013. In the Consultation paper released at that time, TRR put forward a proposed new fee structure to replace the existing set of apparatus licence fees. Comments received on that Consultation paper were generally opposed to the size of the proposed new fees. TRR wishes to thank respondents for the valuable feedback on its previous proposals. After considering the responses received during that previous Consultation, TRR has decided to undertake further Consultation on the proposed new fees. In particular, it has reviewed the previously proposed set of licence fees after considering feedback received, and has now devised a new set of proposals for responders and stakeholders to consider.

- In this new Consultation paper, TRR discusses the principles applicable to the setting of apparatus licence fees. It considers that the underlying principle for apparatus licence fees should be the need to recover the costs of spectrum management from licensees – or at least a major portion of the costs involved. This is not only appropriate, but fair and responsible. The current level of apparatus licence fees falls short of the level required to recover the costs reasonably attributed to activities associated with radio apparatus licensing. Because of this, other licensees effectively cross-subsidise radio apparatus licensees. This is unfair, and will not be consistent with the efficient management of the spectrum. The apparatus licence fees proposed in this paper will go some of the way towards addressing the situation of under-recovery of costs of licensing activities. It is not proposed, however to move to full cost recovery fees at this time because of the burden that this would impose on licensees.
- Respondents to the Consultation are not bound to focus only on questions raised by TRR. TRR welcomes opinions on any matters relevant to the issues raised in the paper.
- A report on this Consultation will be published and will include a list of stakeholders, summary of comments received and explanations on how such comments were taken into account (as well as, if applicable, reasons as to why certain comments/suggestions were rejected).

1 INTERPRETATIONS AND DEFINITIONS

This section provides interpretations or definitions of terms used in the document.

Term	Definition
Act	Telecommunications and Radiocommunications Regulations Act No.30 of 2009.
Cost recovery	An economic term which means that fees should be set to recover all costs reasonably attributed to an activity, including indirect costs
Radio Apparatus	Equipment that makes use of electromagnetic radio frequencies for the purposes of communicating and/or broadcasting
Radio Apparatus Licence Fee	A fee set by TRR for the use of licensable Radio Apparatus in Vanuatu
Regulation Order	Radio Apparatus Licence and Spectrum Licence (Fees) Regulation Order No. 153 of 2012
VSAT	Very small aperture terminal used in communicating with communications satellites
HF	High Frequency band
VHF	Very High Frequency band
UHF	Ultra High Frequency band

2 BACKGROUND

This section discusses the background to the Consultation. It also discusses the principles TRR proposes to apply to the setting of radio apparatus licence fees.

2.1 BACKGROUND TO THIS CONSULTATION

The system of apparatus licence fees currently used in Vanuatu predates the creation of TRR. Prior to 2008, Radio Licence Fees were set and collected by Telecom Vanuatu Limited. Fee levels have not been adjusted since that time. Moreover, the current fees are not closely related to the costs of issuing and maintaining licences, or to the amount of spectrum authorised under particular types of licences. The total amount collected though licence fees falls well short of the costs that TRR incurs in managing the spectrum.

TRR considers that it is appropriate to review the current system of apparatus licence fees in order to assess whether the fees are meeting the objective of recovering the costs of managing the spectrum and of encouraging efficient use of the spectrum resource.

TRR conducted a previous Consultation on this same issue in 2013. A Consultation Paper was released for public comment and input in May 2013, and a number of comments were received in response. While comments varied between responders, generally those commenting upon the paper considered that the new level of fees proposed in the previous Consultation paper were too high, and would impose an unfair burden on radiocommunications users. The previous Consultation paper can be found at *http://www.trr.vu/index.php/en/public-register/consultations*

Following the responses to this previous Consultation paper, TRR has decided to undertake further Consultation on the proposed new Radio Apparatus Licence Fees and Procedures.

2.2 THE PRINCIPLE OF COST RECOVERY

To carry out the duties set out in the Act and the Regulation Order, TRR necessarily uses resources and incurs costs. Those costs should be recovered from the users of the spectrum to ensure that the management of the spectrum is carried out efficiently and fairly (it is unfair and inefficient to make all people in Vanuatu pay for services such as spectrum management that benefit a few. Those that can obtain a benefit from the use of a resource should bear the cost of providing that resource.)

Both direct and indirect costs need to be recovered. The direct cost of an apparatus licence includes the cost of assigning frequencies and the costs of other activities such as issuing the licence and any interference investigations conducted with respect to that licence. Indirect costs are those that are

difficult to attribute to any one licensee, but which all licensees benefit from. Indirect costs include the cost of planning and administration of the spectrum, and international activities such as representing Vanuatu at ITU meetings. When considering indirect costs, it is also necessary to take into account the fact spectrum management activities take up a portion of the general expenses incurred by TRR office (such as accommodation and energy use).

Question 1: Do you agree with the principle that the setting of radio apparatus licence fees should take into account costs incurred by TRR in the management of radio apparatus licensing?

Question 2: Do you agree that a proportion of common costs should be apportioned to the fees set for apparatus licences?

2.3 DEMAND FOR RADIO SPECTRUM

This Consultation is based on the understanding that, for most types of radio apparatus used in Vanuatu, the spectrum is not currently congested. Because of this, the current Consultation is aimed at the objective spelled out in Section 11 (a) of the Practices document (see Introduction above); that is, to recover the cost of managing the radio spectrum where there is no congestion.

Some spectrum bands in Vanuatu are more likely to be in scarce supply, at least in some locations. There is likely to be greater demand for spectrum used for mobile telephone services and broadband delivery for example.

Radio spectrum is a vital resource which is a vital input into an ever widening range of services. Use of the radio spectrum is crucial to communications in Vanuatu and an important enabler in the national economy. The setting of fees for spectrum in relatively high demand is an important instrument that influences the efficiency of spectrum use. TRR intends to issue a separate public Consultation document on the setting of radio spectrum usage fees for higher use bands (Radio Frequency Spectrum Fees), at another time.

3 THE CURRENT APPARATUS LICENCE FEE STRUCTURE

Currently in Vanuatu, licence fees apply to a range of commonly used radiocommunications apparatus. Table 1 sets out the type of radio apparatus now subject to apparatus licence fees.

Table 1 Current Apparatus Licence Types

Category	Apparatus Type	Number of licences
Fixed Links	Point to point links carrying data for example into telecommunications networks or between broadcasting studios and transmitters.	4
Maritime	Apparatus on commercial trading vessels (vessels over and under 25 metres in length); apparatus making use of dedicated frequencies and assigned channels (vessels over and under 25 metres in length); tourist passenger vessels; private pleasure craft; small inter-island water taxis and small locally registered/owned fishing craft. Coastal stations servicing vessels.	147
Aeronautical services	Aeronautical stations serving aircraft; commercial aircraft; private aircraft not used for commercial purposes.	38
Private mobile radio	Private mobile radio networks including land mobile networks.	140
Broadcast stations	Broadcast radio and TV networks.	8
Amateur stations	Amateur unrestricted; novice; and visitor's permit	26
VSAT	Receive only; Transmit and receive (for commercial communication purposes).	18
Telemetry and link services	Civil aviation beacon, signals or indicators.	4

Radio apparatus licence fees are still at the same level as applied before the establishment of TRR in 2008. The current fees were set by the incumbent operator TVL, without reference to costs incurred by TRR. No adjustment has been made to fee levels to reflect experience with the fees since the establishment of the independent regulator.

Table 2 sets out the current fees charged for radio apparatus licences.

Table 2 Current Apparatus Licence Fees

Description	Annual Licence Fee VT
HF Radio	9,600
VHF Teleradio; fixed price channel (Fixed price channel Port Vila or Luganville only)	4,800; 19,797; (42,667)
Maritime commercial	9,600
Marine water taxi, local fishing craft	1,920
Marine coastal station (HF only; VHF only; HF and VHF; dedicated frequency)	4,800; 1,920; 6,756; 21,178
Aeronautical ground station	9,600
Aeronautical commercial aircraft	9,600
Aeronautical private aircraft	2,880
VHF land mobile base station, vehicle using repeater, private repeater; not using repeater; handheld device	4,800; 2,880; 1,920
Link or telemetry transmitter	2,880
Broadcast station up to 100w; over 100w	4,800; 9,600
Private mobile radio	9,600
Amateur unrestricted; novice; visitor's permit	1,440; 960; 444
Paging base station	4,800
Civil aviation beacon/signals or indicators	9,600
VSAT receive only; receive-transmit	2,400; 6,667

3.1 PROBLEMS WITH THE CURRENT LICENCE FEE SYSTEM

As noted earlier, the current system of apparatus licence fees in Vanuatu dates from well before the establishment of TRR. Fees were set originally by the incumbent operator, TVL, and reflect the type of services in use in Vanuatu at the time.

There are numerous problems with the current system.

First, the current licence categories are no longer adequate to cover the types of modern communications equipment now in place. For example, there are now UHF land mobile systems in use in Vanuatu, not just VHF systems as implied by the licence category. Also, there is no category to cover point to multipoint systems such as the wireless broadband networks now operating in Port Vila. There is a category for VSATs (very small aperture satellite terminals) but not for larger earth stations.

Second, while in some cases the current fees show some loose relationship to the amount of spectrum used (for example, high powered broadcast fees are double those applying to low powered broadcast transmitters), there does not appear to be any close relationship between the current fees and the amount of spectrum or the value of the particular band used. This means that the current fees do not necessarily apportion the fees burden fairly across users. Similarly, they will not contribute much to spectrum efficiency — varying fees according to the amount of spectrum used is one way of promoting the efficiency of spectrum use (by providing a price incentive to use less).

Third, the current system of fees is not *transparent*. It is difficult to see how the fees were derived and why some types of licences are charged more than otherwise regardless of the amount of spectrum used. The level of fees in some cases seems to relate to TVL's commercial policies (and especially the relationship between its fixed and wireless telephone services) than to spectrum management requirements or the costs of managing licences.

Another problem is that the current system and level of fees is not related to TRR's costs in managing spectrum. As noted in section 2.2, the principle of cost recovery means that those benefiting from the use of spectrum should meet the costs of managing it.

Ideally, as discussed in the next section, licence fees should be proportional to the amount of spectrum used, and should reflect where possible the level of costs the regulator faces in licensing particular types of services. However, TRR acknowledges that fairness will also require some regard being paid to the ability of individual licensees to pay fees; thus, for example, there may be a case for continuing to charge local fishing craft and water taxis a lower fee than commercial shipping craft.

3.2 SPECTRUM MANAGEMENT COSTS

In the 2013 Consultation paper, it was estimated that the cost of radio apparatus licensing activities was about VT 4.9m each year or around 3.7% of total TRR costs. The paper noted radio licence fees contributed around VT 1.8m in income for TRR, about 1.3 % of operating costs. The paper therefore concluded that the current radio apparatus licence fees under-recovered costs by VT 3.1m.

Following comments received on the previous Consultation paper, TRR decided to look again at the whole issue of costs of managing apparatus licences and the level of fees that should be charged. As a result, it has become clear that the previous approach to estimating costs outlined in the 2013 paper was based on a theoretical approach to cost estimation, and was still linked to past practices rather than current realities.

TRR has now taken a completely fresh look at the issue of costs of managing apparatus licences. It has undertaken an assessment of the actual time staff spend in processing apparatus licences and related activities, and has apportioned other costs accordingly. The result of this fresh look at costings indicates that the costs are considerably *higher* than estimated in the previous paper. Staffing costs directly associated with apparatus licensing activities alone amount to more than 9 million Vatu.

Given the much higher level of costs now estimated for this activity, TRR has decided that it would not be practical to move now to full cost recovery. It has decided instead to opt for an approach of 'reasonable partial cost recovery'; it considers that to move to full cost recovery at this time would impose a too significant burden on spectrum users at this time.

The new apparatus licence fees proposed in this paper are aimed at raising VT 6.5m per year, still considerably less than the cost of managing apparatus licensing.

4 SETTING APPARATUS LICENCE FEES

The previous Consultation undertaken last year on this issue proposed a new fee structure involving fee increases, some significant, for all licence types. Increases varied between types, with some proposed new fees being much higher than the old fees, especially in cases where the licences were used for commercial activities (e.g. commercial aircraft). This was in recognition of the fact that commercial users have a higher capacity to pay than non-commercial users (and often have the capacity to pass on fee increases to their customers). As a result of the feedback received, however, TRR now agree that while it is true that commercial users have the capacity to pay higher fees than non-commercial users, a more pragmatic approach is needed to ensure that fees increases are spread more widely and equitably. However, TRR will still give significant weight to capacity to pay in setting fees.

While a number of responders to the previous Consultation were prepared to accept the principle of cost recovery in apparatus licence fees, there was a majority view that the proposed fee increases were too high and not justified by TRR costs. The previous proposed fee increases are set out in Table A1 in the Annex to this paper.

Having considered these comments, TRR agrees that it is desirable to look again at the level of apparatus licence fees.

4.1 How should Apparatus Licence Fees be calculated?

Some general principles that can be applied to ensure that licence fees are fair and efficient include:

- Simplicity (fees should be easy to calculate and administer);
- Transparency (it should be easy to see how the fee is calculated);
- Proportionality (those that use more spectrum should pay more);
- Efficiency (spectrum fees should contribute to the efficient use of spectrum).

These principles derive from those laid out by the International Telecommunication Union (ITU). The ITU has noted that the "establishment of spectrum fees must be carried out with due respect for the rules of transparency, objectivity, proportionality and non-discrimination. Where transparency is concerned, it is particularly important that the rules governing the establishment of fees be simple and readily understandable by all concerned".[1] In addition the ITU notes that certain reality principles should be adhered to in establishing fees:

[1] ITU Study Group 2, "Guidelines for the establishment of a coherent system of radio-frequency usage fees", 2010, page 2.

- Fees should not be introduced where those subject to them would be hard to identify individually (for example users of freely accessible frequencies) as collection of these fees would be uncertain and probably incomplete);
- Parameters that are difficult or impossible to verify in practice should be avoided (e.g. antenna height or the number of mobile stations in a private network); and
- The establishment of a fee system should be based on a consensus among all the players, since this would make for a healthy collection rate.[2]

These reality principles can explain, for example, why spectrum regulators choose not to levy fees on Wi-Fi networks using "unlicensed" bands, nor on individual mobile phone users (even though both categories of users have access to the spectrum).

TRR will seek to use the ITU principles in establishing its new fee structure. While it acknowledges that it will be difficult to get a consensus amongst all players in Vanuatu on the level of fees, it hopes that by consulting extensively on the fee structure (and listening to the views of responders), there at least can be a degree of agreement about the general principles that should underlie apparatus licence fees.

When deciding on the appropriate level of licence fees, several factors need to be taken into account, including:

- The total level of costs incurred by TRR attributable to the management of the spectrum;
- The level of costs incurred relating to particular licence types where this can be separately identified;
- The amount of spectrum used by particular licences (bandwidth);
- The area of coverage of the particular service (coverage area);
- The value of the particular band used by licensees (some bands are more valuable than others).

- Question 3: Do you agree that TRR should use the principles of simplicity, transparency, proportionality and efficiency in the setting of radio apparatus licence fees?
- Question 4: If not, what other principles should TRR take into account?

4.2 Use of a formula to derive fees

To ensure fairness and transparency, spectrum regulators in some countries have used a fee formula to work out the level of fees for particular services. Such fee formulas usually attempt to incorporate the factors listed in the previous section. The ITU has provided a useful guide to fee formulas — in its report *Economic Aspects of Spectrum Management*, the ITU states that "Pricing requires the development of formulae to operate effectively". It notes that such formulas need to be fair, objective, transparent and simple. It recommends that only the minimum number of factors necessary for achieving the objectives be used (in other words formulas should not be made too complex).

[2] ITU "Guidelines for the establishment of a coherent system of radio-frequency usage fees", pages 2-3.

The ITU suggests a number of coefficients be considered, including:

- Bandwidth;
- Band value (which they call the position within the spectrum of the frequency);
- Number of frequency authorisations;
- Surface area covered;
- Reference monetary values specific to the applications in question.

By using these factors, fees will vary according to the amount of spectrum used (bandwidth and surface area covered. The more surface area covered, the less the scope for others to use the same frequency). Fees will also vary according to the value of the bands (some bands are in more demand than others).

TRR proposes to base its fees on a formula. Because the use of radiocommunications in Vanuatu is less extensive and less complex than in some other countries, TRR proposes to use a simplified formula to determine an appropriate level of fees for particular services:

Fee= V x BW x Band x SF x T

Where V is Base Value of Spectrum; BW is bandwidth in MHz; Band is the band factor; SF is the service factor applying to the particular service; T is type (one way or two way).

In this equation, the factor *V* (Base Value of Spectrum) is set at a level that reflects the amount of revenue to be collected (or to put it another way, to recover the agreed amount of costs). The *Band* and *SF* (service) factors are intended to reflect the relative value of spectrum in particular bands and in particular uses. It should be noted that the Service Factor, SF, takes into account the capacity to pay of operators using particular types of services.

In recognition of the fact that fixed links and satellite services permit greater sharing than wide area services (such as land mobile, maritime, aviation, broadcasting and broadband), a lower V and Band factor will be applied to them.

Of course, fee formulas only provide a guide to fee setting. The actual fees charged will depend on the factors built into the formula and the values given to them. For example, in the formula above, values will need to be assigned to the base value of spectrum (V), and the Band factor.[3] However, fee formulas have the advantage of promoting proportionality and hence fairness between users.

Some further information about the ITU's suggested fee formula approach and some examples of fee formulas in the region can be found in the Annex. Also in the Annex is a more detailed description of the operation of the fee formula proposed in this paper for Vanuatu, including the values for the factors in the equation (V, Band, SF).

[3] (Bandwidth (BW) and Type (T) are determined by the nature of the service in question) and thus do not need values set by TRR.

One approach to the use of the formula to calculate fees would be to have all fees determined by reference to the formula. That is, whenever a licence was renewed or a new licence issued, TRR staff would work out each fee by substituting values for bandwidth and band in the formula and then doing a calculation. While this may be the most transparent way of fee setting, TRR is concerned that this may be at the cost of considerable additional complexity and administrative burden, and would thus lead to increased fees because of the additional time it would take.

Because of this additional complexity, TRR instead proposes that a new table of fees be produced, based on using the formula to calculate fees for the most common bandwidths and bands used for that type of service. For example, land mobile systems normally use either 12.5 kHz or 25 kHz channels; fixed links in the microwave bands use some standard channel widths (e.g. 14 or 28 MHz) so the fees would be based on these standard arrangements.

Question 5: Do you agree with the use of a fee formula approach to help TRR establish apparatus licence fees?

Question 6: Do you agree with the use of the formula proposed in this paper?

4.3 Application Fee

As noted earlier, licence fees should reflect costs incurred by TRR wherever possible. Clearly, additional costs will be incurred for new licences compared to licence renewals (for example there may be the cost of assigning a frequency, coordinating with other users, and setting up a new file).

For this reason, TRR proposes that a new fee, an *Application Fee*, should be charged for issuing a new licence (licence renewals would not pay this fee). It is proposed that the Application Fee be set at 1000 Vatu for licences that did not require a frequency to be assigned (for example for an Amateur licence), and 5000 Vatu for licences where it was necessary for TRR to assign a frequency or frequencies.

Question 7: Do you agree that an Application Fee should be charged for new licence issues? Do you agree with the proposed level of application fees?

4.4 Late Payment Fee

One source of additional cost for TRR is the need to chase up late payment of fees. This means that, in effect, those licensees who pay on time are subsidising those that pay late (because the additional costs that result from late payment will be paid by all licensees, not just those that pay late). Late payment of apparatus licence fees has been a continuing problem for TRR.

To encourage the on time payment of licence fees, TRR proposes to put in place a late payment fee. The late payment fee would be calculated using the following formula:

$$late\ fee = \frac{number\ of\ days\ the\ payment\ is\ late}{365}\ x\ total\ fee\ for\ the\ service$$

The Late Payment Fee would be added to the total fee otherwise payable for renewal of the license. TRR proposes that the minimum late payment fee would be 2000 Vatu.

Question 8: Do you agree that the proposed Late Payment Fee should be charged for overdue licences?

5 PROPOSED NEW APPARATUS LICENCE FEES

Based on the principles and the formula approach set out in Section 4, the proposed new apparatus licence types and the corresponding fees are presented in Table 3.

Table 3 Proposed Apparatus Licence Fees

Description	Current Fee VT	Proposed fee
Aeronautical ground station	9,600	50,000
Aeronautical commercial aircraft	9,600	50,000
Aeronautical non-commercial aircraft	2880	20,000
Amateur	1440/960	3000
Amateur Visitor's Permit	444	1500
Broadcast station sound	4800	45,000
Broadcast Station — Community Radio	N/A	10,000
Broadcast Station TV	9600	108,000
Civil aviation beacon/signals or indicators	9,600	25,000
Earth Station large	N/A	30,000
VSAT Receive Only	2400	5,000
VSAT Receive Transmit	6667	20,000
Experimental	N/A	4800 per MHz or part thereof
Fixed Link or telemetry transmitter	2,880	
Bandwidth 7 MHz or below (one way/2 way)	(all types)	8,000/16,000
Bandwidth more than 7 MHz up to 14 MHz (one way/2 way)		15,000/30,000
Bandwidth more than 14 MHz (one way/2 way)		30,000/60,000
Land mobile station duplex 12.5 kHz/25 kHz	1920-4,800	9,000/18,000
Land mobile station simplex 12.5 kHz/25 kHz	1920-4,800	5,000/10,000
Land Mobile HF radio	9,600	9,000
Private Mobile radio	9,600	9,000
VHF Teleradio	9,600	9,000
Fixed Price channel (fixed price channel Port Vila or Luganville only)	19,997/42,667	25,000
Maritime Commercial	9,600	20,000
Marine water taxi, local fishing craft	1,920	6,000
Marine Coastal station HF only	4,800	12,000
Marine Coastal station VHF only	1920	10,000
Marine Coastal station HF and VHF	6,756	22,000
Marine Coastal station (dedicated frequency)	21,178	30,000
Paging base station	4,800	10,000
Point to Multipoint Services		4,800 per MHz or part thereof

It should be noted that the proposed apparatus licence fees in Table 3 represent some significant differences compared to the fees recommended in the 2013 Consultation. In particular, there have been some very significant decreases compared to the previous recommendations, including:

- HF Radio down from 50,000 to 9,000 Vatu (this is also a reduction over the current fee of 9,600 Vatu);
- Aeronautical commercial aircraft, down from 100,000 to 50,000 Vatu. While representing a significant decrease over the 2013 proposals, these fees are still higher than for some other services because of the commercial nature of aviation services;
- Maritime commercial, down from 30,000 to 20,000 Vatu;
- Private mobile radio (50,000 to 9,000 Vatu);
- Paging base stations (30,000 to 10,000); and
- VSAT receive-transmit (30,000 to 20,000).

On the other hand, there are some increases over the 2013 proposals for other categories, including:

- Fixed link fees are proposed to be in the range 8,000 to 60,000 Vatu rather than 5000 Vatu (this reflects the large amounts of spectrum used by some fixed links, for example those using 14 MHz or larger channels). It is proposed that in the future, fees for fixed links will vary according to the bandwidth used, rather than being a flat fee for all links; and
- Broadcasting fees are proposed to be 45,000 to 108,000 Vatu compared to 40,000 to 80,000 Vatu. Again this reflects the amount of spectrum used, especially for a TV channel, as well as the value of broadcasting band spectrum. TV spectrum in particular can be regarded as "prime waterfront" spectrum; that is, it is high value spectrum with excellent propagation characteristics. Also, TV transmission uses relatively large amounts of spectrum (8 MHz channels).

In setting licence fees, TRR has deliberately sought to price new services more fully than existing services. As an example, there are very few fixed links currently subject to licensed fees in Vanuatu. Fees for fixed links in the future will be significantly higher. Those wishing to establish new fixed links will be aware of the higher fees when deciding whether to proceed with such links. Similarly, while point to multipoint services have not to date been subject to fees, new point to multipoint services will be subject to fees set out in the Table. (However, existing point to multipoint services may be subject to spectrum fees in the future. TRR will be undertaking a separate Consultation process on the question of spectrum fees). This "bias" towards setting higher fees for new services compared to existing services will help to ease the burden on existing licensees.

As well as the proposed fee changes, Table 3 also contains some changes to the categories of apparatus licences. These changes include:

- Having a single fee for amateur licences (other than visitor's permits) instead of separate fees for unrestricted and novice licences (for administrative simplicity);
- Adding a category for community radio stations, to reduce the impact of higher fees on local non-commercial radio;
- Removing the distinction between VSAT receive-transmit and VSAT domestic/international;
- Adding a category of Experimental licences. It is intended that the Experimental category could be used for new services that do not fit within an existing category or for which fees have not been established. It is intended that Experimental licences would be issued on a temporary basis only. When a new

licence category and fees are established, these services would cease to be licensed under the Experimental category;

- Providing for fees for fixed links to vary according to the amount of spectrum used (that is, depending on the channel widths employed) rather than a flat fee. This will enable fees to be made more proportional to the amount of spectrum used;
- Making it clear that land mobile services can operate in the UHF and HF bands as well as VHF. Also it is proposed to simplify the system of fees for land mobile and land mobile-like services. While fees will vary depending on whether 12.5 kHz or 25 kHz channels are used (in the VHF and UHF bands), otherwise a basic land mobile service fee of 9000 Vatu is proposed for HF, VHF, and UHF services. A higher fee will be charged for the use of 25 kHz channels, however, in recognition of the lesser spectrum efficiency of such systems compared to 12.5 kHz systems;
- Adding a category for point to multipoint services not covered elsewhere, for example for wireless broadband networks (see above).

Some fees have been discounted to reflect the non-commercial use of the services or the ability to pay (e.g. private aircraft radios are to be charged at a lower rate than for commercial aircraft; there continues to be a lower fee for marine radios for water taxis and local fishing craft compared to commercial vessels).

Question 9: Do you agree with the new radio apparatus licence fees? If not, on what grounds do you object?

Q10 Do you agree with the proposed changes to apparatus licence categories? Do you have any other suggestions for category changes?

5.1 Other Fees

Other proposed fees are set out in Table 4.

Table 4 Other Fees

Type of Fee	Fee Level
Application Fee (new licences only)	1000 Vt where no frequency needs to be assigned; 5000 where frequency assignment is required
Late payment Fee	$late\ fee = \frac{number\ of\ days\ the\ payment\ is\ late}{365}\ x\ total\ fee\ for\ the\ service$ Minimum late payment fee will be 2000 Vatu.

5.2 Review of Apparatus Licence fees

TRR proposes to review the system of apparatus licence fees again in three years' time. This will enable the impact on licensees to be more accurately assessed as well as taking into account any Consumer Price Index (CPI) variations, and a further review of actual cost estimates. It will also enable TRR to make an assessment of whether it will be feasible in the future to move to a higher level of cost recovery than proposed in this Consultation paper.

6 REGULATORY IMPACT ASSESSMENT

6.1 As identified in TRR's 2014 and Onwards Work Program, this Consultation addresses the methodology for the setting of new radio apparatus licence fees to replace those fees that have been in place since before the establishment of TRR. Under the Work Program, Consultation on apparatus licence fees is due to be completed by the fourth quarter 2014. TRR intends to have new apparatus licence fees in place by 1 January 2015.

6.2 The arrangements are in line with the provisions of the Telecommunications and Radiocommunications Regulation Act No.30 of 2009. Section 7 (2) (e) of that Act gives TRR the power to allocate, assign and manage the radio spectrum, while Section 7(4) (b) of the Act grants to TRR powers to prescribe "procedures, forms, and fees in respect of any licence". Section 7 (4) (c) gives TRR power to provide "for the methodology by which any calculation required under this Act is to be made".

6.3 The proposed arrangements are also in line with the Radio Apparatus Licence and Spectrum Licence (Fees) Regulation (Order No. 153 of 2012). The Regulation requires a person who operates radiocommunications equipment in Vanuatu to have a radio apparatus licence (Section 3 (1)) and provides for the payment of a prescribed fee for the licence (Section 3 (2)).

6.4 Implementation of the new licence fees will support the Telecommunications and Radiocommunications Regulation Act No. 30 of 2009, the Government's National ICT Policy and the Priorities & Action Agenda (PAA). In particular, it will facilitate the management of the radio-frequency spectrum to promote national social and economic development.

6.5 As a system of radio apparatus licence fees is already in place, the proposals in this Consultation do not represent a major shift in policy. Instead, the proposals represent a change to the existing policy to ensure that fees more accurately reflect the costs of managing the radiofrequency spectrum and provide fairness and balance. TRR recognises that the existing fee structure and levels are now not fit for purpose. In particular, they fail to generate sufficient revenues to cover the costs associated with administering the services involved, and their relative structure has not changed to reflect changes more broadly in communications markets.

6.6 The fees currently levied were set prior to the establishment of TRR in February 2008 and were set and collected by Telecom Vanuatu Limited (TVL). The setting of radio apparatus licence fees by TVL was undertaken with a very different set of objectives in mind than the objectives of a modern communications regulator. A primary purpose was to set fees to discourage potential competition to services that TVL provided.

6.7 In its document *Spectrum Planning, Allocation and Assignment Practices* (http://www.trr.vu/index.php/en/telecom-industry/radio-frequency) published in December 2011 TRR listed objectives of spectrum charges and fees, including to recover the cost of managing the radio spectrum where there is no congestion; and to encourage efficient use of the

radio spectrum. Unlike the existing set of fees, the fees set out in this Consultation paper are designed to meet these objectives.

6.8 TRR is undertaking this public Consultation in order establish an understanding and general agreement with the principles and to not impose unnecessary burdens on spectrum users and industry with the proposed new fee structure. TRR will take into account the views of responders to this Consultation paper in making decisions about the level of apparatus licence fees.

6.9 The proposed apparatus licence fees will safeguard and promote the interests of Vanuatu residents and business by:

- Helping to provide a predictable environment for the use of the radiofrequency spectrum, and in particular with regard to the level of apparatus fees;
- More accurately reflecting the value of spectrum to the user;
- Making the system of apparatus licence fees more transparent, so that radiocommunications users will have a clearer idea of how fees are derived;
- Helping to ensure that the cost of managing the spectrum is balanced and shared fairly by apparatus licensees, rather than falling as a burden on the community as a whole;
- Bringing the structure and level of apparatus fees more into line with the range of communications equipment now in use.

6.10 Some users will be adversely affected by increases in fee levels, while some users will benefit from fee reductions. Overall, however, the new fees will raise significantly greater revenue than the existing fees. TRR considers that the adverse impacts of fee rises are justified because:

- Apparatus fee levels have not increased for many years, and do not accurately reflect the costs of spectrum management nor reflect value to the user;
- Spectrum users have had a long notice period now of the fact that their fees are likely to rise (there was an earlier Consultation on this matter in May 2013);
- The views of responders to the previous Consultation have been carefully considered and adjustments have been made, representing in some cases considerably smaller increases than those proposed in 2013;
- The proposed fees are now much more closely tied to the amount of spectrum used, and the economic value of the bands concerned.

6.11 The proposed new apparatus licence fees, while in most cases higher than the existing fees, are generally lower than those proposed in the 2013 Consultation Paper. This reflects the fact that:

- TRR has sought to spread the burden of fees more equally than it previously proposed, taking into account representations from responders about the impact of the previous proposals;

- Fees for new services are proposed to increase more than fees for existing services, again in recognition of the impact of fee increases on existing businesses;
- TRR has decided that full cost recovery through fees is not desirable at this time. Instead fees reflect only 'reasonable partial recovery' of costs.

6.12 In setting the proposed new fees, TRR has had regard to the level of fees in comparable countries in the region. In many cases, the fees proposed are significantly lower than the fees levied in our region; e.g. Papua New Guinea. However, while regard has been had to fees in other countries, the proposed fees have been set based on Vanuatu's circumstances only.

6.13 The new Apparatus Licence fees will promote the interests of Vanuatu residents and businesses by establishing a more stable and secure system of funding spectrum management activities, which will enable TRR to carry out its spectrum management functions on a sustainable basis over time. TRR therefore considers that the benefits of the new fee structure will over time considerably exceed the costs imposed on users.

6.14 TRR will review the new apparatus licence fee schedule in three years. This will provide the opportunity to assess the impact of the new fees, and to adjust the fees if necessary.

6.15 The new apparatus licence fee schedule will come into effect on 1 January 2015 instead of 1 January 2014 as proposed when TRR previously consulted on this issue. Two public Consultations on the fee system will have provided an extensive opportunity for those affected to have their views considered.

7 CONSULTATION QUESTIONS

7.1 Specific Questions

Question 1: Do you agree with the principle that the setting of radio apparatus licence fees should take account costs incurred by TRR in the management of radio apparatus licensing?

Question 2: Do you agree that a proportion of common costs should be apportioned to the fees set for apparatus licences?

Question 3: Do you agree that TRR should use the principles of simplicity, transparency, proportionality and efficiency in the setting of radio apparatus licence fees?

Question 4: If not, what other principles should TRR take into account?

Question 5: Do you agree with the use of a fee formula approach to help TRR establish apparatus licence fees?

Question 6: Do you agree with the use of the formula proposed in this paper?

Question 7: Do you agree that an Application Fee should be charged for new licence issues? Do you agree with the proposed level of application fees?

Question 8: Do you agree that the proposed Late Payment Fee should be charged for overdue licences?

Question 9: Do you agree with the new radio apparatus licence fees? If not, on what grounds do you object?

Q10 Do you agree with the proposed changes to apparatus licence categories? Do you have any other suggestions for category changes?

8 ANNEX

This Annex contains supplementary information about aspects of the proposals.

8.1 Recommended Apparatus Licence Fee levels in 2013 Consultation Paper

Table A1: 2013 Recommended Fee Levels

Description	Annual Licence Fee VT
HF Radio	50,000
VHF Teleradio; fixed price channel; fixed price channel Port Vila or Luganville only	10,000; 60,000; 100,000
Maritime Commercial	30,000
Marine water taxi, local fishing craft	5,000
Marine coastal station (HF only; VHF only; HF and VHF; dedicated frequency)	10,000; 4,000; 15,000; 60,000
Aeronautical ground station	50,000
Aeronautical commercial aircraft	100,000
Aeronautical private aircraft	15,000
VHL land mobile base station, vehicle using repeater, private repeater; not using repeater; handheld device	15,000; 8,000; 6,000
Link or telemetry transmitter	5,000
Broadcast station up to 100w; over 100w	40,000; 80,000
Private mobile radio	50,000
Amateur unrestricted; novice; visitor's permit	2,500; 1,500
Paging base station	15,000
Civil aviation beacon/signals or indicators	30,000
VSAT receive only; receive-transmit (domestic/international)	10,000; 30,000 (50,000)

8.2 Use of fee formulas to set fees for spectrum use

8.2..1 ITU GUIDELINES

The ITU has established some guidelines to assist administrations use fee formulas in order to improve fairness and transparency in fee setting. In its report *Economic Aspects of Spectrum Management*, the ITU states that "Pricing requires the development of formulae to operate effectively". It notes that such formulas need to be fair, objective, transparent and simple. It recommends that only the minimum number of factors necessary for achieving the objectives be used (in other words formulas should not be made too complex).

The ITU suggests number of coefficients be considered, including:

- Bandwidth;
- Band value (which they call the position within the spectrum of the frequency);
- Number of frequency authorisations;
- Surface area covered;
- Reference monetary values (k1, k2 etc) specific to the applications in question.

By using these factors, fees will vary according to the amount of spectrum used (bandwidth and surface area covered. The more surface area covered, the less the scope for others to use the same frequency). Fees will also vary according to the value of the bands (some bands are in more demand than others).

An example of a fee formula suggested by ITU (for a point to point fixed service allotment) is:

Rs=L*bf*a*c*k1

Where Rs= amount of annual spectrum fee
L= Allocated bandwidth
a= frequency usage authorisations
c= ratio between the surface area covered by the allotment and the total surface area of the country
k1= reference monetary applicable the fixed service.

Another example would be (for a private mobile radio assignment):

Rs=L*bf*c*k2

Where k2 is the reference monetary applicable the land mobile service. (Because this is for a single assignment, a=1, and can therefore be ignored.)

8.2..2 PAPUA NEW GUINEA

Several countries now use formulas to help work out fees. For example in this region, *Papua New Guinea* uses the following formula:

Fee=V x (2600÷F) x B x T x L

Where V = Reference value of spectrum; F=Frequency, represented by a value (for frequencies below 30 MHz, the value of F is 30; for frequencies above 30 GHz, the value is 30,000; for frequencies between these marks the value F = the mid-point in MHz of the band in NICTA's band plan. For the 2.3-2.4 GHz band, for example, F= 2350); B=total bandwidth of licence in MHz; Type (T) is the relative extent to which the service denies spectrum to others (a fixed point to point service would have a lower value than a point to multipoint service for example); L=location (depending upon population and economic development).

It should be noted that the PNG formula is used to work out the Annual Variable Spectrum Fee. In addition, apparatus licence fees also pay a fixed fee which varies according to apparatus type. For example, aeronautical stations pay a fixed annual fee of 1266 Kina in addition to the variable spectrum fee which could be over 300 Kina; point to point stations pay a fixed fee of 1000 Kina plus the variable fee (as an example the variable fee would be 2182 Kina for a 14 MHz link in the 7 GHz band); and TV broadcasters pay a fixed fee of 2500 Kina plus the variable fee (which in a major city could be as much as 55,000 Kina). Note that all these fees are considerably higher than the corresponding fees proposed for Vanuatu in this Consultation paper.

8.2..3 THAILAND

Another example is the formula used in Thailand:

Frequency Fee = (BW x FC x AC) + MC

Where BW is bandwidth in kHz; FC is a frequency factor (in bands up to 1 GHz, FC=10, between 1 and 3 GHz the factor is 5; up to 10 GHz it is 0.5, up to 20 GHz it is 0.05 and above GHz it is 0.001). AC, the application factor varies between "public radiocommunications networks" and "specific radiocommunications networks". MC is the minimum charge in baht.

8.2..4 AUSTRALIA

The Australian approach involves the following formula:

Spectrum access tax = k x si x gi x bi x ai

Where k is a constant; si is a spectrum location (band) factor; gi is geographic location (high, medium, low density and remote); bi is bandwidth, ai is coverage area.

8.2..5 RECOMMENDED FORMULA FOR VANUATU

The fee formula proposed for use in Vanuatu to the set apparatus licence fees is:

Fee= V x BW x Band x SF x T

Where V is Base Value of Spectrum; BW is bandwidth in MHz; Band is the band factor; SF is the service factor applying to the particular service; T is type (one way or two way).

This formula has been used to calculate fees for some common types of services (using common configurations for bandwidth and bands). The values used in this formula are set out below.

Table A2: Values used in the formula

Variable	Service	Value
V (Base Value of spectrum)	Wide area services (e.g. land mobile, maritime, aviation, broadcasting)	45,000
	Narrow area services (e.g. point to point links, point to multipoint services, satellite links)	4000 (for bands below 1 GHz) 800 (for bands above 1 GHz)

The different values of V for wide area services compared to narrow area services is a reflection of the greater potential for sharing offered by narrow area services.

Variable	Band	Value
Band	HF	3
	VHF	2.5
	UHF	1
	Above UHF	0.9

Note: different values for the band factor across different parts of the radiofrequency spectrum take into account the different propagation characteristics of the bands. As a general rule, the lower the frequency, the better the propagation.

Variable	**Service**	**Value**
Service Factor	Aeronautical	4.4
	Broadcast sound	2.0
	Broadcast TV	0.3
	Earth Stations, VSAT	1.5
	Fixed	1.5
	Land mobile	3.2
	Maritime	3.5
	Point to Multipoint	3.0

Service Factor (SF) values represent an estimate of the value of spectrum used in a particular service.

Examples of Fee calculations

1. Land mobile service

For a land mobile service in the VHF band using 12.5 kHz channels, the fee would be calculated as follows:

Fee= 45,000 x 0.0125 x 2.5 x 3.2 x 2 (for a duplex service)

Fee= 9000 Vatu

2. Maritime commercial

Fee = 45,000 x 0.025 x 2.5 x 3.5 x 2

Fee= 19,687.5 (Fee has been round to 20,000 Vatu).

3. Fixed link (14 MHz channel in 7 GHz band)

Fee=800 x 14 x 0.9 x 1.5 x 1/2

Fee= 15,120 for a one way link, 30,240 for a two way link (fees have been rounded to 15,000 and 30,000 Vatu).

The lower Service Factor for fixed links represents the greater capacity for sharing of fixed links compared to wider area services.