CONSULTATION DOCUMENT

Consultation Paper on the Review of Annual Spectrum Fees in ECTEL Member States.

1. The National Telecommunications Regulatory Commission is in receipt of a submission from the Eastern Caribbean Telecommunications Authority ('ECTEL') containing a consultation paper on the **Review of Annual Spectrum Fees in ECTEL Member States.**

2. A copy of the consultation document is attached along with the Consultation Response Form which should be completed after reviewing the consultation document.

3. The initial comments period will run from ***17th August 2026*** **to** ***16th October 2026.***

4. The Comment on Comments period will run from **26th** ***October 2026*** **to 6th** ***November 2026***.

5. Following the Reply Comments period, ECTEL's Directorate will revise and submit the Review of Annual Spectrum Fees in ECTEL Member States to the Council of Ministers for its recommendation for adoption in the ECTEL Member States.

6. All responses to this Consultative Document should be written and sent by email to: -

Managing Director
ECTEL
P. O. Box BW395,
Gros Islet, LC01 601
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Fax: 1-758-458-1698
Email: consultation@ectel.int

Disclaimer

This consultative document does not constitute legal, commercial or technical advice. The consultation is without prejudice to the legal position of ECTEL's duties to provide advice and recommendations to the Ministers with responsibility for electronic communications and the National Telecommunications Regulatory Commissions.

SUGGESTED GUIDELINES FOR RESPONSES TO CONSULTATION

In order to reduce administrative lags in ECTEL's public consultation processes and to enable a reasonable degree of transparency by sharing of views submitted, ECTEL hereby recommends that parties desirous of making contributions to the attached consultation follow the procedures outlined below:

1) Responses to consultations should be clearly labelled as a response to the particular ECTEL consultation and correctly referenced by title.

2) Documents should contain: the name of Party/Licensee/NTRC commenting, address, telephone, and email contacts of commentary author or corporate officer(s) responsible for the document. This information will enable ECTEL to clarify any comments where necessary, or to facilitate follow-up dialog by ECTEL where required.

3) The Consultation Document sets out questions on specific regulations/parts of the regulations. Commenting parties may indicate a response (concur or disagree) on the recommendation and provide explanations/reasons for each response.

4) Where parties have no view or interest in expressing a view on a specific recommendation, parties should indicate "no comment" and number appropriately.

5) Responses/comments to specific recommendations should be double spaced and numbered in sequence with the recommendation. Where comments are extensive, paragraphs should be numbered. Pages should be numbered.

6) Commenting parties should avoid making comments in the form of tracked changes to consultation documents.

7) Where possible, comment documents should be submitted in PDF format.

8) Where possible, parties should make explicit reference to academic articles, legislative provisions in other jurisdictions, or other sources relied on, and should provide copies of these together with comments. Accurate citations of resources relied on will suffice if copies cannot be provided.

9) If relevant, parties commenting on specific provisions of legal language should propose alternative language where possible. Such language should be

appropriately highlighted and double spaced. Parties should avoid proposing alternative language in tracked changes to the consultation document.

10) Comments should be submitted via e-mail; only comments submitted via e-mail will be acknowledged.

11) Commenting parties should expressly indicate or highlight which parts of comment documents contain commercially sensitive or confidential information that should not be published.

ECTEL reserves the right to publish all the responses received to the consultation and provides no undertakings to refuse to publish such comments where requested, on its website or otherwise.

ECTEL is grateful to those parties adopting the recommended guidelines for submitting comments to this consultation.

Review of Annual Spectrum Fees in ECTEL Member States

Public Consultation Document

Eastern Caribbean Telecommunications Authority (ECTEL)

Date of publication: **17 August 2026**

Closing date for responses: **16 October 2026**

About this consultation

Item	Detail
Issued by	The Eastern Caribbean Telecommunications Authority (ECTEL), on behalf of and in cooperation with the National Telecommunications Regulatory Commissions (NTRCs) of the five ECTEL Member States.
Subject	Proposed revisions to the annual spectrum fee schedules applying in Dominica, Grenada, St Kitts and Nevis, Saint Lucia and St Vincent and the Grenadines.
Audience	Mobile network operators, fixed wireless and microwave link users, broadcasters, satellite and non-terrestrial network (NTN) service providers, other spectrum users, consumer representatives and the public.
Publication date	**17th August 2026**
Closing date	**16th October 2026**
How to respond	By email to **consultation@ectel.int**, using the question numbering in this document. See Section 2.
Status	Consultation document. Nothing in this document constitutes a final decision. ECTEL will publish a decision document after considering responses.

Contents

Executive summary

ECTEL is consulting on a comprehensive revision of the annual spectrum fees that apply in the five ECTEL Member States: Dominica, Grenada, St Kitts and Nevis, Saint Lucia and St Vincent and the Grenadines. This summary sets out why we are reviewing fees, the principles we have applied and the package of proposals on which we invite views.

Why we are reviewing fees

The fee schedule was last reviewed in 2006, with only piecemeal amendment since. At the same time, cumulative consumer price inflation in Saint Lucia between 2006 and 2024 (the latest available year) was about 39%.[1] Second, ECTEL receives no external financing and the cost of the functions it provides to the sector has risen since 2006 while the fees that fund them have not kept pace. Third, fees for identical services are not harmonised across Member States, which creates uneven burdens, administrative complexity and inconsistent investment signals.

The objectives and principles we have applied

Four objectives guide the review:

- efficient use and allocation of spectrum; technology neutrality;
- affordability, with fees primarily recovering administrative costs and reflecting opportunity cost only where demand exceeds supply; and
- and harmonisation across Member States.

We apply an economic value lens to determine the appropriate pricing basis for each service. Where authorisations confer exclusive or highly protected rights with material economic value, as with IMT spectrum, fees should reflect that value. For shared, localised or coordinated uses with more limited economic value, fees should be set primarily to recover the cost of managing the spectrum. The proposed fee levels are grounded in international benchmarking.

Overview of proposed fee changes

Table 1: Summary of proposed annual fees

Service	Item	Current	Proposed	Change
IMT	Sub-1 GHz	0.10 equivalent	0.14XCD/MHz/Pop	Up
IMT	Lower mid-band	0.10 equivalent	0.10XCD/MHz/Pop	Neutral
IMT	Upper mid-band	Not yet assigned	0.03XCD/MHz/Pop	New tier
Fixed links	Per link, all types	Stepwise by type and bandwidth	XCD336 x MHz x band factor	Up
Broadcasting	AM channel fee	500	XCD700	+39%

[1] https://data.worldbank.org/indicator/FP.CPI.TOTL?locations=LC

Broadcasting	FM channel fee	2,000	XCD2,800	+39%
Broadcasting	TV channel fee	3,000[2]	XCD4,600	+39%
Satellite	VSAT earth station (Ku or C band)	12,000 to 15,000 per frequency	XCD6,000 per VSAT	Down
Satellite	Gateway earth station (Ku or C band)	50,000 to 60,000 per frequency pair	XCD20,000 per station	Down
Satellite	NTN spectrum fee, shared satellite bands	n/a	XCD25 per MHz per Member State	New
Paging	Commercial / non-commercial	600 / 200 per frequency	Removed	Delete
Other services	Spread spectrum, land mobile, maritime, aeronautical, community radio, studio links	Various	Unchanged	Hold

Notes:

1. *the IMT current figure of 0.10 is the population-weighted equivalent of the current fee of XCD20,000 per paired MHz per Member State; and*
2. *Except in Saint Vincent and the Grenadines.*

In addition to proposing changes to the fee levels, we also propose two structural changes to the fee regime:

- Fixed Wireless Access (FWA) assignments in IMT-suitable bands would be charged under the IMT schedule rather than as fixed links, so that comparable spectrum use faces comparable fees; and
- For IMT we consult on how the total fee across all five ECTEL Member States should be allocated across each Member States. The two options are: in proportion to each state's population or in equal fifths as today.

In revenue terms, the package would place ECTEL on a financially sustainable footing with fees better aligned to the value of the spectrum in use and to the cost of managing it. We recognise that this is a material change for licensees in ECTEL Member States, and Section ten (10) sets out the direction and relative scale of the impact and our reasoning for the change in fees. Fees would remain modest relative to sector revenues: total IMT fees would move from 3.0% to just under 4.0% of 2024 industry revenues, against an international norm of 7-8% of revenues spent on spectrum.[2]

Fifteen (15) consultation questions are set out beside the proposals they test and consolidated in Appendix C. Section two (2) explains how to respond.

[2] https://www.gsma.com/connectivity-for-good/spectrum/gsma_resources/spectrum-pricing-and-renewals-in-europe/; https://www.econstor.eu/bitstream/10419/331317/1/ITS-E-2025-72.pdf

1. ECTEL and the NTRCs

The Eastern Caribbean Telecommunications Authority (ECTEL) is the regulatory advisory body for electronic communications in five Member States: Dominica, Grenada, St Kitts and Nevis, Saint Lucia and St Vincent and the Grenadines. ECTEL works with the National Telecommunications Regulatory Commission (NTRC) in each Member State, which administers licensing and frequency authorisations nationally. ECTEL receives no external financing and the spectrum fees paid by users fund the spectrum management, licensing, monitoring and policy functions that ECTEL and the NTRCs provide to the sector.

1.1. Structure of this document

Section two (2) explains how to respond to this consultation. Section three (3) sets out the background to the review and Section four (4) on the pricing principles and benchmarking methodology we have applied. Sections five (5) to nine (9) set out our proposals service by service: IMT spectrum, fixed links, broadcasting, satellite and NTN, and other services. Section ten (10) presents the revenue impact and Section eleven (11) implementation and transition. Appendix A contains the draft consolidated fee schedule, Appendix B a glossary and Appendix C the consolidated list of consultation questions.

2. How to respond to this consultation

We invite responses by 16th October 2026. Please send responses by email to consultation@ectel.int

To help us analyse responses, please answer by reference to the question numbers used in this document (Q1 to Q15, consolidated in Appendix C), give reasons for your views and provide supporting evidence where available. You do not need to answer every question.

2.1. Confidentiality and publication

We intend to publish responses to this consultation. If your response contains material you consider confidential, please submit a confidential annex together with a non-confidential version suitable for publication and explain why the material is confidential. We may not be able to accept blanket claims of confidentiality over a whole response, and we cannot promise confidentiality beyond what our disclosure obligations allow.

2.2. Next steps

After the consultation closes we will consider all responses and publish a decision document that summarises the responses received, sets out our decisions and explains the reasons for them. We expect to publish the decision document once it has been approved by ECTEL's Board and Council and thereafter submitted to member states for adoption.

3. Background to the review

In this section we set out the three facts that motivate the review: the age of the current schedule, ECTEL's financial position, and the lack of harmonisation across Member States. We then state the objectives that have guided our proposals.

3.1. The fee schedule dates from 2006

The annual spectrum fee schedules were last comprehensively reviewed in 2006, with various amendments since. Nominal fees fixed two decades ago no longer reflect either the value of the spectrum in use or the cost of managing it. For example, cumulative consumer price inflation in Saint Lucia between 2006 and 2024 exceeded 37%.[3] The telecommunications sector has, in effect, enjoyed an extended discount on spectrum access relative both to the value of the spectrum and to the cost of providing spectrum management services.

3.2. Fees have not kept pace with the cost of spectrum management

ECTEL receives no external financing and the spectrum fees paid by licensees are the means by which the spectrum management, licensing, monitoring and policy functions provided to the sector are funded. The cost of those functions has risen since 2006, with the growing complexity of the task and the emergence of new services seeking access to spectrum, while the fees that fund them were largely set in 2006 and have not kept pace. While ECTEL's costs and revenues are confidential, we note that the gap between the two is one reason fees need to be revised.

3.3. Fees are not harmonised across Member States

Fees for identical services sometimes differ across the five Member States. For example, while the flat IMT fee per paired MHz is nominally identical in every state, it translates into an implied price per MHz/POP that varies by a factor of nearly four (4), from XCD0.06 per MHz/POP in Saint Lucia to XCD0.21 in St Kitts and Nevis. Harmonised structures reduce administrative burden, remove scope for regulatory arbitrage, support cross-border network planning and give consistent investment signals.

3.4. Objectives of the review

Four objectives have guided our proposals, and we refer back to them throughout this document:

1. **Efficient use and allocation:** spectrum should generally go to those who value it most, without pricing that leaves it idle;
2. **Technology neutrality:** fees should not bias technology choices or network design;

[3] Source: https://data.worldbank.org/indicator/FP.CPI.TOTL?locations=LC

3. **Affordability:** fees should primarily recover administrative costs, reflecting opportunity cost only where demand exceeds supply; and
4. **Harmonisation:** common structures and methods across Member States, with calibrated national parameters where justified.

4. Pricing principles and benchmarking methodology

In this section we explain why different services receive different pricing treatments and we summarise the benchmarking methodology behind the proposed fee levels.

4.1. Economic value of spectrum rights

ECTEL has no mandate to raise significant revenue through annual administrative fees. However, in order to ensure the efficient use of spectrum, fees should reflect the economic value of the spectrum licenses granted. The value of spectrum depends on factors such as the frequency band, bandwidth, propagation characteristics, geographic coverage, exclusivity and the availability of alternative bands.

IMT authorisations confer exclusive rights in internationally harmonised bands that are central to the provision of mobile services and have material economic value. We therefore set IMT fees by reference to international evidence on the value of comparable spectrum rights, with different rates for different band groups. For shared, localised or coordinated uses with more limited economic value, fees are set primarily by reference to the cost of managing the spectrum.

4.2. Overview of our approach to benchmarking

Every benchmark used in this review passes through the same standard adjustments, so that prices from different countries, years and licence terms can be compared on a like-for-like basis:

- **Normalisation:** prices are expressed in XCD per MHz per head of population (XCD/MHz/Pop), the standard unit for comparing spectrum prices across markets of different size;
- **Licence duration:** prices are converted to an annual equivalent through a net present value calculation at a 12% weighted average cost of capital (WACC), close to the regulated mobile WACC determined by the telecommunications regulator in Jamaica in 2021 and representative of the cost of capital across ECTEL Member States;
- **Inflation:** award prices are uplifted to present-day values using the awarding country's consumer price index before currency conversion;
- **Currency:** prices are converted to XCD at 2025 rates using two different sets of exchange rates: market exchange rates (FX), used in particular for the Small Island Developing States (SIDS) sub-sample of comparable economies, and purchasing power parity (PPP) rates using the Saint Lucia PPP rate for the wider international sample, to adjust for differences in income levels in a broad set of benchmark countries;
- **Competitive awards:** auction prices only reliably reveal market value when bidding is competitive, so medians are compared with and without administratively assigned or reserve-price-bound awards, and the preferred estimates lean on competitive awards;
- **Outliers:** extreme values are removed using the conservative outer fence of the box-plot method (upper quartile plus three times the interquartile range), so only extreme highs are excluded; and
- **Time trends:** international prices have generally trended downwards over the past decade. For sub-1 GHz spectrum this can be explained largely by an increase in the supply of spectrum made

available to mobile operators below 1 GHz, a factor that is not relevant for ECTEL Member States, so we place less weight on awards from the last five years for that band. For the lower mid-band, the amount of spectrum in these ranges has not increased globally, so the same supply dynamic cannot be observed and we place more emphasis on awards from the last five years.

5. IMT spectrum fees

In this section we set out our proposals for annual fees on International Mobile Telecommunications (IMT) spectrum: the bands used for mobile and, increasingly, fixed wireless broadband. We first set out the proposed band-differentiated fees, the allocation of fees across Member States and the treatment of Fixed Wireless Access. We then describe the current fee and its limitations, and summarise the international benchmark evidence and the impact on fee payers. IMT is the one service in this review priced to opportunity cost, and it accounts for a significant share of ECTEL's revenue.

5.1. Proposed fees

We propose an annual fee regime that sets fees in proportion to the relative value of the spectrum licensed. Our proposed fee schedule differentiates between band groups according to their propagation characteristics and relative economic value, expressed as a fee in XCD/MHz/Pop. Coverage spectrum below 1 GHz generally commands a premium over capacity spectrum in the mid-bands internationally, and the proposed fees reflect the same hierarchy. Table 2 sets out the proposed rates and, for illustration, the equivalent amounts per paired MHz across all five Member States.

Table 2: Proposed annual IMT spectrum fees

Band group	Current (XCD/MHz/Pop)	Current (XCD per paired MHz, all five states)	Proposed (XCD/MHz/Pop)	Proposed (XCD per MHz, all five states)*
Sub-1 GHz	0.10	100,000	0.14	150,000
Lower mid-band	0.10	100,000	0.10	105,000
Upper mid-band	n/a	n/a	0.03	30,000

**Rounded to the nearest XCD 5,000.*

We summarise below our proposed fee for each band group:

- **Sub-1 GHz: raise to 0.14**
  - Benchmarks suggests the current fees are below the market value of this spectrum. Our preferred benchmark range spans 0.12 to 0.17 XCD/MHz/Pop. It is bounded from below by the all-sample PPP median of 0.12, as there is no cut of the data with a lower median, and from above by the SIDS benchmark, reflecting the importance and scarcity of coverage spectrum in similar economies. The inflation-adjusted 2006 fee is also 0.14. These bands are the coverage layer of every network. Moreover, supply is limited and propagation is superior. Prices for sub-1 GHz spectrum have generally trended down internationally over the past decade, but this is driven largely by new supply (600, 700 and 800 MHz releases) in larger markets, a factor that is not yet relevant for ECTEL Member States;
- **Lower mid-band: hold at 0.10**

  - Current fees are broadly in line with international benchmarks for lower-mid band spectrum. Our preferred benchmark range spans 0.05 to 0.14 XCD/MHz/Pop. The PPP median of 0.10 sits in the middle of the range and the SIDS benchmark of 0.05 sits at the lower end, just above the lower quartile of the international sample. The inflation-adjusted current fee sits at the top of the range, which is why a straight inflation adjustment would risk over-pricing this band. We therefore propose to keep the fee for lower-mid band spectrum at the current level; and

- **Upper mid-band: introduce a new tier at 0.03**
  - Benchmark medians are 0.03 internationally and 0.02 in SIDS. The current uniform fee is much higher, and charging it for upper mid-band spectrum would risk leaving a lot of this spectrum unassigned, ultimately stifling the development of mobile networks in ECTEL Member States and so the quality of mobile services offered to consumers. The tier is a low, pro-investment rate priced to invite future assignment, including for 5G.

Question 1: Do you agree that annual IMT spectrum fees should be differentiated by band group, at XCD0.14/MHz/Pop for sub-1 GHz spectrum, XCD0.10/MHz/Pop for lower-mid band spectrum, and XCD0.03/MHz/Pop for upper-mid band spectrum? Please provide reasons and any supporting evidence.

5.2. Current fees

The current fee is XCD20,000 per paired MHz per Member State, subject to a minimum annual fee of XCD300,000 per licensee (or, equivalently, XCD300,000 for the first 2x15 MHz). The mobile operators licensed in the Member States hold spectrum in the 700, 850 and 900 MHz bands (sub-1 GHz) and the PCS and AWS bands (lower-mid band). No upper-mid band spectrum has yet been assigned in any ECTEL Member State for IMT (though some has been assigned for FWA).

The reasons we deem that IMT fees need updating are as follows:

- The current fee schedule makes no adjustment for population. However, it is well-established that the value of a spectrum license scales with the population a covered. Currently, every Member State charges the same absolute fee per MHz, so the implied price per MHz-POP varies almost 4x across states (Table 3);
- The current fee schedule makes no distinction between bands. Scarce sub-1 GHz coverage spectrum and more plentiful mid-band capacity spectrum carry the same price, despite these bands having very different propagation characteristics and levels of scarcity; and
- The current fee levels no longer reflect the value of a license today. Fees were last reviewed in 2006. Yet, as shown in *Round-by-Round: Learnings from the First 35 Years of Spectrum Auctions*, and other sources, spectrum prices have varied significantly over the last 20 years.[4]

[4] https://www.nera.com/insights/publications/2024/round-by-round-.html?lang=en

Table 3: Current IMT fees normalised by population (15 paired MHz at the XCD300,000 minimum, 2024 populations)

Member State	Paired MHz	Population	XCD annual	XCD/MHz/Pop
Dominica	15	66,205	300,000	0.15
Grenada	15	117,207	300,000	0.09
St Kitts and Nevis	15	46,843	300,000	0.21
Saint Lucia	15	179,744	300,000	0.06
St Vincent and the Grenadines	15	100,616	300,000	0.10

5.3. Allocating fees across Member States

The proposed rates determine a five-state fee total. That total can be allocated across Member States in two ways, and we are consulting on the most appropriate choice:

- **Population basis:** each state charges the rate applied to its own population, so the fee per MHz differs across states in proportion to the population served. Under this approach, fees per MHz-POP would be the same across Member States, but fees per MHz would differ; and
- **Equal fifths:** the five-state amount is divided equally, preserving a uniform fee per MHz in every state as today (equivalent to the rate applied to one fifth of the five-state population). This avoids state-level differences in nominal fees and is consistent with current practice, but it means prices per MHz-POP in Member States will continue to differ, as illustrated in Table 3.

Total fees increase under both approaches, but remain below cumulative inflation of 37.8% since 2006. Hence, the increase in fees is below inflation. The distributional difference between the approaches is, however, significant, and we invite licensees to comment on their views.

Question 2: The five-state fee total can be allocated across Member States either in proportion to each state's population or in equal fifths, preserving a uniform fee per MHz in every state as now. Which basis do you favour, and why?

5.4. Treatment of Fixed Wireless Access

We propose that Fixed Wireless Access (FWA) assignments in IMT bands be charged under the IMT fee schedule, rather than a under the fixed-links schedule as today. FWA operators use the same high-value, exclusive, high-power spectrum as IMT users. Charging it as backhaul would understate its opportunity cost and distort the incentives for efficient use of this spectrum. Applying the same fees as for IMT ensures that comparable spectrum use faces comparable fees, regardless of whether the service is provided on a mobile or a fixed wireless basis. This is in line with the principle of technology neutrality.

Question 3: Do you agree that Fixed Wireless Access assignments in IMT-suitable bands should be charged under the IMT fee schedule rather than the fixed-links schedule?

5.5. Minimum annual fees

Under the current fee schedule, each licensee is subject to a minimum annual IMT spectrum fee of XCD300,000, even if the fee calculated from its assigned spectrum holdings would be lower.

We propose to remove this minimum annual fee. Under the revised regime, each licensee's annual IMT spectrum fee would be calculated solely based on:

- the amount of spectrum assigned to the licensee in each frequency band group; and
- the applicable rate for each frequency band group.

The proposed band-specific rates are intended to reflect the relative value of the spectrum assigned. Applying a separate minimum fee would weaken this relationship by requiring some licensees to pay an amount that is not determined by their actual spectrum holdings or the applicable band-specific rates. It could also create a disproportionate burden for licensees with smaller assignments and reduce the transparency of the revised fee structure.

Removing the minimum fee would ensure that all IMT spectrum fees are calculated consistently based on their applicable fees per MHz-Pop.

Question 4: Do you agree that the existing minimum annual IMT spectrum fee of XCD300,000 per licensee should be removed, so that each licensee's annual fee is determined solely by its assigned spectrum holdings? Please provide reasons and any supporting evidence.

5.6. International benchmarks

We summarise below the benchmark evidence from annual fee benchmarks in comparable countries. We present one set based on benchmarks of annual fees in SIDS countries, and a second set based on a broader set of CARICOM country annual fee benchmarks. The broader set of international award benchmarks is presented in Sections 5.6.4-5.6.6.

5.6.1. Caribbean annual fee benchmarks

In the Bahamas, the regulator (URCA) sets annual cellular mobile spectrum fees by the formula XCD35,043 x bandwidth in MHz x time factor x frequency band factor, where the time factor is 1 for an annual authorisation and all mobile licences are treated as nationwide, so that the effect of population is captured by the constant term. The frequency band factor falls as frequency rises, as set out below.

Table 4: IMT frequency band factors: Bahamas

Frequency	Frequency band factor
0 to 960 MHz	1
960 to 2,200 MHz	0.5
2.2 to 6.7 GHz	0.05

6.7 to 30 GHz	0.01
Above 30 GHz	0.005

In Jamaica, the regulator (SMA) applies a per-band schedule. The per-MHz prices shown represent the cost of a nationwide licence, assuming a population of 2.9 million.

Table 5: IMT spectrum fees: Jamaica

Band	Price per MHz per population (USD)	Price per MHz (USD)	Price per MHz per population (XCD)	Price per MHz (XCD)
700 MHz	0.024	69,600	0.065	187,920
850 MHz	0.013	38,280	0.035	103,356
900 MHz	0.012	34,800	0.032	93,960
1800 MHz	0.010	27,840	0.027	75,168
1900 MHz	0.012	34,800	0.032	93,960
AWS	0.017	48,720	0.046	131,544

In Trinidad and Tobago, fees for cellular mobile spectrum licences in the 216 to 2,200 MHz band are XCD215,062 per MHz pair.

5.6.2. CARICOM country annual fee benchmarks

In addition to the Caribbean benchmarks discussed above, we reviewed annual IMT spectrum fee schedules across a broader set of CARICOM Member States and Associate Members where public, comparable fee information is available. This expanded sample provides a regional cross-check against the proposed ECTEL fee levels, as it captures the fee levels applied by similar administrations with comparable market scale, geography and regulatory objectives.

For comparability, we convert each benchmark into an annual XCD/MHz/Pop figure for a representative 10 MHz nationwide licence. We group the results into the same frequency categories used for the proposed fee structure: sub-1 GHz, lower mid-band, and upper mid-band spectrum. Table 6 below displays the fee formulae/level and the representative fees for each benchmark country.

Table 6: CARICOM annual IMT fee benchmarks

Country	Fee formula/level	Sub-1 GHz 10 MHz fee (XCD/MHz-POP)	Lower mid-band 10 MHz fee (XCD/MHz-POP)	Upper mid-band 10 MHz fee (XCD/MHz-POP)

Haiti[5]	BLR national coverage annual assigned-frequency fees: <806 MHz = USD 11,500/MHz duplex/year; 824-960 MHz = USD 8,500/MHz duplex/year; 1400-2170 MHz = USD 6,400/MHz duplex/year; 2300-2700 and 3300-3800 MHz = USD 1,580/MHz simplex/year	0.001	0.001	0.000
Barbados[6]	Annual electromagnetic spectrum fee for exclusive-use frequencies >=1 MHz: BBD 20,000 for first MHz plus BBD 500 per subsequent MHz or part thereof. Spectrum fee only (ignored annual operating fee)	0.012	0.012	0.012
Suriname[7]	Mobile spectrum annual fees per MHz: 700 MHz = USD 5,511; sub-1 GHz = USD 4,393; super-1 GHz = USD 1,107; 2500 MHz = USD 6,293; 3500 MHz = USD 6,105	0.023	0.005	0.027
Belize[8]	Mobile Cellular annual frequency authorisation fee: BZD 10,000/MHz for <1,000 MHz; BZD 7,500/MHz for 1,000-3,000 MHz; BZD 5,000/MHz for >3,000 MHz to <=3,800 MHz	0.032	0.024	0.020
BVI[9]	TRC BVI Modified Invitation to Apply for the 700 MHz, 1900 MHz and AWS-1 Spectrum Award states annual spectrum fees for the offered public mobile spectrum are USD 1,400/MHz for 700 MHz, 1900 MHz and AWS-1	0.119	0.119	-
Curacao[10]	Public mobile network access-frequency annual fees: D-AMPS/GSM/CDMA-I95 2G = ANG 6,000/MHz/year; CDMA-2000/UMTS	0.126	0.126	0.126

5 https://conatel.gouv.ht/node/514

6 https://www.barbadoslawcourts.gov.bb/assets/content/pdfs/consolidatedlaws/subsidiarylegislationofbarbados/Telecommunications%28LicenceFees%29Regulations%2C2003Cap282B%27C.pdfhttps://www.barbadoslawcourts.gov.bb/assets/content/pdfs/consolidatedlaws/subsidiarylegislationofbarbados/Telecommunications%28LicenceFees%29Regulations%2C2003Cap282B%27C.pdf

7 https://www.tas.sr/media/1170/tarievenstelsel-tas.pdf

8 https://www.nationalassembly.gov.bz/wp-content/uploads/2024/10/SI-No.-76-of-2024-Belize-Telecommunications-Licensing-Classification-Authorisation-and-Fee-Structure-Amendment-Regulations-2024.pdf

9 https://trcwebapp.aress.net/wp-content/uploads/2020/12/Modified-ITA-for-Spectrum-Award-2016-Final.pdf

10 https://rac.cw/wp-content/uploads/2021/10/aangepaste-versie-voorstel-tarieven-2008-3-eindversie.xlsx-Sheet1.pdf

	W-CDMA/WiMAX 3G = ANG 12,000/MHz/year. Also lists ANG 6/month per connected SIM for spectrum use			
Turks and Caicos[11]	Spectrum licence annual fees for Public Mobile Telecommunications Frequency: 800 MHz = USD 30,000/10 MHz paired; 900 MHz = USD 30,000/10 MHz paired; 1800 MHz = USD 40,000/10 MHz paired; 1900 MHz = USD 78,000/5 MHz paired; 700 MHz Prime = USD 60,000/22 MHz paired; AWS-1 = USD 5,000/5 MHz paired; 2500 MHz = USD 30,000/20 MHz paired or unpaired	0.170	0.227	0.085
Bermuda[12]	Government Fees Amendment Regulations 2018 set a reference fee of BMD/USD 13,000 per MHz per year, with band multipliers: 700 MHz = 100%; 850 MHz = 100%; 1900 MHz = 78%; AWS-1 = 39%; AWS-3 = 39%; 2500 MHz = 33%; 3500 MHz = 3%	0.559	0.290	0.101
Anguilla[13]	700 MHz Mobile & IMT 6 MHz paired = EC$1,200,000; 800/850 MHz IMT 6 MHz paired = EC$1,200,000; 1900 MHz Mobile & IMT 5 MHz paired = EC$1,000,000	1.347	1.347	-

The CARICOM fee schedules generally recognise the same broad economic hierarchy used in our proposed ECTEL framework: sub-1 GHz spectrum is often priced above lower mid-band spectrum, which in turn is often priced above upper mid-band spectrum. This reflects the stronger propagation characteristics, coverage role and scarcity value of lower-frequency mobile spectrum. However, this pattern is not universal. Some countries apply flat per-MHz fees across all mobile bands, while others use band-specific schedules that produce relative prices that are difficult to justify on economic grounds.

For example, in Turks and Caicos, the 1900 MHz fee is almost twice the 1800 MHz fee, even though the two bands have broadly similar propagation and mobile capacity characteristics. Similarly, Bermuda applies a 33% base fee multiplier to 2500 MHz spectrum but only a 3% base fee multiplier

[11] https://telecommission.tc/wp-content/uploads/2021/04/Telecommunications-Fee-Structure-Regulations-2020.pdf

[12] https://www.bermudalaws.bm/Laws/Annual%20Law/Statutory%20Instruments/2018/Government%20Fees%20Amendment%20Regulations%202018

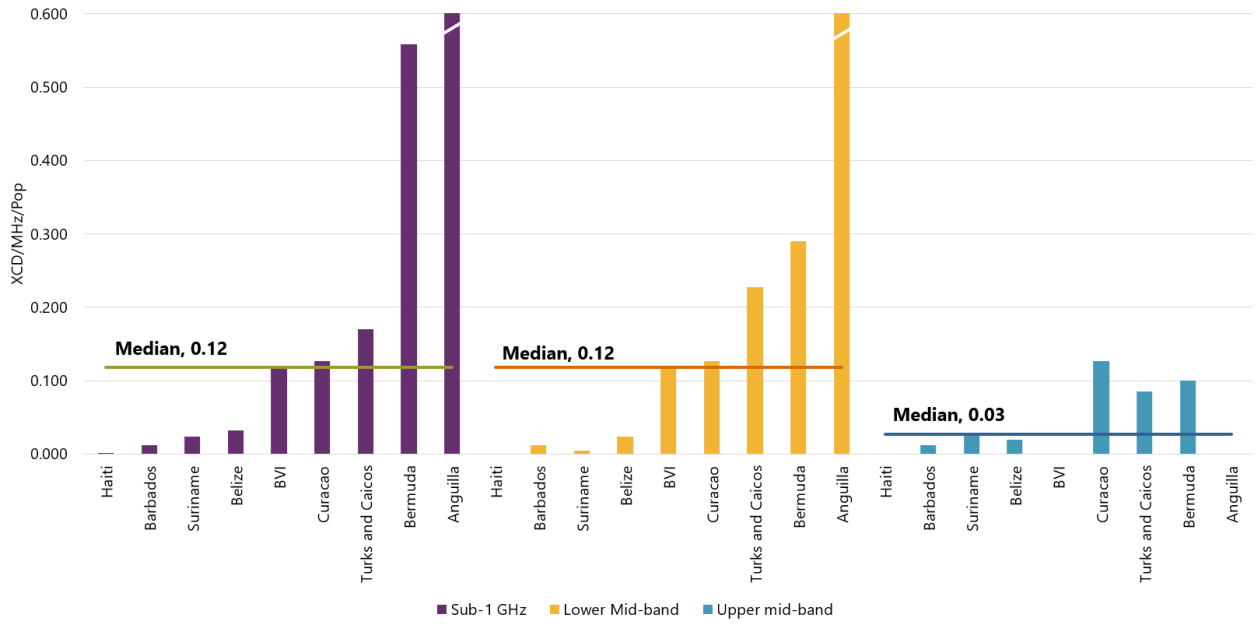
[13] https://pucanguilla.com/wp-content/uploads/2018/05/T006-Telecommunications-Spectrum-Fee-Reg.pdf

to 3500 MHz spectrum. While some differentiation between 2.5 GHz and 3.5 GHz may be appropriate, the scale of this difference is difficult to reconcile with the relative economic value of these bands in modern mobile networks.

These inconsistencies reinforce the importance of using the CARICOM benchmarks as a regional cross-check rather than adopting any individual country's fee schedule. Overall, however, the expanded CARICOM benchmark set supports the reasonableness of the proposed ECTEL IMT fee schedule.

As shown in the figure above, median annual fees from the CARICOM benchmark sample are XCD0.12/MHz/Pop for sub-1 GHz spectrum, XCD0.12/MHz/Pop for lower mid-band spectrum, and XCD0.03/MHz/Pop for upper mid-band spectrum. These results are aligned with the proposed ECTEL fee levels of XCD0.14/MHz/Pop, XCD0.10/MHz/Pop, and XCD0.03/MHz/Pop respectively.

Figure 1: CARICOM annual IMT fee benchmarks (XCD/MHz/Pop)



Note: Bars show annualised fees for a representative 10 MHz nationwide licence in each jurisdiction. The horizontal lines mark the median fee for each band group (XCD 0.12, 0.12 and 0.03 per MHz-POP for sub-1 GHz, lower-mid band and upper-mid band respectively).

5.6.3. International award benchmarks: methodology

Benchmarking is used to estimate the market value of spectrum. This is the price that would result from a competitive allocation process such as an auction.

We apply the following standard adjustments to license prices:

- **Bandwidth and population**: Spectrum prices are presented in a monetary amount per MHz per head of population. This quantity represents the cost of covering one member of the population with 1 MHz of spectrum and is a common unit for reporting spectrum prices;

- **License duration and material annual license fees**: Spectrum prices are usually adjusted for differing license terms using a Net Present Value (NPV) calculation. An NPV calculation allows us to compute the cost that mobile operators face at one moment in time, while looking at all future payment streams. Regardless of how the capital is used until the fee must be paid, this requires us to discount future payments. We do so by using a Weighted Average Cost of Capital (WACC). This discount can either be interpreted as the growth of the capital while not paid to the regulator, or else reflect the blended cost of capital from all sources. This interpretation implies that any cash spent will need to be financed using debt or equity, which comes at a cost. The further in the future the payment, the smaller the current NPV of the fee.

  We apply the following formula:

$$NPV = \frac{Spectrum\ Fee_t}{(1 + WACC)^t}$$

  We use a standard WACC of 12% for these calculations throughout. This is close to the regulated mobile WACC determined by the telecommunications regulator in Jamaica in 2021 and we believe it is representative of the cost of capital across ECTEL Member States.[14] The total cost of spectrum ownership is calculated as the NPV of the upfront fee and all annual license fees (if these are material). The NPV is then turned into an NPV-equivalent annuity payment over the license duration. To arrive at a benchmark price for the benchmarked duration, the annuity is discounted over the desired license duration. In all figures and tables in the following, we assume a license duration of 1 year to help us better understand the annual license fees;

- **Inflation**: License prices in local currency units in the year of award are adjusted for inflation to yield present-day prices using local country consumer price indices (CPI). We adjust all prices to present-day prices using local country CPI before adjusting for exchange rates to better capture economic trends in the country of award.; and

- **Exchange rate**: License prices in present-day local currency units are converted to XCD using 2025 exchange rates. We perform the exchange rate conversion using both traditional foreign exchange (FX) rates and purchasing power parity (PPP) adjusted exchange rates. Converting license prices using FX rates allows for easy comparison of absolute, unadjusted price differences across countries. FX-adjusted license prices are appropriate for a benchmark sample that consists of countries that are similar to the benchmark country. In this case, we make FX-adjustments for ECTEL countries and other similar SIDS countries. If the sample consists of a diverse set of countries, in this sample non-SIDS countries, PPP-adjusted prices are more appropriate. PPP rates adjust for differences in purchasing power between countries and provide a fairer comparison of license prices across countries. PPP-adjusted license prices are appropriate when assessing how license prices in high-income countries compare to prices in low-income countries, taking into account the cost of living in each country. We use the PPP rate for St Lucia throughout the benchmarking exercise.

These adjustments give us comparable license prices in XCD/MHz/Pop for an annual fee in ECTEL member states.

[14] Office of Utilities Regulation, 2020, Estimate of the Weighted Average Cost of Capital for Telecommunications Carriers, Link.

In the following subsections, we investigate a number of additional factors:

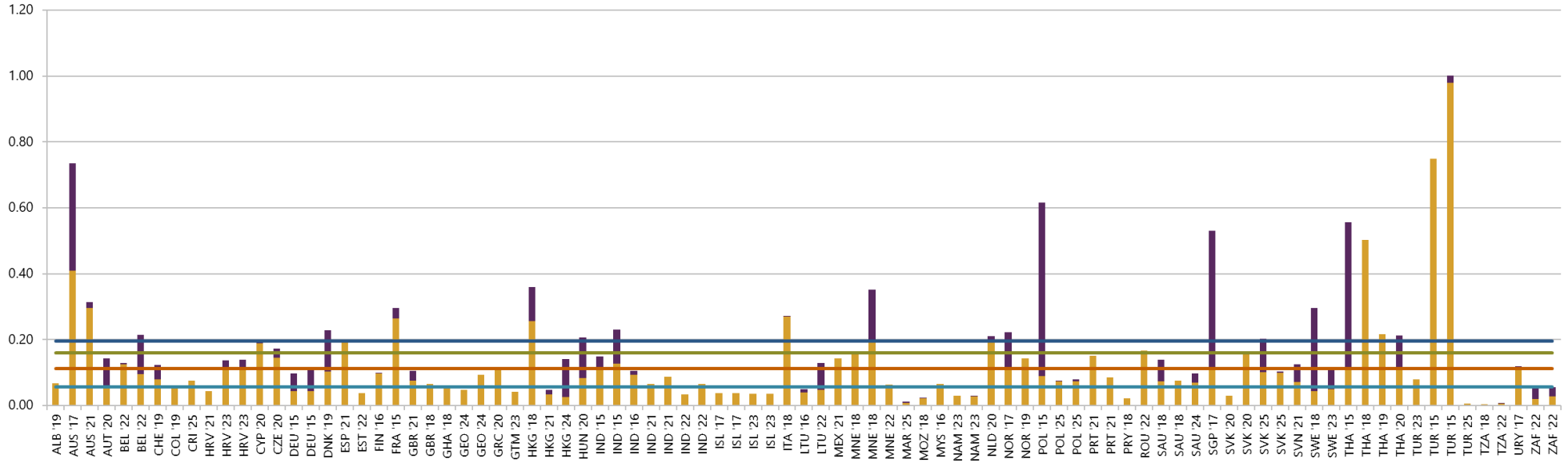
- **Spectrum characteristics**: The specific propagation characteristics and the use of the spectrum should be considered. We do this by relying on samples that include similar bands based on their propagation characteristics and role in mobile networks. We group bands into three categories as discussed in the following sub-section;
- **Competitive awards**: Auction prices can serve as a reliable measure of market value in scenarios where robust competition exists and the final price paid reflects the value of the marginal user (i.e., the loser with the highest value). When the final prices paid are too close to the reserve price and competition is limited, prices set in an auction may not accurately reflect the true market value. This applies unless reserve prices have been set based on market value, possibly in anticipation of limited competition. We therefore compare averages and medians across all prices in the samples against those where the final price exceeds the reserve price;
- **Similar economies.** We include a sub-sample of Small-Island Developing States (SIDS) in our analysis;
- **Socio-economic factors**: We use statistical analysis to verify whether an adjustment for socio-economic factors such as **GDP per capita** or **ARPU** is required. Generally, we should find that factors like GDP per capita and ARPU affect FX-adjusted license prices, but that most of the impact of these factors should be accounted for by using PPP-adjusted license prices; and
- **Outliers**: Other factors such as coverage obligations can also affect prices. However, it is not practical or feasible to take these into account in a reliable and systematic fashion. Instead, we will rely on statistical techniques to remove outliers. Our samples are large enough to allow us to filter out potential outliers which could be a result of costly obligations on the one hand or excessively high reserve prices on the other.

5.6.4. International award benchmarks: low-band spectrum

Full dataset

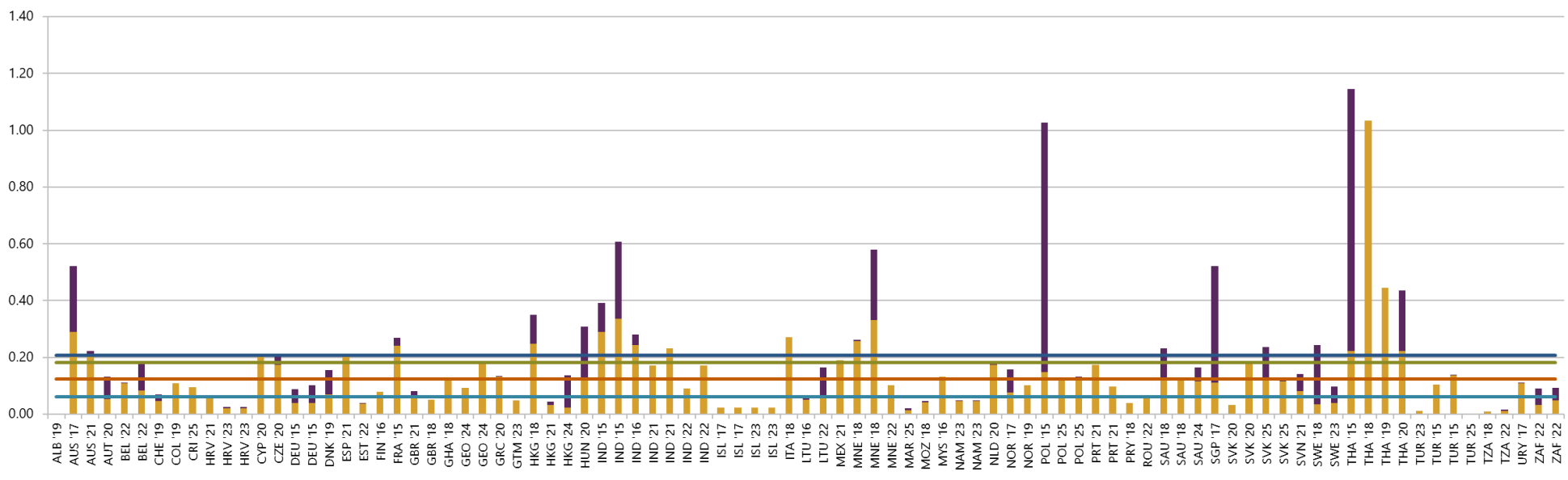
The figures below present the full dataset FX-and PPP-adjusted license prices.

Figure 2: Sub-1 GHz bands (FX)



Blue: upper quartile, Green: average, Orange: median, Light blue: lower quartile

Figure 3: Sub-1 GHz bands (PPP)



Blue: upper quartile, Green: average, Orange: median, Light blue: lower quartile

Table 7 presents summary statistics for each of the benchmark sets. For FX- and PPP-adjusted prices, the median price is lower than the mean price. This indicates that the distribution of license prices is not balanced but rather is skewed to the right. The skewness arises because the data includes a few expensive licenses, which pull the mean upwards.[15] Owing to this, we consider the median to be a more appropriate measure of central tendency in this case. To ensure the accuracy of our analysis, we will remove outliers in a subsequent section using a non-parametric technique that does not require assumptions about the distribution of the data. Specifically, we use the box-plot method, allowing us to identify and exclude outliers in a robust way.

Table 7: Summary statistics for Sub-1 GHz benchmarks

	XCD/MHz/Pop FX	XCD/MHz/Pop PPP
Upper quartile	0.20	0.21
Mean	0.16	0.18
Median	0.11	0.12
Lower quartile	0.06	0.06
# of awards	89	89

SIDS dataset

Our SIDS dataset includes the following data points:

- Jamaica: 700 MHz assignments in 2014 and 2021 as well as the reserve price for the planned 600 MHz assignment in 2025;
- Dominican Republic: 700 MHz assignment in 2021;
- La Reunion: 700 MHz assignment in 2022 and 900 MHz assignment in 2025[16];
- French Guiana: 700 MHz assignment in 2023 and 900 MHz assignment in 2025;
- Mayotte: 700 MHz assignment in 2022 and 900 MHz assignment in 2025[17];
- Martinique: 900 MHz assignment in 2025[18];
- Guadeloupe: 900 MHz assignment in 2025[19];
- British Virgin Islands: 700 MHz assignment in 2016;
- Bahamas: 700, 850 and 1700 / 2100 MHz assignment in 2015; and
- Cape Verde: 800 MHz assignment in 2011 with the updated annual fees from 2025.

[15] Note that because licence prices are bounded from below by reserve prices but can rise in an unconstrained fashion in a competitive auction, we should almost always expect the distribution of licence prices to be skewed to the right.

[16] We only include the 2x30 MHz for which operators paid a non-zero price.

[17] We only include the 2x15 MHz which attracted a non-trivial price.

[18] We omit the 700 MHz award in Martinique, as it all operators won 2x5 MHz at trivial cost.

[19] We omit the 700 MHz award in Guadeloupe as it all operators won 2x5 MHz at trivial cost.

As these SIDS countries have comparable economies to ECTEL Member States, we focus on FX benchmarks only in our analysis.

Figure 4: SIDS Sub-1 GHz benchmarks (FX)

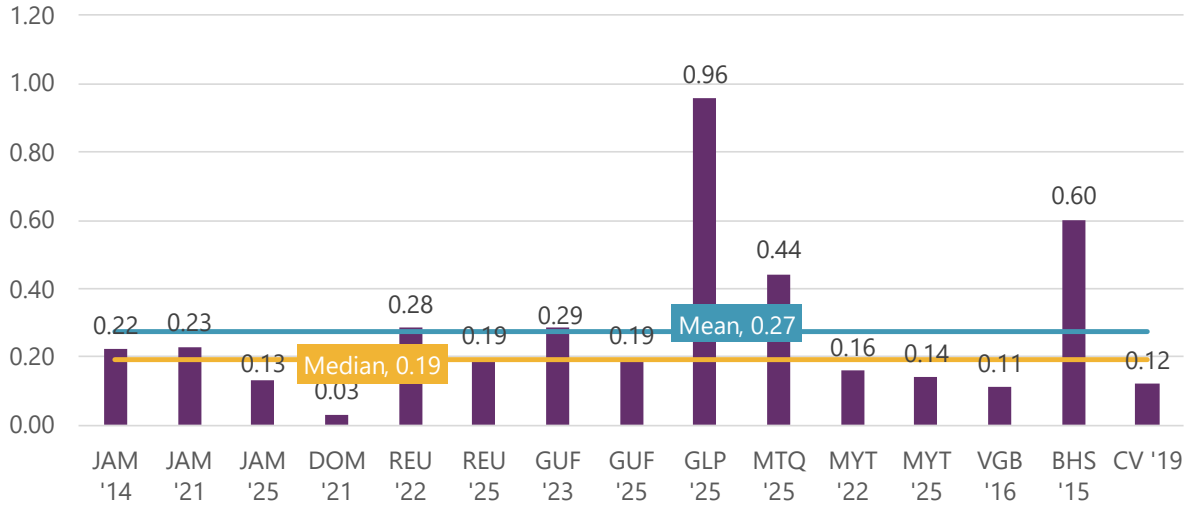


Table 8 presents summary statistics for each of the benchmark sets. Again, the median price is lower than the mean price. This indicates that the distribution of license prices is not balanced but rather is skewed to the right – in this case by the datapoint from the Bahamas.

Table 8: Summary statistics for SIDS Sub-1 GHz benchmarks

Statistic	XCD/MHz/Pop
Upper quartile	0.29
Mean	0.27
Median	0.19
Lower quartile	0.14
# of awards	15

Competitive auctions & outliers

Our distribution of prices is right-skewed, with a mean above the median. This indicates that high-priced outliers are present in our sample. We use the box plot method to identify these outliers. The box plot method identifies outliers as data points below the lower quartile minus 1.5 times the interquartile range or above the upper quartile plus 3 times the interquartile range (outer fence).[20]

In the charts below, we plot FX- and PPP-adjusted prices per MHz per pop for sub-1 GHz benchmarks. In each chart, we plot lines across the sample depicting the median (in orange), inner fence (in blue)

[20] It is common to define the upper exclusion threshold as the upper quartile plus 1.5 times the interquartile range (inner fence). We use the 3 times the IQR (i.e., the outer fence) to be more conservative in excluding high priced outliers.

and outer fence (in red). Any data points lying in the red zone above the outer fence are deemed outliers and are excluded from further analysis.

For FX-adjusted benchmarks, we obtain an outer fence of XCD0.62/MHz/Pop. We exclude two (2) awards with prices above the outer fence. For PPP-adjusted benchmarks, we obtain an outer fence of XCD0.72/MHz/Pop. We exclude two awards with prices above the outer fence.

Figure 5: Sub-1 GHz outlier identification (FX)

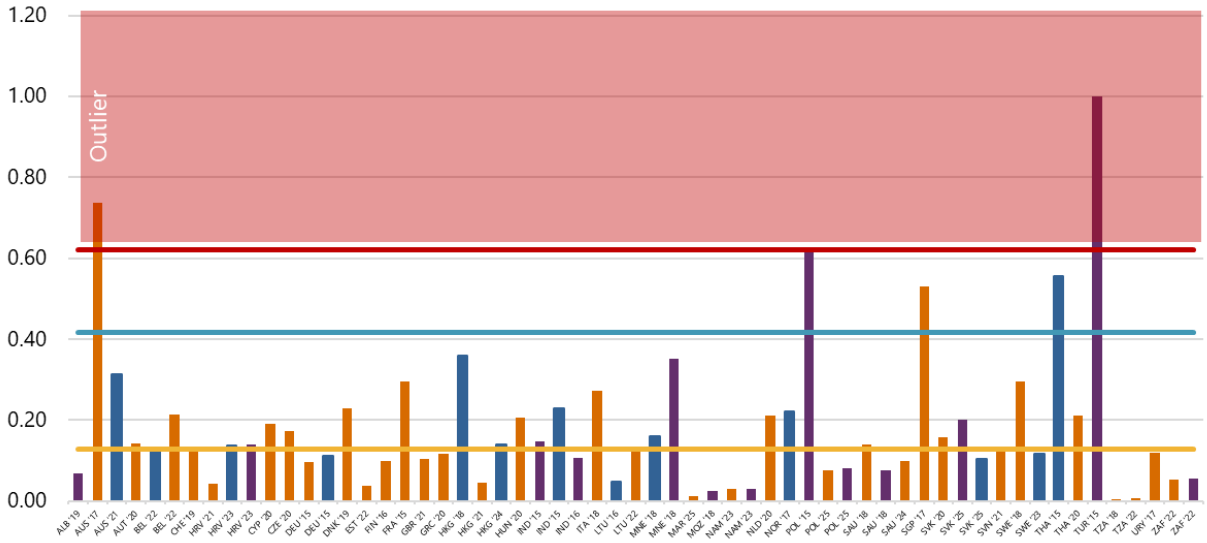
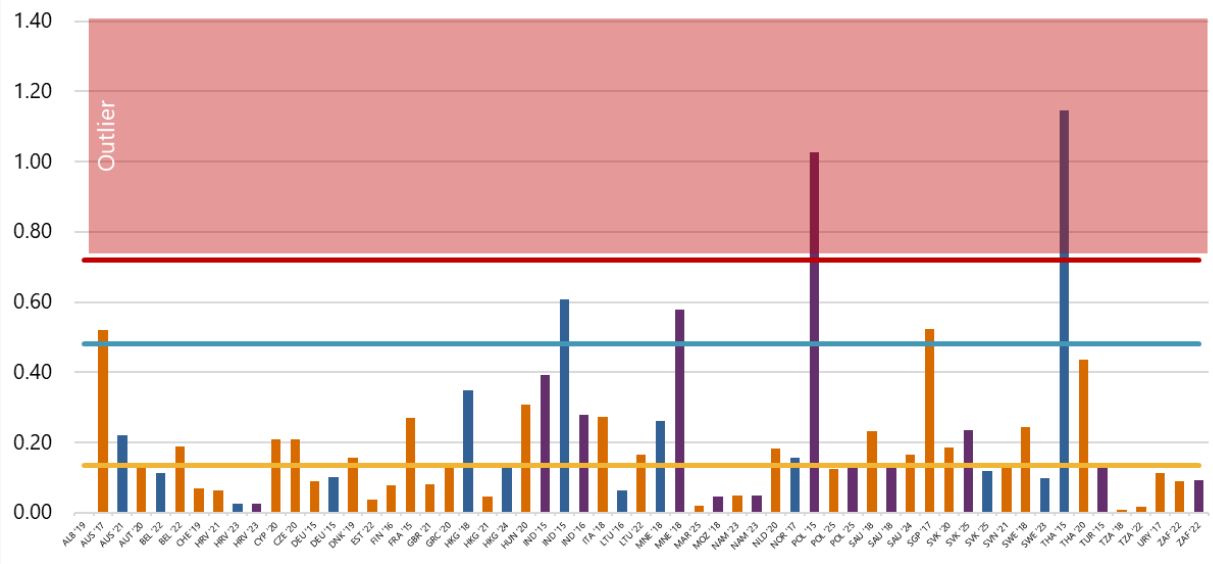


Figure 6: Sub-1 GHz outlier identification (PPP)

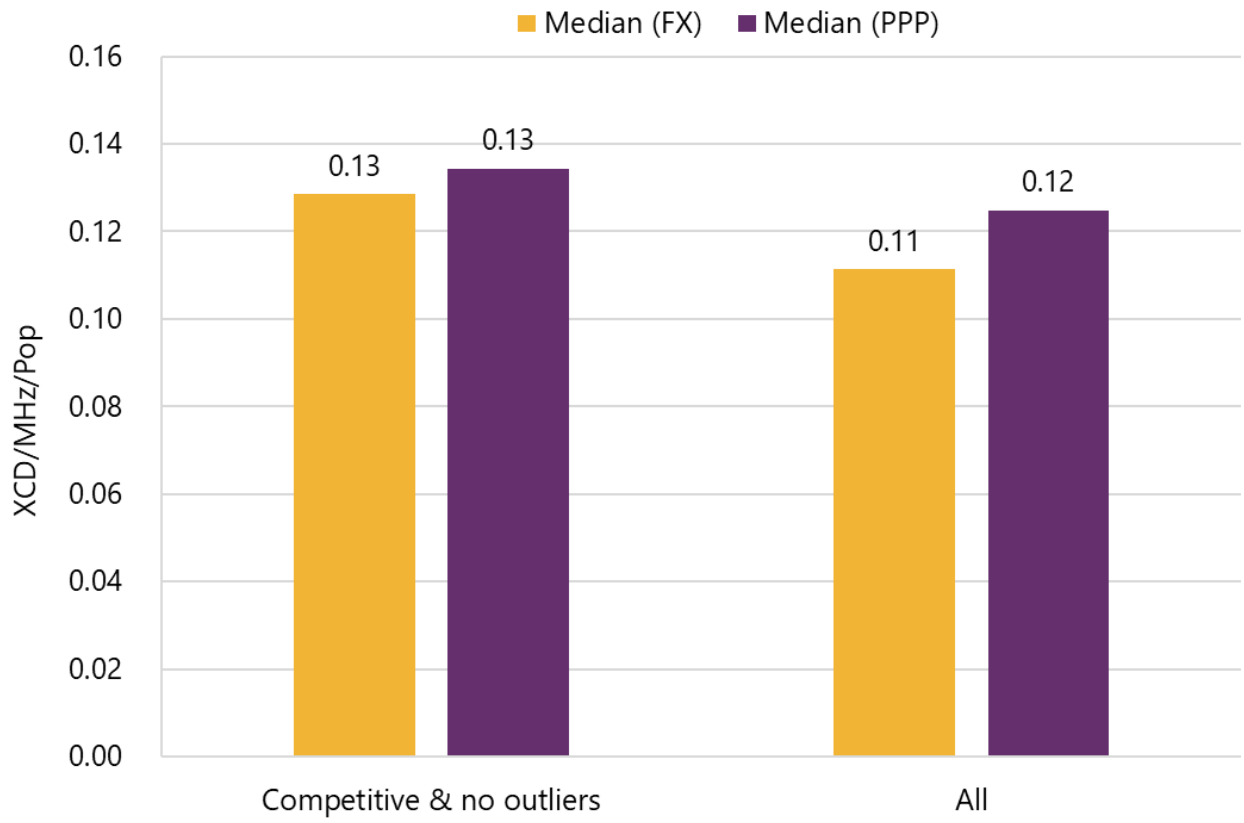


Our data set consists of spectrum prices generated by different assignment mechanisms. Some prices result from market-based mechanisms, such as auctions, while some result from administrative mechanisms, such as direct awards. Moreover, not all market-based mechanisms produce market prices. Auctions, for example, can be uncompetitive owing to high reserve prices. License prices set by competitive forces are more likely to accurately reflect the market value of the license at the time of the award. For this reason, we examine whether there is a material difference

in prices across all awards and prices in competitive awards. If there is a material difference in prices across the two sets of data, including non-competitive awards, this could produce biased results and underestimate the market value of licenses.

Figure 7 shows median prices for competitive awards only and for the overall dataset. Restricting the analysis to competitive awards results in higher median prices. This suggests that in uncompetitive awards regulators are generally conservative in setting reserve prices and that these prices are unlikely to reflect market values. In further analysis, we only include competitive awards so that our sample is likely to reflect market values.

Figure 7: Impact of excluding outliers and non-competitive awards on sub-1 GHz benchmark results



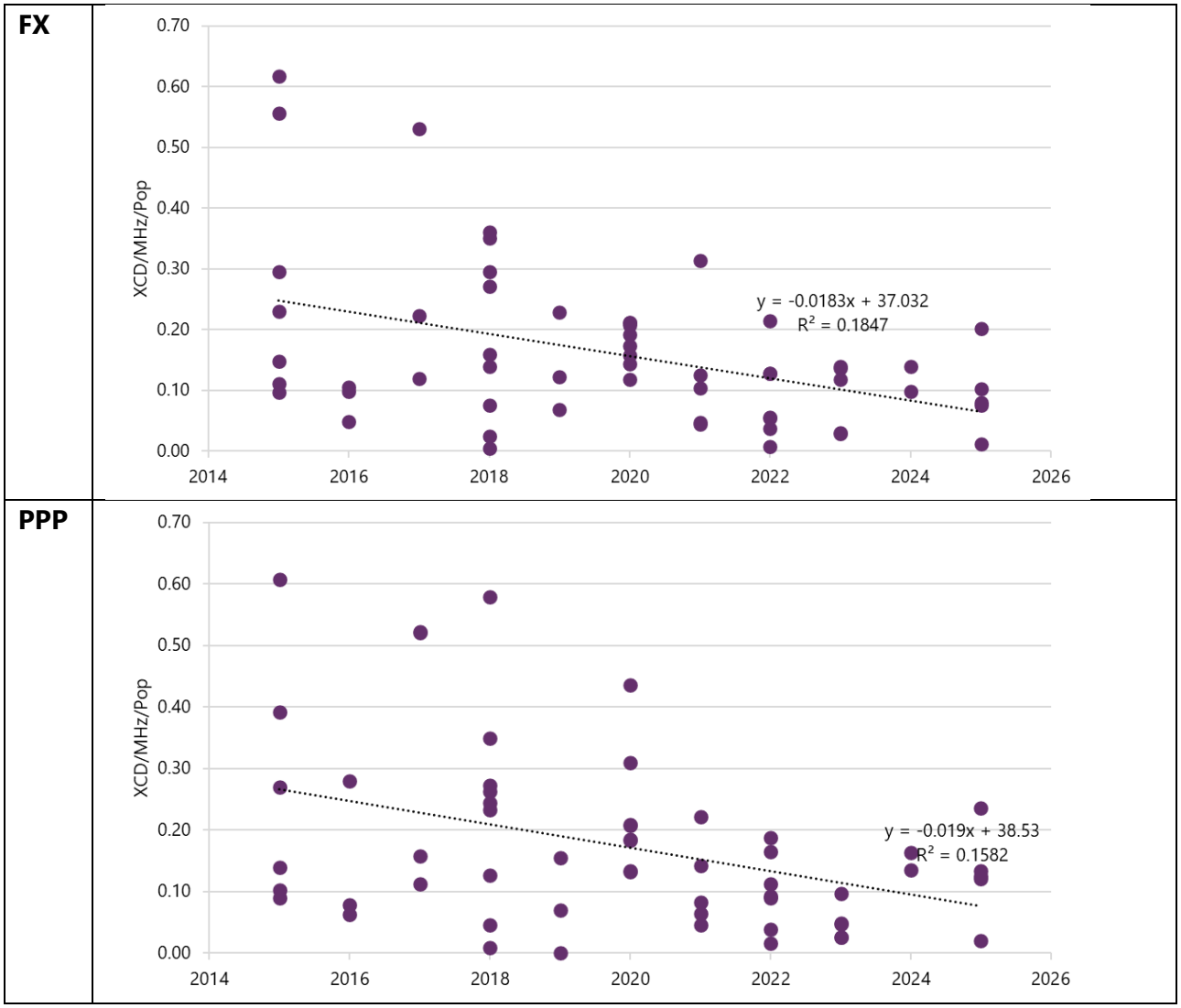
Time trend

Next, we consider the impact of the timing of awards on prices. Spectrum prices for bands below 1 GHz have generally trended downwards over the last decade. In large part, this can be explained by an increase in the supply of spectrum made available to mobile operators below 1 GHz. With more spectrum available, scarcity and prices have fallen.

The figures below plot the price of each license in our sample against the year of award. The linear regression lines show a clear downwards trend, both for FX- and PPP-adjusted prices. However, this is likely driven by the greater availability of sub-1 GHz spectrum – a factor that is not relevant for ECTEL Member States where very little sub-1 GHz spectrum can be made available.

For this reason, our final estimates of the market value of licenses will put less weight on awards from the last 5 years.

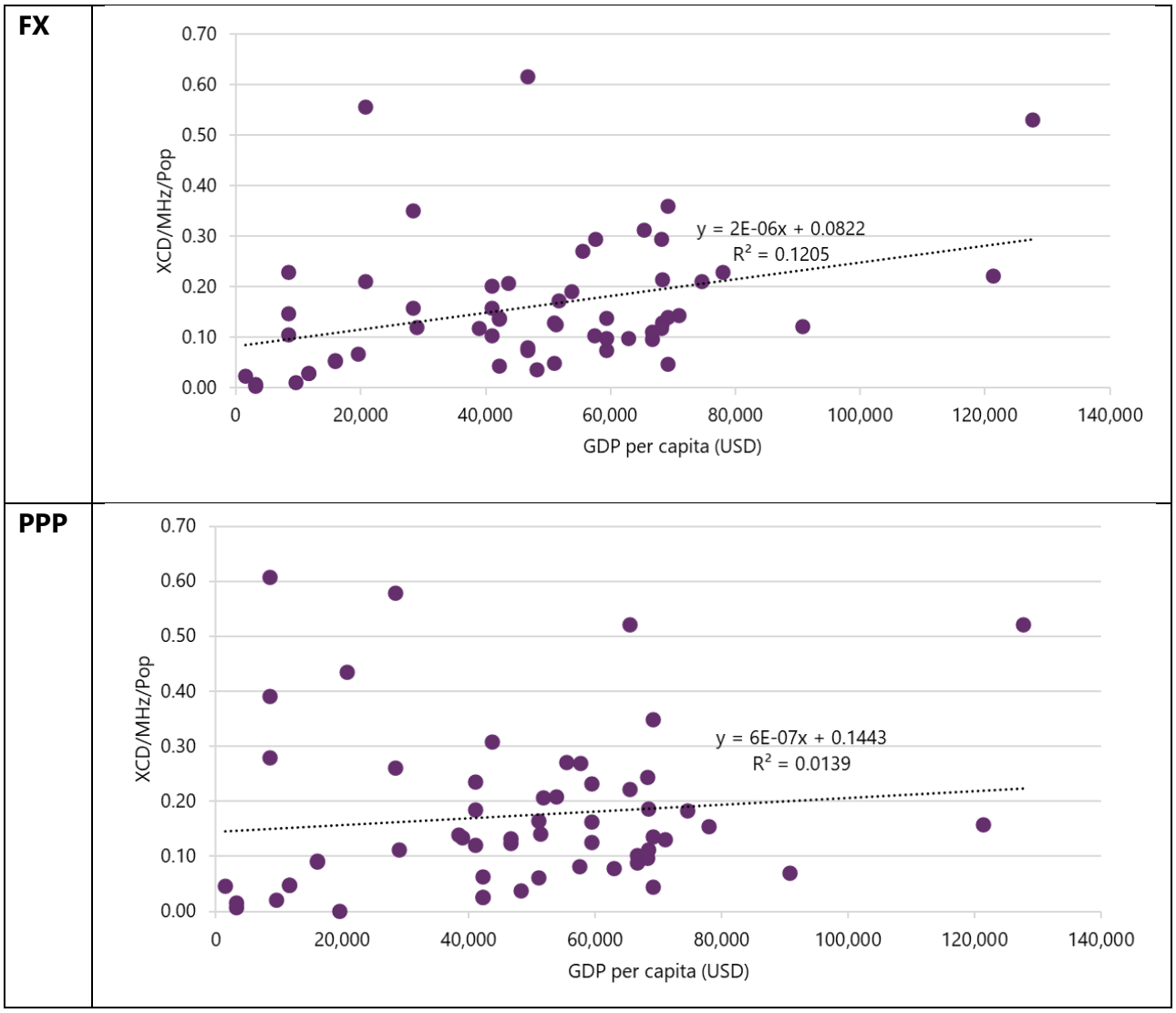
Figure 8: Sub-1 GHz prices vs year of award



Impact of GDP

Next, we consider the impact of GDP per capita in the country of award on prices. Operators in countries with higher GDP per capita benefit from stronger economic conditions that support higher revenues and result in greater investments in spectrum licenses. As the charts below show, both FX- and PPP-adjusted prices are positively correlated with GDP per capita. However, the R^2 value for the trend line of FX-adjusted prices against GDP per capita (0.12) is much higher than the R^2 value for the PPP-adjusted prices (0.01). This suggests that PPP-adjustment does well at adjusting prices for the effect of GDP per capita on license prices. For this reason, our estimates of the market value of spectrum in ECTEL Member States will place more emphasis on the PPP-adjusted prices.

Figure 9: Sub-1 GHz prices vs GDP per capita



Range of market value estimates

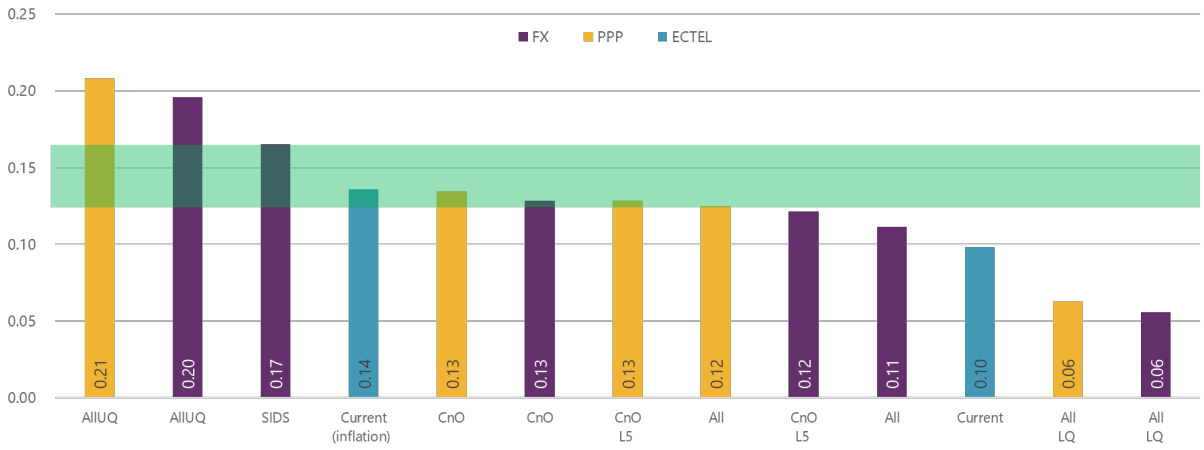
Figure 10 displays our set of estimates for the market value of sub-1 GHz spectrum. The green price band in Figure 10 shows our preferred range that spans XCD0.12-0.17/MHz/Pop.

Our preferred point estimate of XCD0.14/MHz/Pop sits in the middle of this range:

- We generally prefer the PPP benchmarks as PPP rates are better able to reflect differences in price levels between countries. This is particularly relevant for ECTEL Member States, which have a lower income level than most countries in our benchmark data set. Our analysis suggests that GDP per capita affects sub-1 GHz benchmarks with higher-income countries generally being associated with higher prices for sub-1 GHz spectrum;
- Our preferred range is bounded from above by the SIDS data point of 0.17. This is just below the upper quartile of the international dataset of 0.20. This shows the importance of sub-1 GHz spectrum in similar economies – perhaps also in part driven by the scarcity of the spectrum in SIDS countries;

- Our benchmark range is bounded from below by the 'All' PPP data point. There is no cut of the data with a lower median. This also shows that the current fees are likely below current market value; and
- We further include an inflation-adjusted current fee in our range. The current ECTEL fees were put in place in 2006 and have not been updated since. Adjusting the current fee for inflation between 2006 and 2024 increases it to 0.14.[21] This is the same as our preferred estimate of XCD0.14/MHz/Pop, providing further support for it.

Figure 10: Range of market values for sub-1 GHz in ECTEL Member States



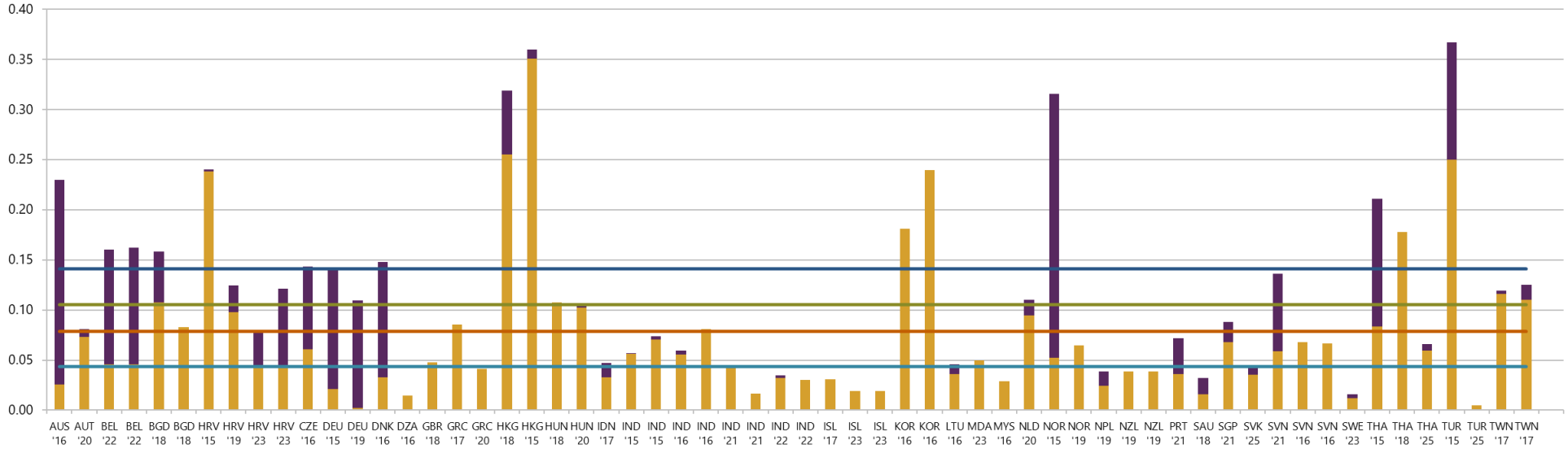
5.6.5. International award benchmarks: lower mid-band spectrum

Full dataset

The figures below present the full dataset FX-and PPP-adjusted license prices:

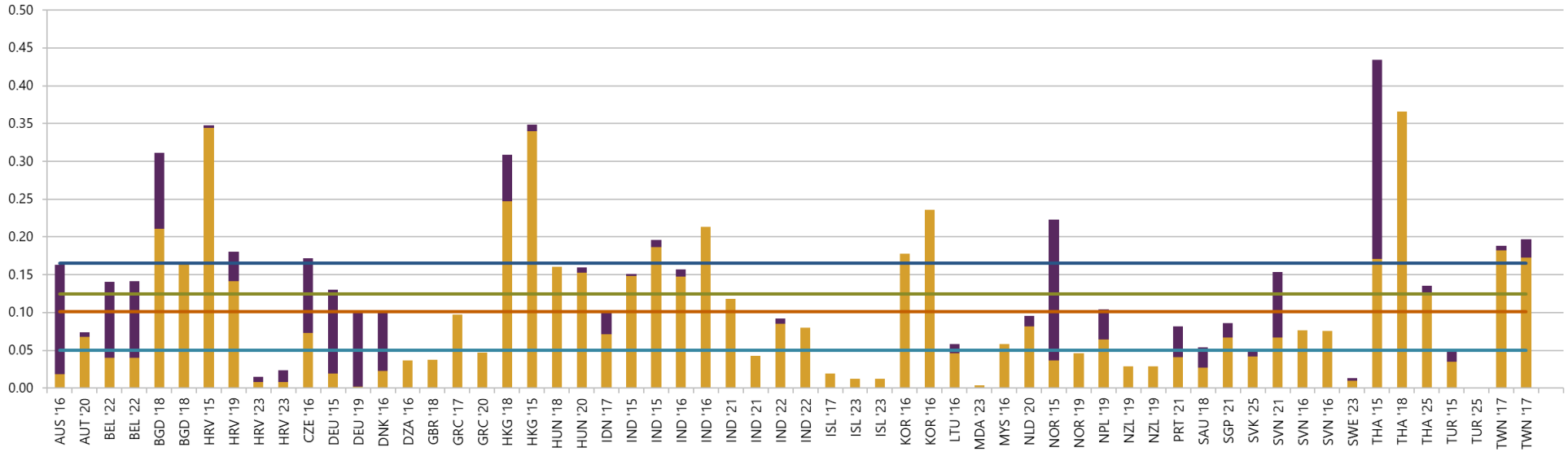
[21] We determine CPI inflation using data from the World Bank. We then use a population-weighted average across ECTEL Member States to aggregate them to an overall figure. https://data.worldbank.org/indicator/FP.CPI.TOTL?locations=LC

Figure 11: Lower mid-band spectrum benchmarks (FX)



Blue: upper quartile, Green: average, Orange: median, Light blue: lower quartile

Figure 12: Lower mid-band spectrum benchmarks (PPP)



Blue: upper quartile, Green: average, Orange: median, Light blue: lower quartile

Table 9 presents summary statistics for our lower mid-band spectrum benchmarks. For both FX- and PPP-adjusted prices, the median price is lower than the mean price. This indicates that the distribution of license prices is not balanced but rather is skewed to the right. The skewness arises because the data includes a few expensive licenses, which pull the mean upwards. Owing to this, we consider the median to be a more appropriate measure of central tendency in this case. To ensure the accuracy of our analysis, we will remove outliers in a subsequent section using a non-parametric technique that does not require assumptions about the distribution of the data. Specifically, we use the box-plot method, allowing us to identify and exclude outliers in a robust way.

Table 9: Summary statistics for lower mid-band spectrum benchmarks

Statistic	XCD/MHz/Pop (FX)	XCD/MHz/Pop (PPP)
Upper quartile	0.14	0.17
Mean	0.11	0.12
Median	0.08	0.10
Lower quartile	0.04	0.05
# of awards	60	60

SIDS dataset

Our SIDS dataset includes the following data points:

- La Reunion: 1800 MHz assignment in 2025 ;
- French Guiana: 1800 MHz assignment in 2025;
- Guadeloupe: 1800 MHz assignment and 2100 MHz assignment (both in 2025);
- Martinique: 1800 MHz assignment and 2100 MHz assignment (both in 2025);
- Saint Martin: 1800 MHz assignment in 2025;
- British Virgin Islands: PCS and AWS-1 in 2016;
- Bahamas: 700, 850 and 1700 / 2100 MHz assignment in 2015; and
- Cape Verde: 2100 MHz assignment in 2011 with the updated annual fees from 2025.

Figure 13: SIDS Lower mid-band benchmarks

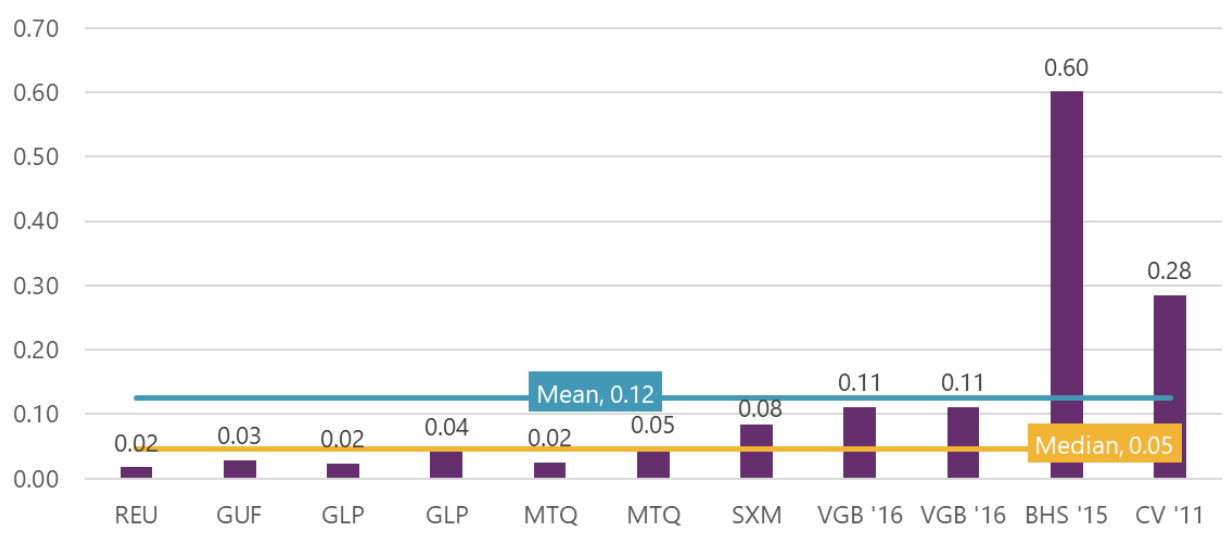


Table 10 presents summary statistics for the SIDS sample. Again, the median price is lower than the mean price. This indicates that the distribution of license prices is not balanced but rather is skewed to the right.

Table 10: Summary statistics for SIDS Lower mid-band benchmarks

Statistic	XCD/MHz/Pop (FX)
Upper quartile	0.11
Mean	0.12
Median	0.05
Lower quartile	0.03
# of awards	11

Outliers & competitive awards

The sample distribution of prices is right-skewed, with a mean above the median. This indicates that high-priced outliers may be present in our sample. We use the box plot method to identify these outliers. The box plot method identifies outliers as data points below the lower quartile minus 1.5 times the interquartile range or above the upper quartile plus 3 times the interquartile range (outer fence).

In the charts below, we plot FX- and PPP-adjusted prices per MHz per pop for lower mid-band spectrum benchmarks. In each chart, we plot lines across the sample depicting the median (in orange), inner fence (in blue) and outer fence (in red). Any data points lying in the red zone above the outer fence are deemed outliers and are excluded from further analysis.

For FX-adjusted benchmarks, we obtain an outer fence of XCD0.44/MHz/Pop. For PPP-adjusted benchmarks, we obtain an outer fence of XCD0.48/MHz/Pop. No benchmarks in our sample lie above the outer fence either for FX- or PPP-adjusted prices. We do not exclude any outlier benchmarks from our sample as a result.

Figure 14: Lower mid-band outlier identification (FX)

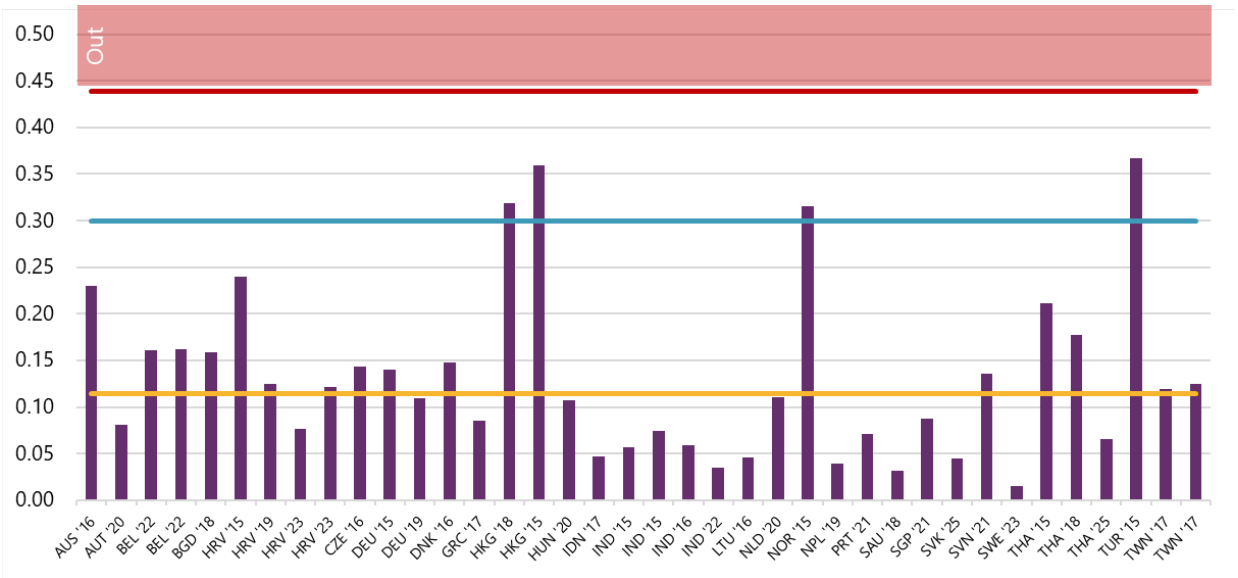
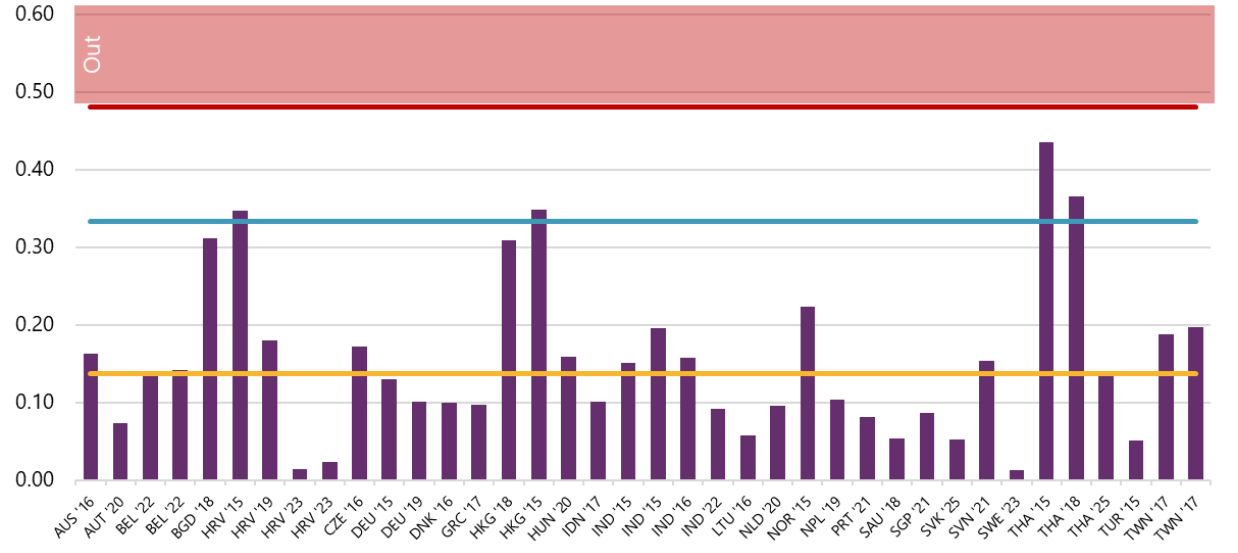


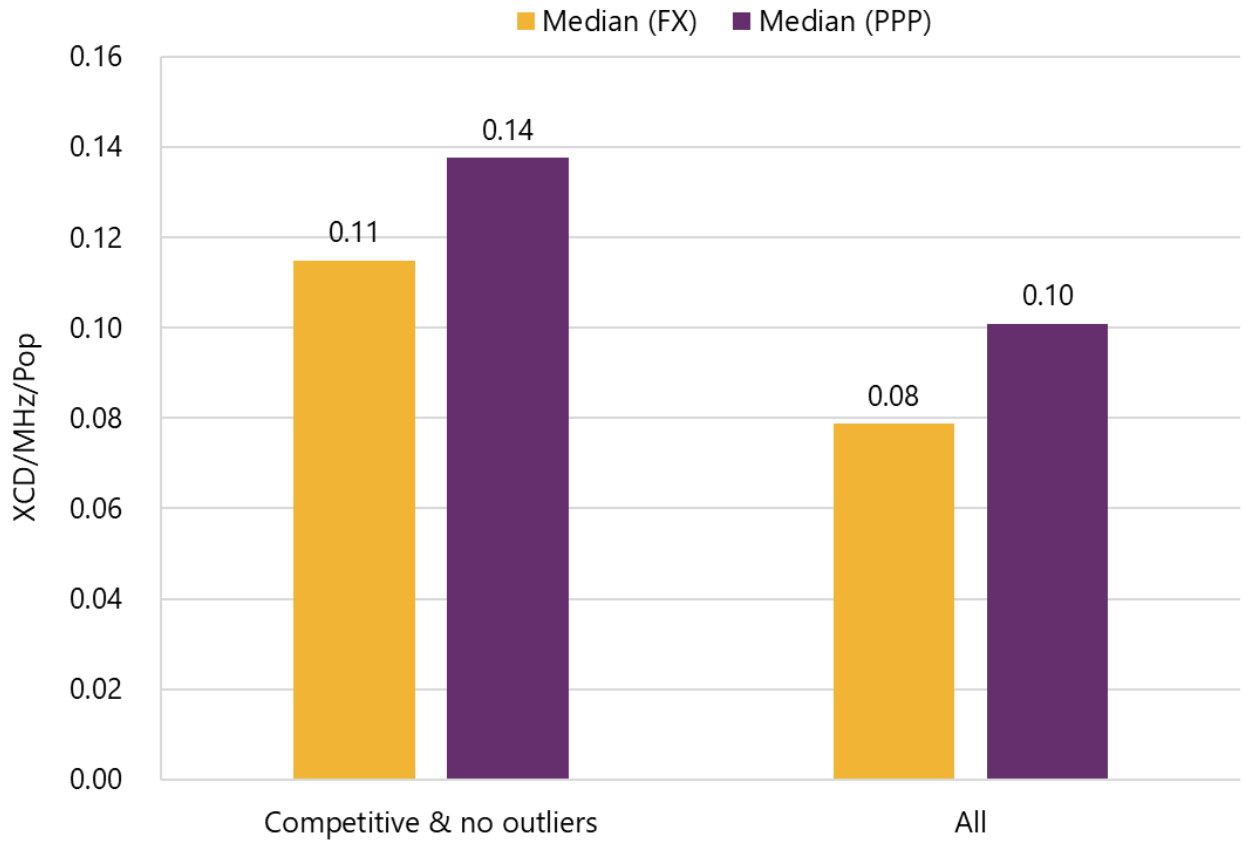
Figure 15: Lower mid-band outlier identification (PPP)



We examine whether there is a material difference in prices across all awards and prices in competitive awards for the reasons described in the previous sub-section. If there is a material difference in prices across the sample that includes all awards and the sample that includes competitive awards only, including the non-competitive awards could produce biased results and underestimate the market value of licenses.

Figure 16 shows median prices for competitive awards only and for the overall dataset. Restricting the analysis to competitive awards results in median prices that are higher for all awards.

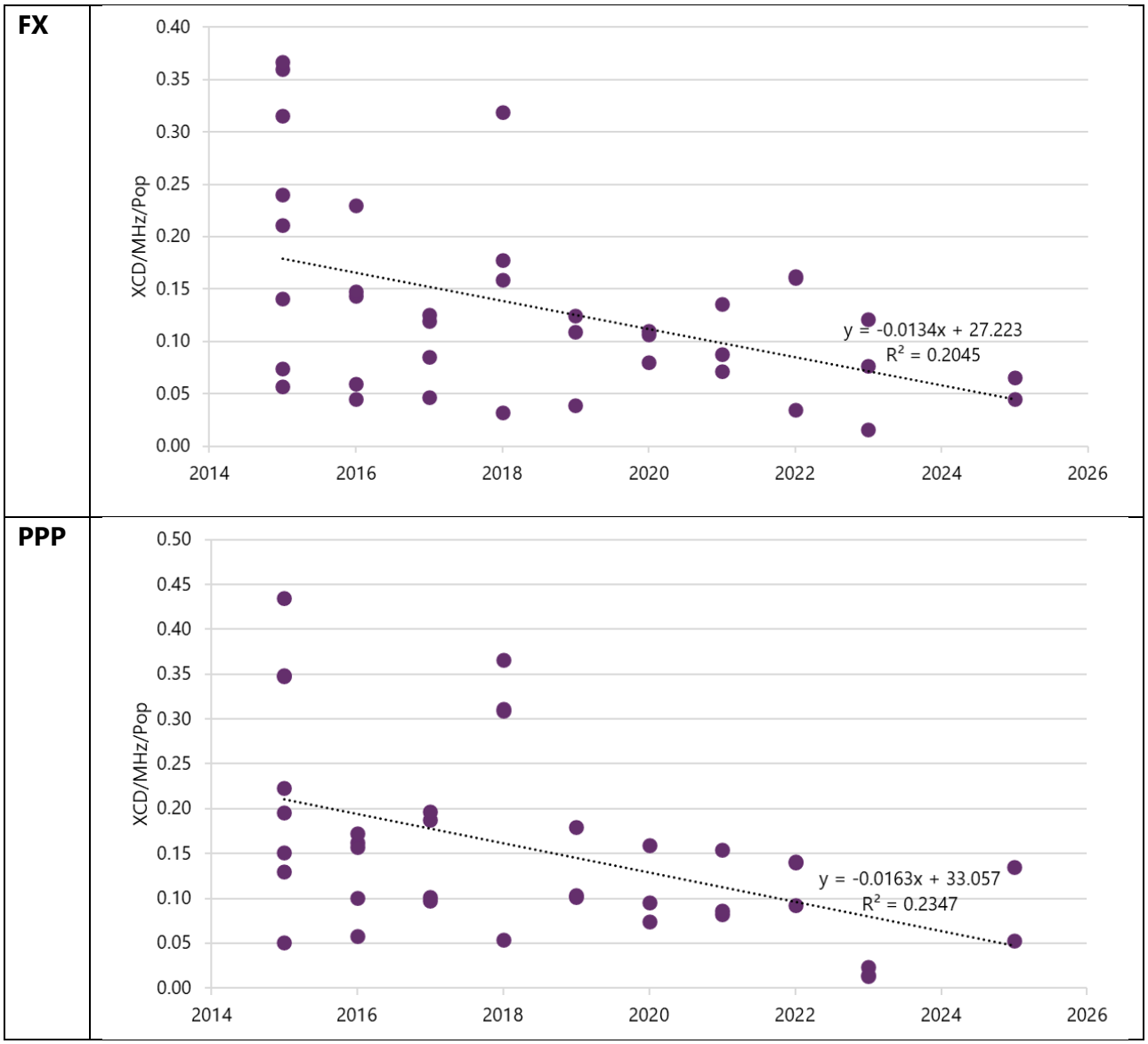
Figure 16: Impact of excluding non-competitive awards on lower mid-band spectrum benchmarks



Time trend

Next, we consider the impact of the timing of awards on prices. Spectrum prices have generally trended downwards over the last decade. The figures below plot the price of each license in our sample against the year of award. The data points in both samples are trending downward. As the amount of spectrum in these ranges has not increased globally, a similar supply dynamic as for sub-1 GHz spectrum cannot be observed. Our final estimates of the market value of licenses in ECTEL Member States will place more emphasis on awards that have taken place in the last 5 years.

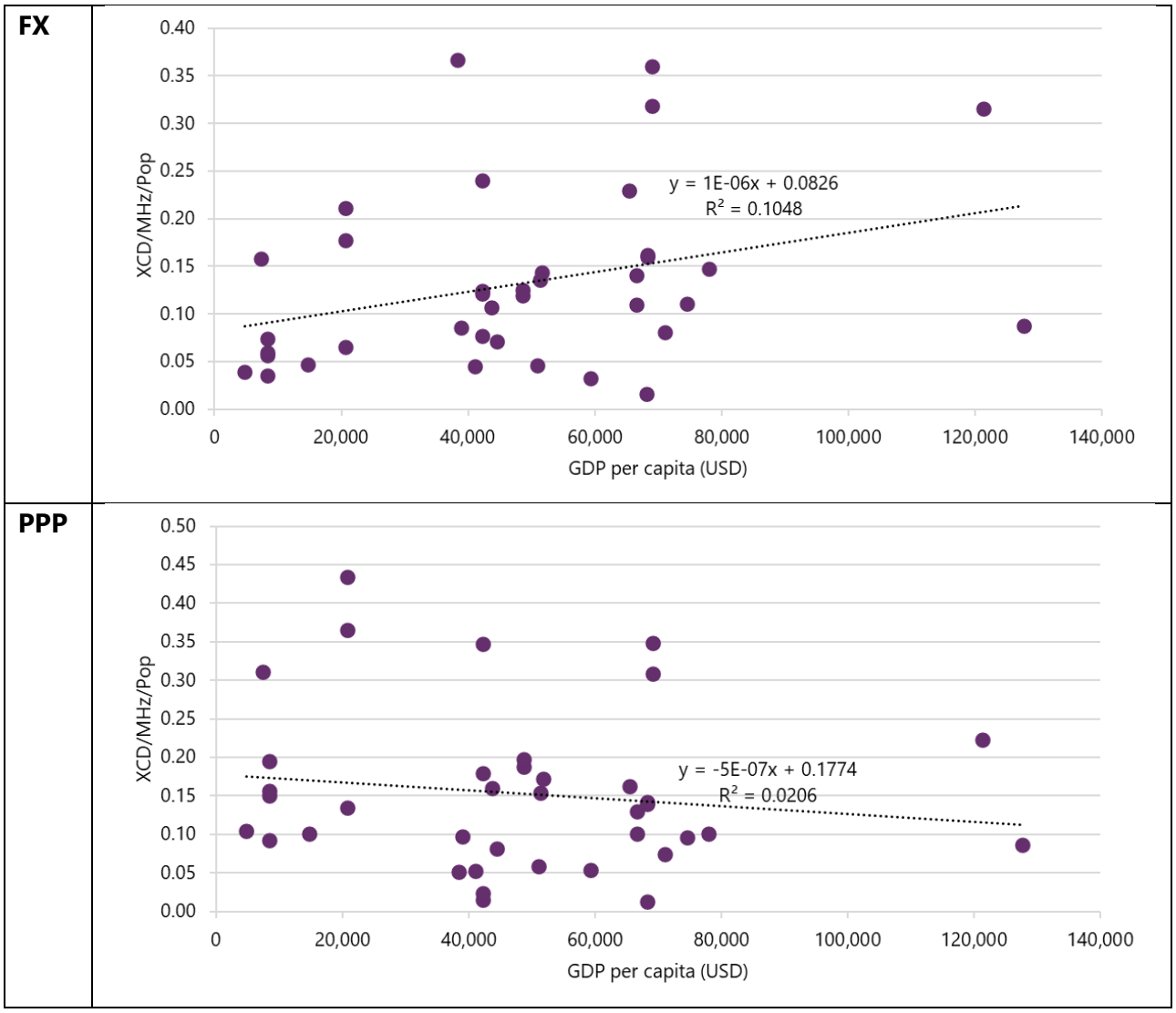
Figure 17: Lower sub-band spectrum benchmarks vs year of award



Impact of GDP

Next, we consider the impact of the GDP per capita in the country of award on prices. As the charts below show, both FX- and PPP-adjusted prices are weakly positively correlated with GDP per capita. This means although prices are correlated with GDP, the correlation is not very strong. We further note that the PPP-adjustment continues to perform well at accounting for any correlation between price and GDP per capita. The relationship breaks down in the PPP-graph with an R^2 of only 2%.

Figure 18: 1800 MHz benchmark vs GDP per capita (FX)



Summary of results

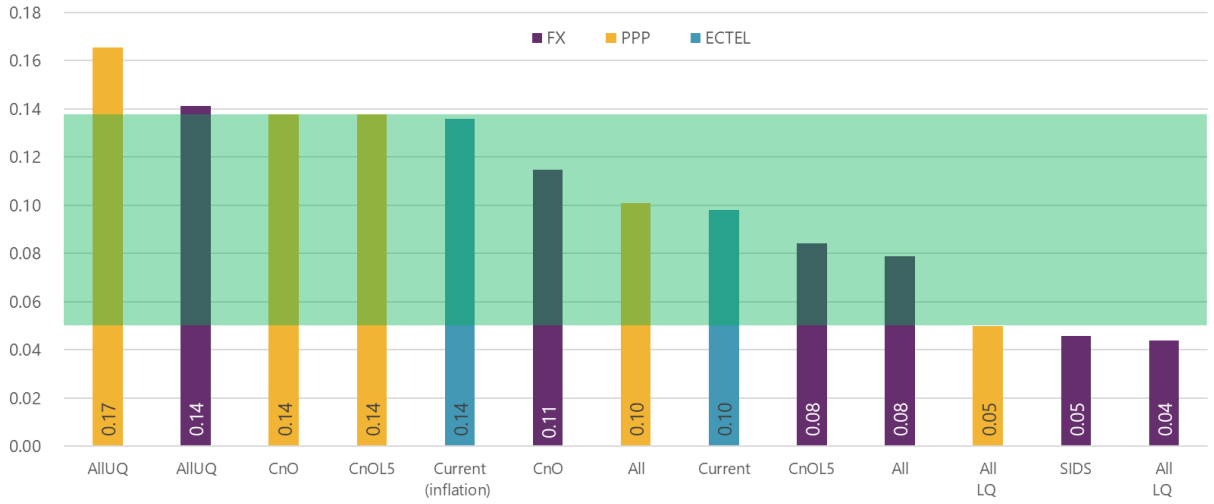
Figure 19 displays our set of estimates for the market value of lower mid-band spectrum in ECTEL Member States. The green price band in Figure 19 shows our preferred range of estimates spanning XCD0.05 – 0.14/MHz/Pop.

The competitive PPP median is XCD0.11/MHz/Pop. Taking the full benchmark evidence into account, ECTEL proposes a rate of XCD0.10/MHz/Pop.

- Again, we favor PPP benchmarks for the same reasons as discussed for sub-1 GHz spectrum;
- Our analysis shows that the SIDS benchmark price sits at the lower end of the range, just above the lower quartile of the international sample. This suggests that the SIDS data may be less reliable to estimate market value in ECTEL Member States. We therefore put less weight on it and use the lower quartile as the lower bound for our preferred benchmark range;

- The competitive PPP benchmark (as well as the 5-year competitive PPP benchmark) mark the upper limit of our preferred benchmark range;
- The inflation adjusted ECTEL fees are at this upper end of our preferred range suggesting that a straight inflation adjustment may risk over-pricing the spectrum; and
- Our preferred estimate is based on the median of the PPP benchmarks of 0.10 which sits in the middle of our preferred range. This sits just above the current ECTEL fees.

Figure 19: Range of market values for lower mid-band spectrum in ECTEL Member States

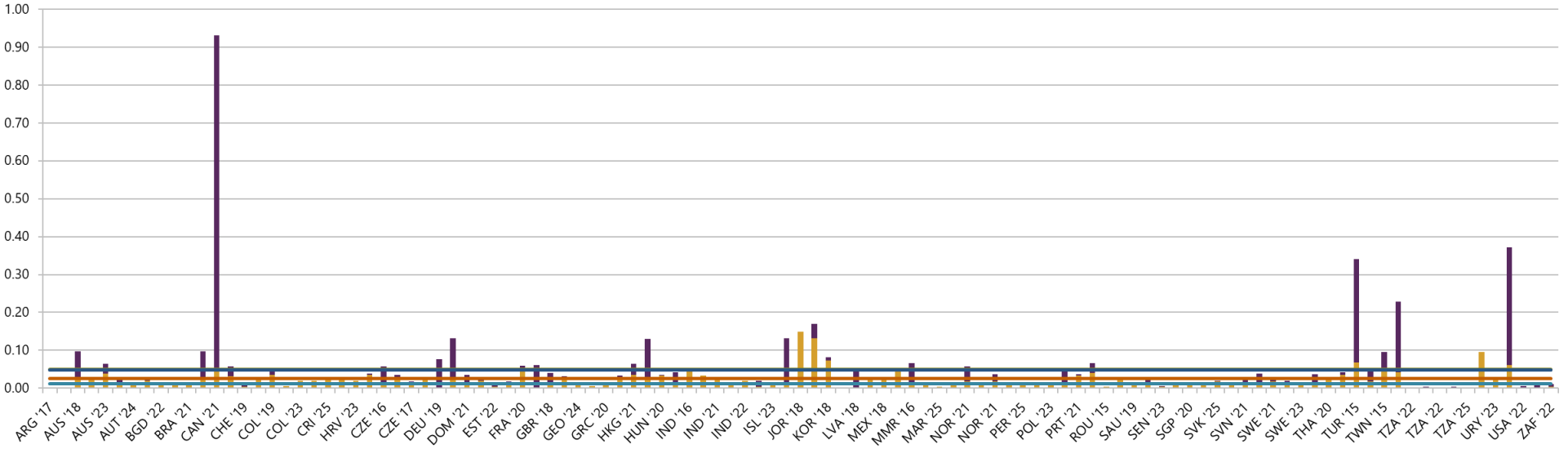


5.6.6. International award benchmarks: upper mid-band spectrum

Full dataset

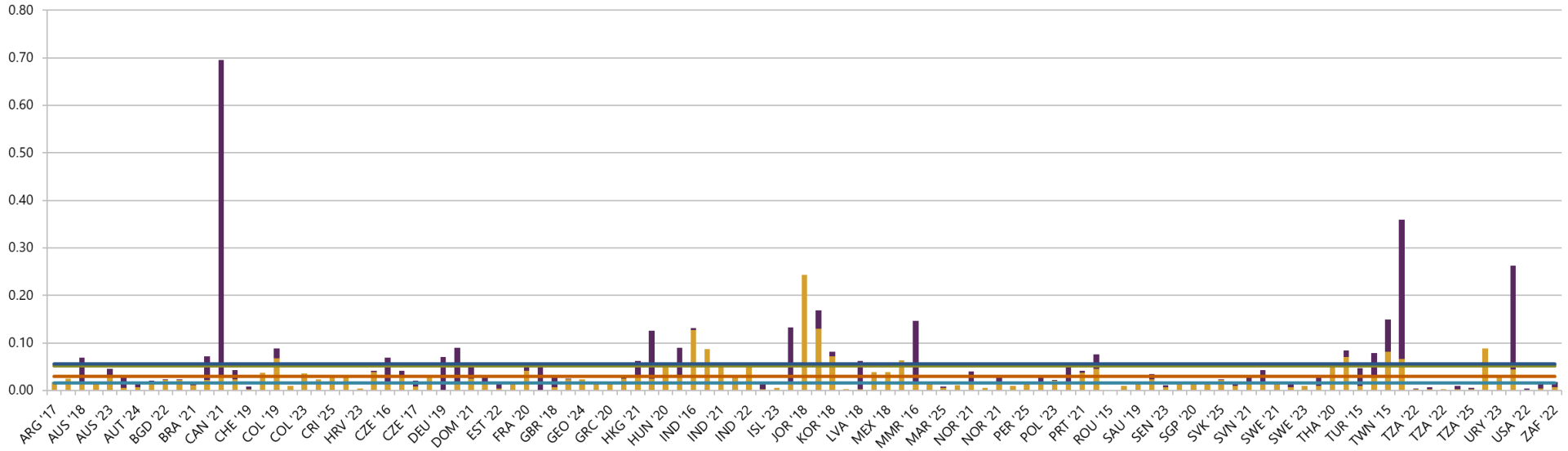
The figures below present the full dataset FX-and PPP-adjusted license prices.

Figure 20: Upper mid-band benchmarks (FX)



Blue: upper quartile, Green: average, Orange: median, Light blue: lower quartile

Figure 21: Upper mid-band benchmarks (PPP)



Blue: upper quartile, Green: average, Orange: median, Light blue: lower quartile

Table 11 presents summary statistics for upper mid-band spectrum. For both FX- and PPP-adjusted prices, the median price is lower than the mean price. This indicates that the distribution of license prices is not balanced but rather is skewed to the right. The skewness arises because the data includes a few expensive licenses, which pull the mean upwards. Owing to this, we consider the median to be a more appropriate measure of central tendency. To ensure the accuracy of our analysis, we will remove outliers using a non-parametric technique that does not require assumptions about the distribution of the data. Specifically, we use the box-plot method, allowing us to identify and exclude outliers in a robust way.

Table 11: Summary statistics for Upper mid-band benchmarks

Statistic	FX	PPP
Upper quartile	0.05	0.06
Mean	0.05	0.05
Median	0.03	0.03
Lower quartile	0.01	0.02
# of awards	109	109

SIDS benchmarks

We could only identify a small number of awards of upper mid-band spectrum in SIDS countries. Our SIDS dataset includes the following data points:[22]

- Mauritius: Assignment of 2600 MHz and 3500 MHz in 2021
- Dominican Republic: Assignment of 3500 MHz in 2021

[22] Although La Reunion, Martinique, French Guiana, St. Martin, St. Barthelemy also held awards for upper mid-band spectrum, we omit these awards as the spectrum sold at trivial prices that do not reflect its market value (in many cases, spectrum was awarded at zero upfront cost).

Figure 22: SIDS Upper mid-band benchmarks

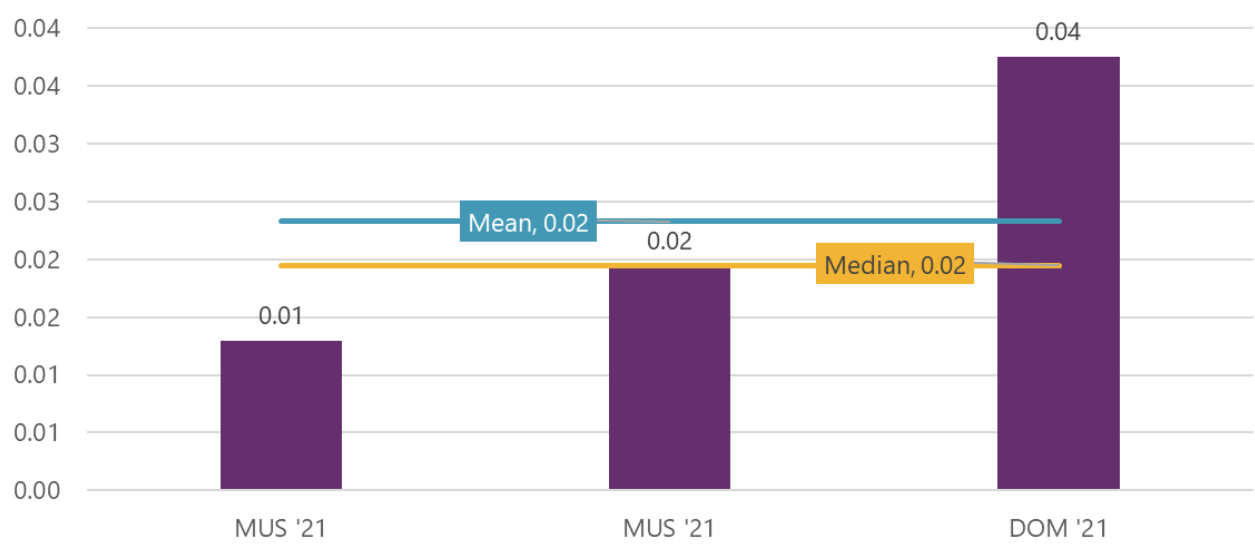


Table 10 presents summary statistics for the SIDS sample. The median price is slightly lower than the mean price. This suggests that the distribution of license prices is not balanced but rather is skewed to the right.

Table 12: Summary statistics for SIDS Upper mid-band benchmarks

Statistic	XCD/MHz/Pop (FX)
Mean	0.02
Median	0.02
# of awards	3

Outliers and competitive awards

The sample distribution of prices is right-skewed, with a mean above the median. This indicates that high-priced outliers may be present in our sample. We use the box plot method to identify these outliers. The box plot method identifies outliers as data points below the lower quartile minus 1.5 times the interquartile range or above the upper quartile plus 3 times the interquartile range (outer fence).

In the charts below, we plot FX- and PPP-adjusted prices per MHz per pop for upper mid-band benchmarks. In each chart, we plot lines across the sample depicting the median (in orange), inner fence (in blue) and outer fence (in red). Any data points lying in the red zone above the outer fence are deemed outliers and are excluded from further analysis.

For FX-adjusted benchmarks, we obtain an outer fence of 0.18XCD/MHz/Pop. For PPP-adjusted benchmarks, we obtain an outer fence of 0.22XCD/MHz/Pop. We exclude four benchmarks that are above the outer fence from the FX-adjusted set of benchmarks. We exclude three benchmarks that are above the outer fence from the PPP-adjusted set of benchmarks.

Figure 23: 2600 MHz (FDD) outlier identification (FX)

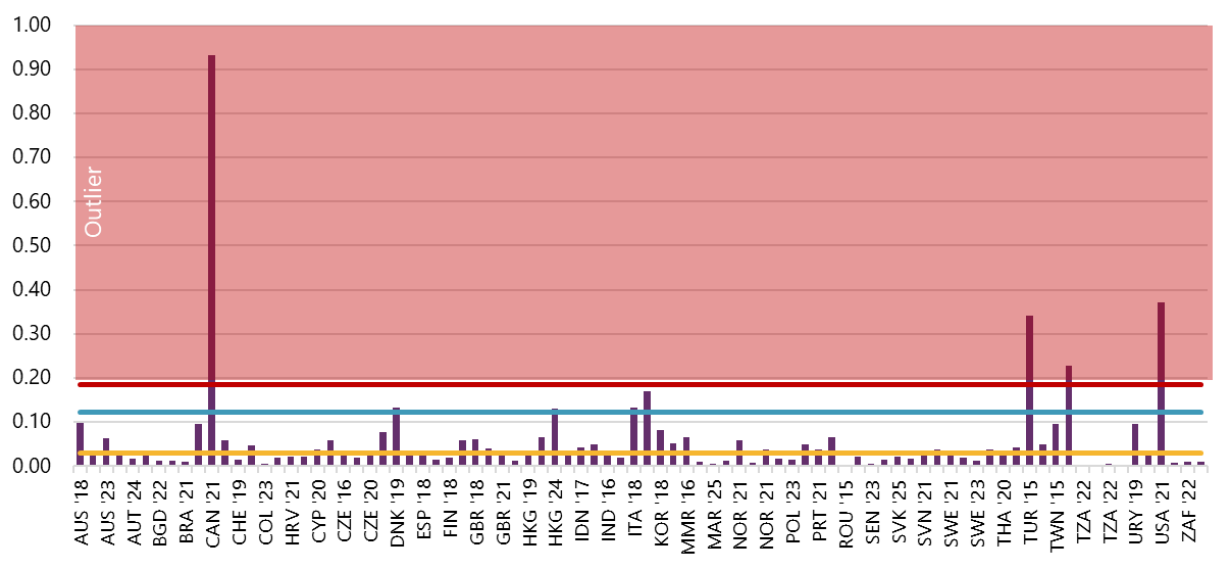
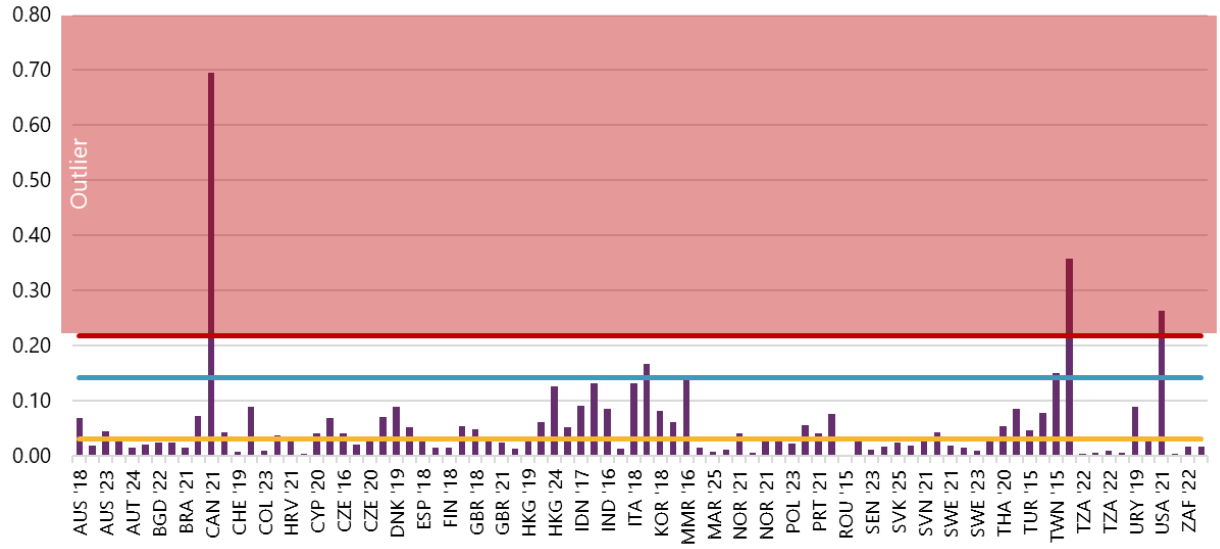


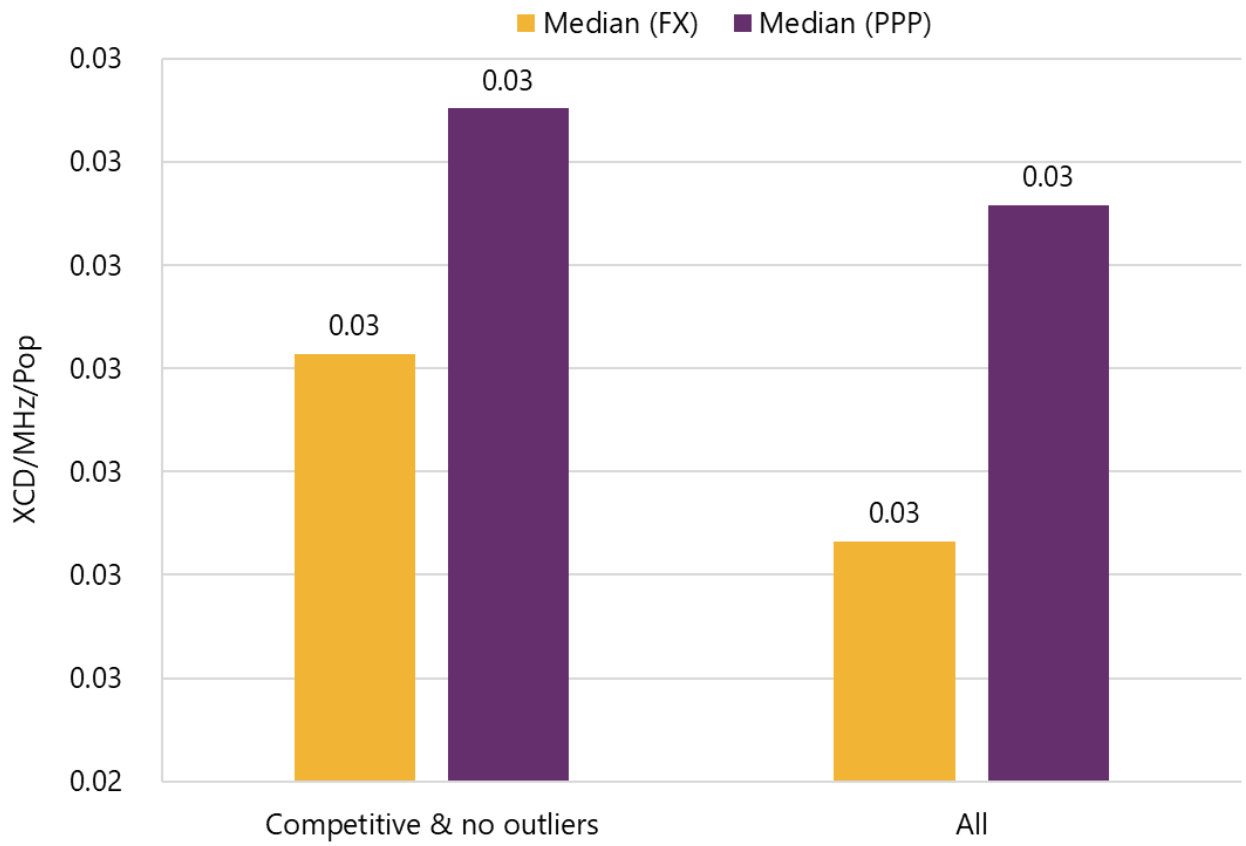
Figure 24: 2600 MHz (FDD) outlier identification (PPP)



We examine whether there is a material difference in prices across all awards and prices in competitive awards for the reasons described above. If there is a material difference in prices across the sample that includes all awards and the sample that includes competitive awards only, including the non-competitive awards could produce biased results and underestimate the market value of licenses.

Figure 25 shows median prices for competitive awards only and for the overall dataset across different groups of countries. Restricting the analysis to competitive awards results in median prices that are slightly higher.

Figure 25: Impact of excluding non-competitive awards on upper mid-band benchmarks

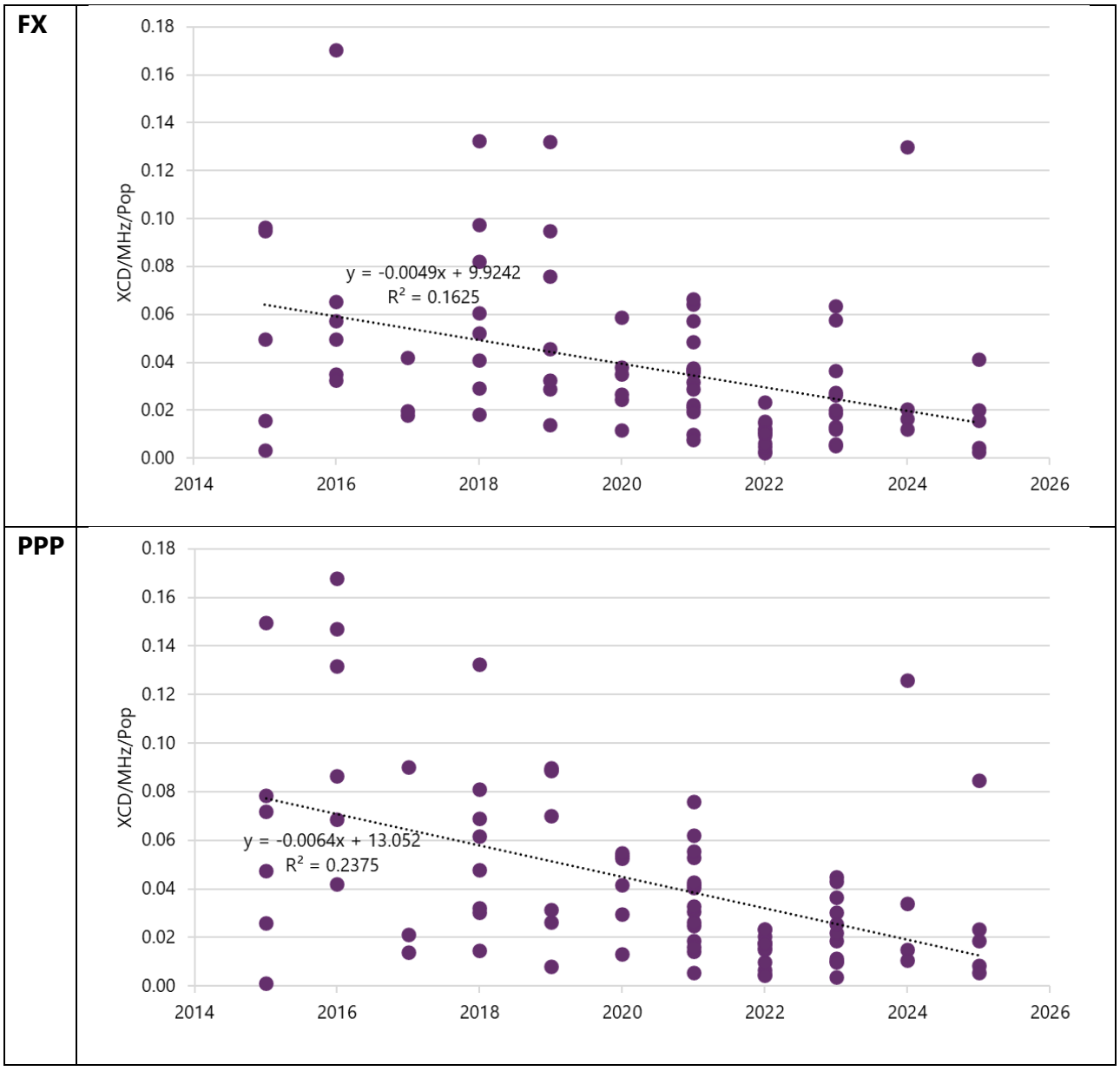


Time trend

Next, we consider the impact of the timing of awards on prices. Spectrum prices have generally trended downwards over the last decade owing to an increase in the supply of spectrum available to mobile operators and slowing growth in mobile data consumption.

The figures below plot the price of each license in our sample against the year of award. The data shows a trend, but there is still considerable dispersion in prices.

Figure 26: Upper sub-band spectrum benchmarks vs year of award

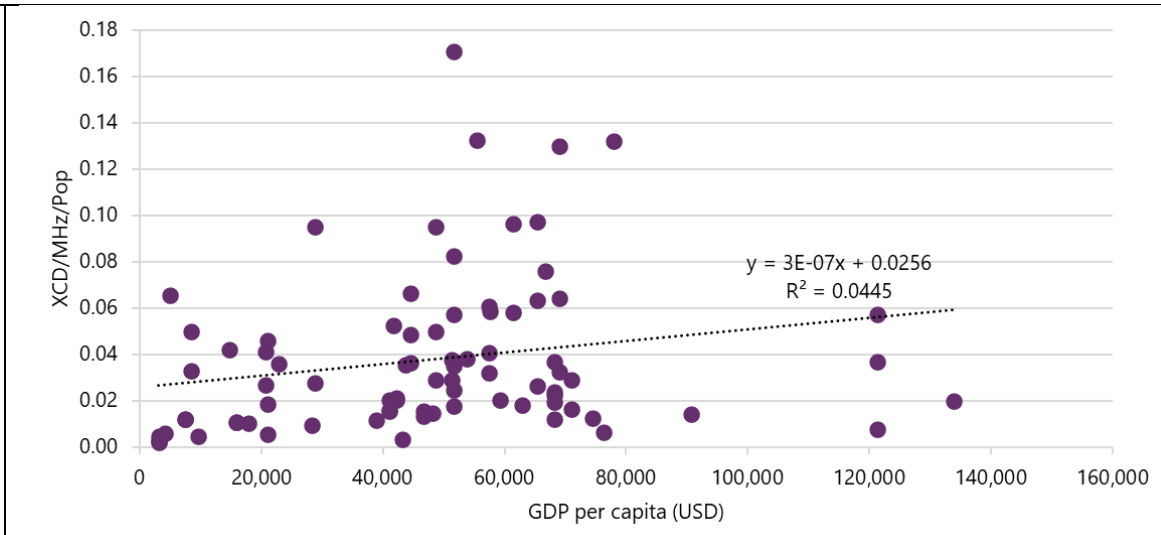


Impact of GDP

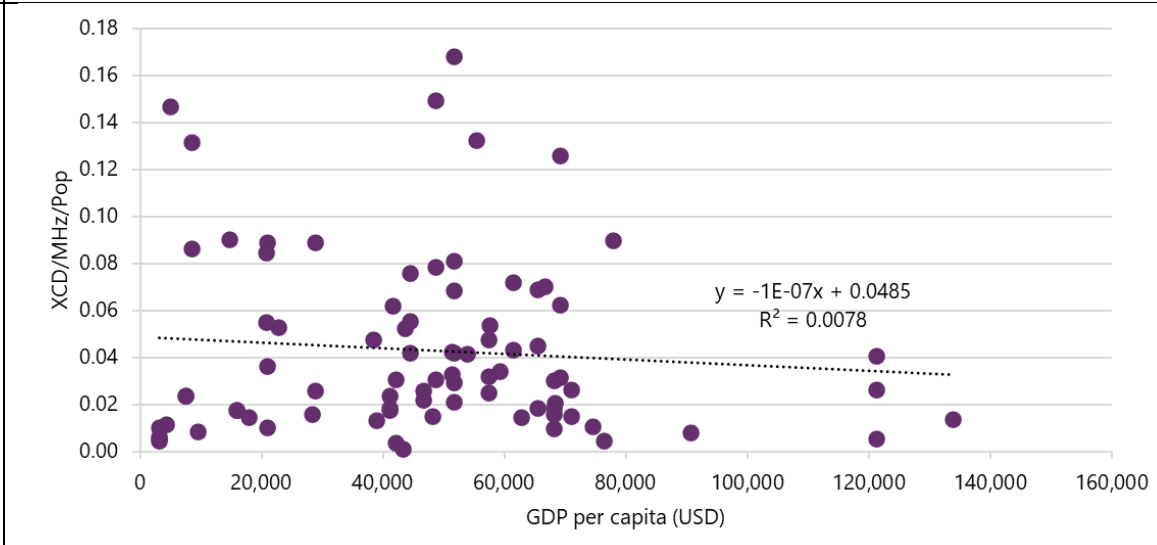
Next, we consider the impact of the GDP per capita in the country of award on prices. As the charts below show, there is no relationship between either FX- or PPP- adjusted prices and GDP per capita.

Figure 27: Upper sub-band benchmarks vs GDP per capita

FX



PPP

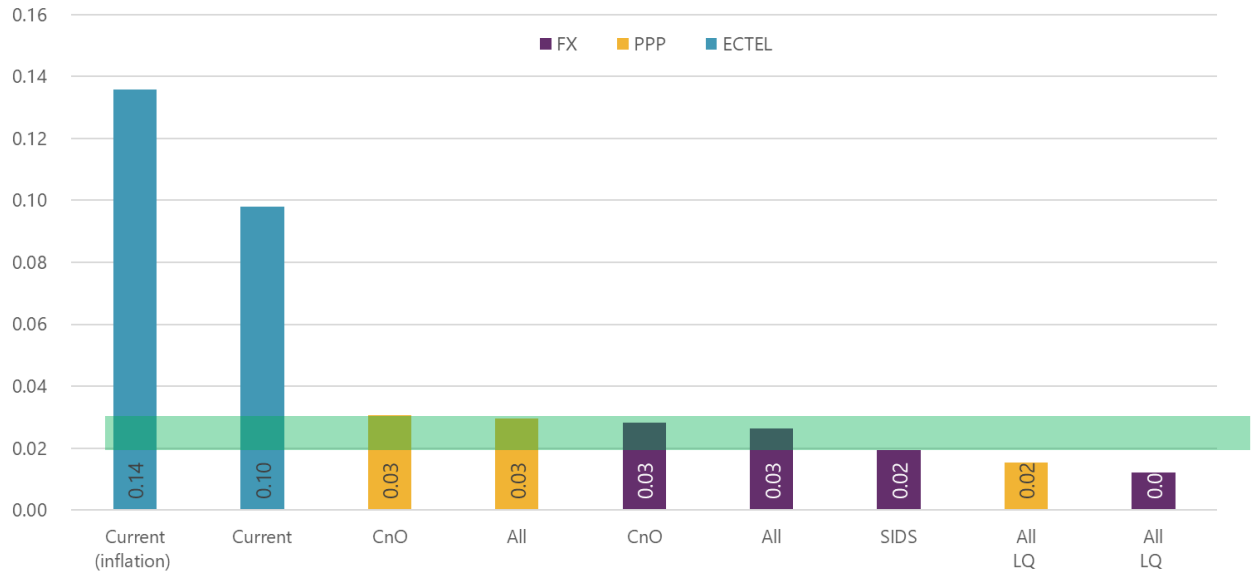


Summary of results

Figure 28 displays our set of estimates for the market value of upper mid-band spectrum in ECTEL Member States. Our preferred point estimate is between XCD0.02 and 0.03/MHz/Pop which is based on the medians of the entire sample as well as the SIDS sample. The current fee is much higher and we would be concerned that charging this fee for upper mid-band spectrum in the future could leave a lot of this spectrum unassigned, ultimately stifling the development of mobile networks in

ECTEL Member States and thus the quality of mobile services offered to consumers. We propose a conservative XCD0.03/MHz/Pop for any future upper mid-band spectrum.

Figure 28: Range of upper mid-band benchmarks



5.7. Affordability and overall impact

Applied to current holdings, the proposal raises total annual IMT fees by approximately 25 to 29% depending on the allocation basis, against cumulative inflation of 37.8% since fees were last set. The new fees therefore represent an adjustment below the increase from inflation. In affordability terms, current IMT fees equal 3.0% of 2024 industry revenues. The proposal takes this to just under 4.0%, against an international average of 7-8% of revenues spent on spectrum.[23] Even a future scenario in which a further 60 MHz of sub-1 GHz and 300 MHz of C-band spectrum were assigned in each state would take the ratio only to approximately 7.0% of 2024 revenues. We therefore consider the proposal consistent with our affordability objective.

[23] https://www.gsma.com/connectivity-for-good/spectrum/gsma_resources/spectrum-pricing-and-renewals-in-europe/; https://www.econstor.eu/bitstream/10419/331317/1/ITS-E-2025-72.pdf

6. Fixed link fees

In this section we set out our proposals for fixed links: the point-to-point and point-to-multipoint microwave links that carry backhaul and inter-site traffic. We first set out the proposed formula, base fee and band factors. We then describe the current schedule and its limitations, and the international benchmark evidence on which the proposal rests. Finally, we illustrate the fees that would be generated under the new fee regime for a set of hypothetical fixed link examples.

6.1. Proposed fees

We propose that the annual fee for each fixed link be set by a single formula:

Fee = Base fee (XCD336) x Bandwidth (MHz) x Band factor

Bandwidth is the total spectrum assigned, not paired bandwidth: a 2x5 MHz link counts as 10 MHz. One fee applies per link, identical for point-to-point and point-to-multipoint configurations, with the current link-type and service-type distinctions removed. We considered, and for now rejected, a congestion factor of the kind used in Jamaica: congestion is concentrated in particular bands and is addressed through the band factor, and a per-route congestion adjustment would add administrative burden disproportionate to its benefit. We will keep this under review.

The base fee of XCD336 per MHz per link is the median of per-MHz point-to-point fees across the benchmark sample. We prefer the median to the mean (XCD1,901) because fees vary widely across jurisdictions and the median is robust to outliers. We propose a unified per-link fee for simplicity, fairness and transparency.

Table 13: Proposed fixed-link band factors

Band	Median proportional factor across benchmarks	Proposed band factor
Below 1 GHz	100%	2.95
1 to 3 GHz	100%	2.95
3 to 5 GHz	75%	2.21
5 to 8.5 GHz	74%	2.18
10.7 to 15.35 GHz	33%	0.97
Above 15.35 GHz	22%	0.65

Question 5: Do you agree that fixed-link fees should be set by the formula Base fee x Bandwidth (MHz) x Band factor, with fees scaling linearly in bandwidth?

Question 6: Do you agree with the proposed base fee of XCD336 per MHz per link?

Question 7: Do you agree with the proposed band factors in Table 13? Please give reasons and any supporting evidence.

Question 8: Do you agree that the distinctions between link types and service types (backhaul, inter-site, other microwave) should be removed, with one fee per link regardless of configuration?

6.2. Current fees

Table 14: Current fixed-link fee schedule, key entries (XCD per year)

Description	Annual fee (XCD)
Microwave Backhaul: <10 MHz bandwidth	$7,000/frequency pair
Microwave Backhaul: 10-20 MHz bandwidth	$10,000/frequency pair
Microwave Backhaul: 20-30 MHz bandwidth	$12,000/frequency pair
Microwave Backhaul: >30 MHz bandwidth	$18,000/frequency pair
Microwave-Cellular Inter-site: <10 MHz Bandwidth	$5,500/frequency pair
Microwave-Cellular Inter-site: 10-20 MHz bandwidth	$6,000/frequency pair
Microwave-Cellular Inter-site: 20-30 MHz bandwidth	$6,500/frequency pair
Microwave-Cellular Inter-site: >30 MHz bandwidth	$15,000/frequency pair
Microwave: <10 MHz bandwidth	$5,500/frequency pair
Microwave: 10 -20 MHz bandwidth	$6,000/frequency pair
Microwave: 20-30 MHz bandwidth	$6,500/frequency pair
Microwave: >30 MHz bandwidth	$15,000/frequency pair
Fixed Wireless Access (WAN,LAN.PBX etc.) <5 MHz bandwidth	$500/frequency block
Fixed Wireless Access (WAN,LAN.PBX etc.) 5-10 MHz bandwidth	$750/frequency block
Fixed Wireless Access (WAN,LAN.PBX etc.) 10-15 MHz bandwidth	$1,000/frequency block
Fixed Wireless Access (WAN,LAN.PBX etc.) >15 MHz bandwidth	$1,500/frequency block
LMDS: <125 MHz of Bandwidth	$500/frequency block
LMDS: 125 to 250 MHz of bandwidth	$750/frequency block
LMDS: 250 to 500 MHz of bandwidth	$1,000/frequency block
LMDS: >500 MHz of bandwidth	$1,500/frequency block
MMDS	$500/frequency

Source: Current Schedule III entries.

We consider that the current schedule has three limitations, each contradicted by international practice

- Fees do not scale linearly with bandwidth, so users face different marginal costs per MHz and wide links are heavily discounted. By contrast, a majority of benchmark country scales fees linearly with bandwidth;
- Fees differ by link type and service (backhaul against inter-site against FWA). Separate fees by service are rarely observed in benchmark countries. This structure allows some users of the same resource to pay less for it; and

- Fees ignore the frequency band despite potential for congestion in the popular lower bands. Many benchmark countries apply band factors with lower frequencies priced higher.

6.3. International benchmarking

In the following sections, we present details of spectrum fee regimes for fixed links spectrum in a range of benchmark countries.

6.3.1. Bahamas

The URCA uses the following formula to compute spectrum fees, in BSD, for fixed links.

$$Fee = C \times Bandwidth\ in\ MHz \times Time\ Factor \times Island\ Factor \times Frequency\ Band\ Factor$$

The value of C is determined as per the table below.

Table 15: Constant in fixed link fees – Bahamas

Service	C (BSD)	C (XCD)
Point-to-Point	4,250	11,485
Point-to-Multipoint	8,500	22,971

The time factor captures the duration of the license and is set to 1 for an annual authorisation. The island factor allows fees to vary by region, and takes values of 1, 0.2, and 0.1 for national licenses / New Providence, Grand Bahama, and other islands respectively.

The frequency band factor term applies an adjustment for the specific frequencies used.

Table 16: Frequency band factors – Bahamas

Frequency	Frequency Band Factor
0 – 960 MHz	1
960 – 2,200 MHz	0.5
2.2 – 6.7 GHz	0.05
6.7 – 30 GHz	0.01
> 30 GHz	0.005

6.3.2. British Virgin Islands

The TRA's 2025 consultation on spectrum fees adopts bandwidth-based fees for point-to-point and point-to-multipoint links.

Table 17: Point-to-Point Microwave Links – Bahamas

Bandwidth	Fee (USD)	Fee (XCD)
< 5 MHz	290 / frequency	784 / frequency
5 – 15 MHz	290 / frequency	784 / frequency
15 – 30 MHz	290 / frequency	784 / frequency
> 30 MHz	300 / frequency	811 / frequency

Table 18: Point-to-Multipoint Microwave Links – Bahamas

Bandwidth	Fee (USD)	Fee (XCD)
< 5 MHz	1,250 / frequency	3,378 / frequency
5 – 15 MHz	800 / frequency	2,162 / frequency
15 – 30 MHz	1,500 / frequency	4,054 / frequency
> 30 MHz	2,000 / frequency	5,405 / frequency

6.3.3. Cape Verde

ARME's fee regime for fixed links distinguishes between point-to-point links below 1 GHz and above 1 GHz.

Below 1 GHz, the following formula is used to compute half-yearly fees.

$$Fee\ (ECV) = 2{,}500 \times \frac{BW}{25} \times Direction \times Distance$$

$$Fee\ (XCD) = 71 \times \frac{BW}{25} \times Direction \times Distance$$

Here, BW is the assigned bandwidth in kHz. Direction takes the value 1 for a one-way connection and 1.5 for a two-way connection. The distance term is determined in accordance with the table below.

Table 19: Distance adjustment for fixed links – Cape Verde

Distance	Coefficient
0 – 8 km	1
8 – 20 km	1.1
> 20 km	1.2

Above 1 GHz, the following formula is used to compute half-yearly fees.

$$Fee\ (ECV) = 40{,}000 + 120 \times BW \times Direction \times Distance \times Band$$

$$Fee\ (XCD) = 1{,}128 + 3.39 \times BW \times Direction \times Distance \times Band$$

BW is now the assigned bandwidth in MHz. Direction and distance are designed as above. Band performs an adjustment for the specific frequencies used.

Table 20: Band adjustment for fixed links – Cape Verde

Band	Coefficient
1 – 3.99 GHz	8
4 – 12.99 GHz	6
13 – 22.99 GHz	3
23 – 31.99 GHz	2
32 – 52 GHz	1
> 52 GHz	0.04

Note that fees for point-to-multipoint links are computed as the sum of fees for each point-to-point connection included.

6.3.4. Jamaica

The SMA established the following formula to compute fees for point-to-point links in 2020.

$$Fee = Base\ Fee \times Bandwidth\ (MHz) \times Band\ Factor \times Zone\ Factor \times Network\ Type\ Factor \times Exclusivity\ Factor \times Efficieny\ Factor \times Tenure\ Factor \times Inflation\ Factor$$

The base fee is a per-MHz fee.

Table 21: Base point-to-point links fees – Jamaica

Bandwidth	Fee (JMD)	Fee (XCD)
0 – 50 MHz	20,000	336
50 – 100 MHz	15,000	252
> 100 MHz	10,000	168

The band factor applies an adjustment for the specific frequencies used.

Table 22: Band adjustment for fixed links – Jamaica

Band	Coefficient
0 – 4.2 GHz	1.8
5.925 – 7.125 GHz	1.6
7.110 – 7.725 GHz	1.4
7.725 – 8.5 GHz	1.2
10.15 – 10.65 GHz	1
10.7 – 11.7 GHz	0.8
12.75 – 15.35 GHz	0.6
17.70 – 23.6 GHz	0.4
> 24.25 GHz	0.2

The zone factor accounts for the level of congestion in the regions where the link starts and ends.

Table 23: Band adjustment for fixed links – Jamaica

Zone	Coefficient
Zone 1 – most congested	0.10
Zone 2	0.06
Zone 3 – least congested	0.04

Network type factor takes the value 1 for commercial networks and 0.5 for private networks. The exclusivity factor takes value 1 for exclusive-use links and 0.5 for shared-use links. The efficiency factor ordinarily takes the value 1, but the SMA may apply a value of 0.75 when the licensee uses more efficient point-to-point technologies.

The tenure factor depends on the duration of the license, taking values of 1, 1.7, and 2.2 for 5-, 10-, and 15-year licenses respectively.

Finally, the fee is updated each year in line with the Consumer Price Index, as published by the Statistical Institute of Jamaica.

Similarly, the fees for point-to-multipoint links as of 2020 are given by the following formula.

$$Fee = Base\ Fee \times Bandwidth\ (MHz) \times Band\ Factor \times Zone\ Factor \times Network\ Type\ Factor \times Exclusivity\ Factor \times Efficieny\ Factor \times Tenure\ Factor \times Inflation\ Factor$$

The base fee is JMD350,000, i.e., XCD5,885, per MHz. All other terms are as defined above.

6.3.5. Mauritius

The ICTA collects fees for fixed links which vary with the bandwidth of spectrum and specific frequencies used, as reflected in the table below.

Table 24: Fixed link fees – Mauritius

Band	Bandwidth	Fees (Rs)	Fee (XCD)
0 – 1 GHz	0 – 12.5 kHz	5,000	295
0 – 1 GHz	12.5 – 25 kHz	8,000	472
0 – 1 GHz	25 – 50 kHz	10,000	590
0 – 1 GHz	50 – 100 kHz	15,000	885
0 – 1 GHz	> 100 kHz	20,000	1,180
1 – 3 GHz	0 – 1 MHz	42,000	2,478
1 – 3 GHz	1 – 7 MHz	63,000	3,717
1 – 3 GHz	7 – 14 MHz	84,000	4,956
1 – 3 GHz	14 – 28 MHz	105,000	6,195
1 – 3 GHz	> 28 MHz	126,000	7,434
3 – 5 GHz	0 – 1 MHz	30,000	1,770
3 – 5 GHz	1 – 7 MHz	45,000	2,655
3 – 5 GHz	7 – 14 MHz	60,000	3,540
3 – 5 GHz	14 – 28 MHz	75,000	4,425
3 – 5 GHz	> 28 MHz	90,000	5,310
5 – 8 GHz	0 – 1 MHz	24,000	1,416
5 – 8 GHz	1 – 7 MHz	36,000	2,124
5 – 8 GHz	7 – 14 MHz	48,000	2,832
5 – 8 GHz	14 – 28 MHz	60,000	3,540
5 – 8 GHz	> 28 MHz	72,000	4,248
8 – 10 GHz	0 – 1 MHz	18,000	1,062
8 – 10 GHz	1 – 7 MHz	27,000	1,593
8 – 10 GHz	7 – 14 MHz	36,000	2,124
8 – 10 GHz	14 – 28 MHz	45,000	2,655
8 – 10 GHz	> 28 MHz	54,000	3,186
> 10 GHz	0 – 1 MHz	12,000	708
> 10 GHz	1 – 7 MHz	18,000	1,062
> 10 GHz	7 – 14 MHz	24,000	1,416
> 10 GHz	14 – 28 MHz	30,000	1,770
> 10 GHz	> 28 MHz	36,000	2,124

6.3.6. Seychelles

The SCRA charges SCR 300, i.e., XCD60, per radiocommunication equipment per year for fixed links in frequency bands below 1 GHz. Similarly, the annual fee for fixed links in frequency bands above

1 GHz is SCR35,000, i.e., XCD6,953, per frequency pair. Note that these fees do not scale with the bandwidth of spectrum used.

6.3.7. Trinidad and Tobago

Spectrum fees for fixed links vary with the specific frequencies and bandwidth used, as reflected in the table below.

Table 25: Fixed link fees – Trinidad and Tobago

Band	Service	Sub-Category	Fees (TTD)	Fee (XCD)
216 – 960 MHz	Point-to-point	Station License	20 / kHz pair	8 / kHz pair
	Point-to-multipoint	Spectrum License	59 / kHz pair	23 / kHz pair
960 – 2,200 MHz	Point-to-point	Station License	4,000 / MHz pair	1,592 / MHz pair
	Point-to-multipoint	Spectrum License	4,000 / MHz pair	1,592 / MHz pair
2,200 – 5,850 MHz	Point-to-multipoint	Spectrum License	4,000 / MHz pair	1,592 / MHz pair
	Point-to-multipoint	Station License	4,000 / MHz pair	1,592 / MHz pair
	Point-to-point	Station License	4,000 / MHz pair	1,592 / MHz pair
5,850 – 8,500 MHz	Point-to-point	Spectrum License	4,000 / MHz pair	1,592 / MHz pair
	Point-to-point	Station License	400 / MHz pair	159 / MHz pair
> 8,500 MHz	Point-to-point	Spectrum License	4,000 / MHz pair	1,592 / MHz pair
	Point-to-point	Station License	134 / MHz pair	53 / MHz pair
	Point-to-multipoint	Spectrum License	4,000 / MHz pair	1,592 / MHz pair
	Point-to-multipoint	Station License	134 / MHz pair	53 / MHz pair

6.3.8. United Kingdom

Ofcom uses the following formula to compute spectrum fees for fixed links.

$$Fee = Spectrum\ Price \times Path\ Length\ Factor \times Bandwidth\ (in\ MHz) \times Band\ Factor \times Availability\ Factor$$

The spectrum price is a fixed sum of £88, i.e., XCD311, per 2×1 MHz bandwidth, subject to a 1 MHz minimum. The path length factor captures the distance between the fixed points of the link, the data rate along the length, and the channel width. The band factor applies an adjustment based on the specific frequencies in use, as illustrated in the table below. Finally, the availability factor accounts for the percentage of the year for which the link is expected to be usable and meet performance requirements.

Table 26: Band factor for fixed links – United Kingdom

Band (GHz)	Coefficient
1.35 – 2.69	1
3.6 – 4.2	1
5.92 – 7.13	0.74
7.42 – 8.5	0.74
10.7 – 11.7	0.43
12.75 – 15.35	0.43
17.3 – 19.7	0.3
21.2 – 23.6	0.3
24.5 – 29.06	0.26
31 – 31.8	0.26
31.8 – 33.4	0.26
37 – 39.5	0.26
49.2 – 57	0.17

Ofcom provides sample fee calculations to illustrate their methodology.

Table 27: Example fixed link fees – United Kingdom

Description	Spectrum Price (XCD)	BW Factor	Band Factor	Path Length Factor	Avbty Factor	Fee (XCD)
1.4 GHz link, 99.99%, path length = 30km, bandwidth = 2MHz and data rate = 2Mbit/s kHz	311	2.0	1.0	1.0	1.0	622
7.5 GHz link, 99.99%, path length = 16km, bandwidth = 7.0 MHz and data rate = 8 Mbit/s	311	7.0	0.74	1.0	1.0	1,611
28 GHz link, 99.99%, path length = 2.0km, bandwidth = 28.0 MHz and data rate = STM(1) or 155 Mbit/s	311	28.0	0.30	1.0	1.0	2,612
38 GHz link, 99.99%, path length = 0.75km, bandwidth = 28.0 MHz and data rate = 2x34 Mbit/s	311	28.0	0.26	1.0	1.0	2,264

6.3.9. United States

The FCC charges a regulatory fee of USD25, i.e., XCD68, per microwave link. This does not vary with bandwidth, specific frequencies used, or linked distance. Additionally, Broadband Radio Service (formerly MMDS) and Local Multipoint Distribution Service (LMDS) carry a regulatory fee of USD760, i.e., XCD2,054, per license and call sign respectively.

6.4. Fee structure - common themes & proposed fee structure

Table 28 provides an overview of the common charging principles across the countries in our benchmark set:

- **Bandwidth – Linear scaling:** Almost all countries have fees that scale linearly with the bandwidth used. This is good economic practice as it means that all users are confronted with the same opportunity cost per bandwidth. It allows users to scale back or increase their use at the margin depending on the value they derive from their use;
- **Band factor:** Almost all countries use band factors that translate to lower frequency bands being more expensive than higher frequency bands;

- **Congestion factor:** In addition, Jamaica has introduced an explicit congestion factor into the fee formula. This is to ensure that the spectrum fee reflects opportunity cost. The higher the congestion, the greater the likely value to an alternative user;
- **PtP vs PtMP:** Some countries explicitly distinguish between point-to-point and point-to-multipoint links. In our view, this distinction is unnecessary and it is more straightforward to charge a single, transparent fee per link; and
- **Distance:** Some countries include a factor that is based on distance or geographic coverage. This is generally also good economic practice as longer links impose more opportunity cost on alternative users than shorter ones. However, it is unclear whether a separate factor for distance/geographic coverage is needed as this could be reflected in the band factor.

Comparing the current ECTEL fees to this best practice observed in other countries, highlights the following:

- ECTEL fees do not scale linearly in the bandwidth which means that not all users are confronted with the same cost per bandwidth to give them incentives to potentially scale back their use (in particular in popular bands);
- ECTEL fees differentiate between different types of fixed links. T his is a practice that we do not observe in other countries. Importantly, it means that different types of users (of the same resource) face different costs, providing users of spectrum for lower cost services less incentives to scale back their use in popular bands; and
- ECTEL fees do not distinguish between different types of bands based on their propagation. We understand that there are some popular bands in which there may be congestion suggesting fees are too low.

As a result, we propose to update the fee regime as follows:

- **Fees to scale linearly with bandwidth**
- **Introduce a band factor**
- **Remove distinction between different types of links**

We do not propose including a congestion factor in the fee regime for now. While we would be generally supportive of such a factor in the calculation, it increases the administrative burden for ECTEL and its Member States as they would need to determine on an ongoing basis the relative congestion in each band in each Member State. We understand that congestion is mainly focused in certain bands, which we can address through the band factor instead.

Table 28: Fixed links fees – common themes

	Bandwidth Linear Scaling	Bandwidth Other Scaling	Band / Frequency	Geographic coverage / Distance	PtP vs PtMP distinction	Link Direction	Congestion	Type of link
Bahamas	✓		✓	✓	✓			
British Virgin Islands	✓	✓			✓			
Cape Verde	✓		✓	✓		✓		
Jamaica	✓	✓	✓		✓		✓	
Mauritius		✓	✓					
Seychelles								
Trinidad and Tobago	✓		✓		✓			
United Kingdom	✓		✓	✓				
United States								✓
ECTEL		✓ (stepwise)						✓

6.5. Benchmarking fee components

We will use benchmarking to derive the components of an updated fee regime. The fee regime will use the following formula:

$$Fee = Base\ Fee * BW * Band\ Factor$$

where

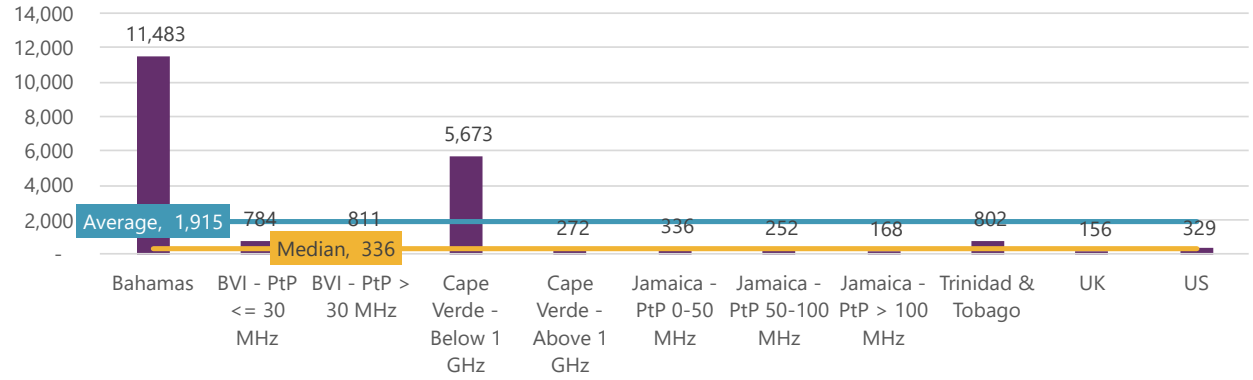
- $Base\ Fee$ is a fixed base amount (in XCD). The base fee will be charged per fixed link.
- BW is the bandwidth used. Note that we measure bandwidth in MHz, not paired MHz, i.e., the bandwidth for 5 x 2 block is 10, not 5.
- $Band\ Factor$ is a coefficient that reflects the propagation and popularity of a band.

In the following sections, we derive a value for the base fee and the band factor using the country benchmarks presented above.

6.5.1. Base Fee

In the figure below, we present fees per MHz for point-to-point fixed links across benchmark countries where fees vary with the bandwidth.

Figure 29: Benchmarking - PtP Base Fee (XCD)

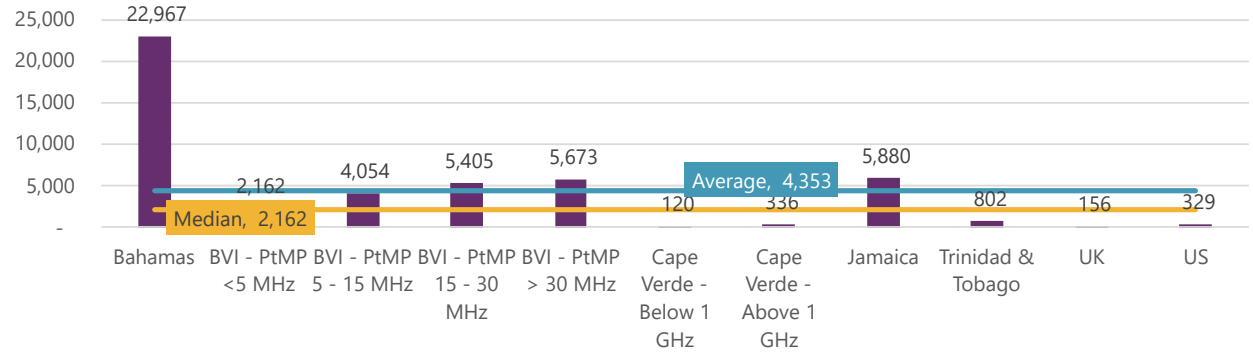


Note: *All fees are adjusted to XCD using FX rates. For the US, we leverage the total revenue from all fixed link applications divided by the number of fixed link payment units in FY 2025.*

We therefore **propose a base fee of XCD336 per MHz per fixed link**, consistent with the median across the sample of benchmark countries. We use the median rather than the mean because benchmarked fixed links fees vary widely across jurisdictions, and the median is less affected by high and low fee outliers.

The following figure compares base fees per MHz for point-to-multipoint links across benchmark countries, for reference. Instead of establishing separate fees for point-to-point and point-to-multipoint links, we propose a unified fee structure that charges per link (using the base fee per link specified above). This approach retains the relative simplicity of the current fee framework, is fair as it treats all links equally regardless of their configuration, and reduces administrative complexity. Additionally, charging per link ensures transparency, making it easier for stakeholders to understand and anticipate costs.

Figure 30: Benchmarking – PtMP Base Fee (XCD)



Note: *All fees are adjusted to XCD using FX rates. For the US, we leverage the total revenue from all fixed link applications divided by the number of fixed link payment units in FY 2025. For Cape Verde (> 1 GHz) we assume a bandwidth of 10 MHz as the per-MHz rate depends on the bandwidth.*

This update will bring fees in ECTEL member states in line with international best practice and peer regulators represented in the benchmark sample.

6.5.2. Band factor

In this section, we benchmark the band factor, i.e., the coefficient used in the fee formula to reflect the popularity of a particular band. We follow a three-step process:

(i) We note that the band factor is highest for sub-1 GHz links in each benchmark country, reflecting the relative scarcity and superior propagation of low frequencies. Our proposal for the band factor to be applied to this frequency band is based on an arithmetic mean of the highest band factor across benchmark countries. This value is 2.95;

(ii) For other bands of interest, we compute the band factor applied in each benchmark country as a percentage of that country's sub-1 GHz band factor. We record the median of this proportional band factor across countries for each band of interest. This analysis is illustrated in the table below; and

Table 29: Proportional Band Factors

Band	Bahamas	Cape Verde	Jamaica	Mauritius	UK	Median	Average
< 1 GHz	100%	100%	100%	100%	100%	100%	100%
1 - 3 GHz	50%	100%	100%	22%	100%	100%	74%
3 - 5 GHz	5%	75%	100%	16%	100%	75%	59%
5 - 8.5 GHz	1%	75%	89%	13%	74%	74%	50%
10.7 – 15.35 GHz	1%	75%	33%	10%	43%	33%	32%
> 15.35 GHz	1%	38%	22%	6%	30%	22%	19%

Note: *For Mauritius, proportional band factors are identified through regression analysis.*

(iii) Finally, we compute our proposed band factors for ECTEL by multiplying the band factor in proportion terms from step (ii) with the highest band factor 2.95 computed in step (i). Band factors produced through our methodology are reflected in the table below.

Table 30: Proposed Band Factors

Band	Proportional Band Factor	Band Factor
< 1 GHz	100%	100% of 2.95 = 2.95
1 - 3 GHz	100%	100% of 2.95 = 2.95
3 - 5 GHz	75%	75% of 2.95 = 2.21
5 - 8.5 GHz	74%	74% of 2.95 = 2.18
10.7 – 15.35 GHz	33%	33% of 2.95 = 0.97
> 15.35 GHz	22%	22% of 2.95 = 0.65

6.6. Example calculations

Table 31: Fixed-link fees under the current and proposed schedules, worked examples (XCD per year)

Example link	Current: other microwave	Current: backhaul	Current: inter-site	Proposed
2x5 MHz, below 1 GHz (10 MHz, factor 2.95)	5,500	7,000	5,500	9,912
2x10 MHz, 3 to 5 GHz (20 MHz, factor 2.21)	6,000	10,000	6,000	14,851
2x40 MHz, 10.7 to 15.35 GHz (80 MHz, factor 0.97)	15,000	18,000	15,000	26,074

Note: proposed fee = 336 x total MHz x band factor.

We note that the change in any individual fee depends on the link. Holders of narrow links in higher bands may pay less, while holders of wide links, who are most heavily discounted under the present schedule, pay more. The worked examples above rise mainly because the current schedule charges additional bandwidth at a steep discount, an implicit subsidy that the proposed formula removes.

7. Broadcasting fees

In this section we set out our proposals for broadcasting fees. The fee proposal consists of an inflation adjustment of 39% to broadcasting channel fees, applied uniformly across Member States. We also propose a targeted relief mechanism for qualifying public-interest broadcasters, and we are open about the harmonisation effect on broadcasters in states that currently charge less than the prevailing schedule.

7.1. Proposed fees

Table 32: Proposed broadcasting channel fees (XCD per year)

Fee type	Current (prevailing)	Proposed	Increase
AM channel fee	500	700	200
FM channel fee	2,000	2,800	800
TV channel fee	3,300	4,600	1,300

Note: The adjustment applies the population-weighted cumulative consumer price inflation of approximately 39% since 2006.

The proposal is based on cost recovery. Broadcasting channel fees contribute to the cost of spectrum authorisation, coordination, monitoring and enforcement. These costs have risen materially since 2006, and the proposed schedule restores the 2006 channel fees in real terms.

We propose that the channel fee schedule apply uniformly in every Member State. This has a larger effect in St Vincent and the Grenadines, where the current FM and TV channel fees are XCD500 and XCD300 respectively. We particularly invite responses from broadcasters in that Member State.

Question 9: Do you agree with a 39% inflation adjustment to broadcasting channel fees, applied uniformly across Member States as the default schedule?

7.2. Current fees

Broadcasting fees have two parts: a flat fee per station, which is remitted to the Member State, and a fee per frequency channel, which is charged by ECTEL. Current levels vary across states, as Table 33 shows.

Table 33: Current broadcasting fees by Member State (XCD per year)

Member State	Station fee (AM/FM/TV)	AM channel	FM channel	TV channel
Dominica	500	500	2,000	3,5000
Grenada	500	500	2,000	3,000
St Kitts and Nevis	3,500	500	2,000	3,000
Saint Lucia	3,500	500	2,000	3,000
St Vincent and the Grenadines	3,500	500	500	300

7.3. International Benchmarking - Audio broadcasting

In the following sections, we present details of spectrum fee regimes for audio broadcasting in a range of benchmark countries and identify common themes and best practices. The benchmark countries we have studied include the Bahamas, the British Virgin Islands, Cape Verde, Mauritius, the Seychelles, Trinidad and Tobago, the United Kingdom, and the United States.

7.3.1. Bahamas

The URCA has set fees per frequency channel for AM and FM radio broadcasting, as shown below. Fees assume channel widths of 30 and 200 kHz for AM and FM radio respectively[24].

Table 34: Radio Broadcasting - Bahamas

	National / New Providence (LCU)	Grand Bahama (LCU)	Other Islands (LCU)	National / New Providence (XCD)	Grand Bahama (XCD)	Other Islands (XCD)
AM radio – 30 kHz (national)	255	NA	NA	689	NA	NA
FM radio – 200 kHz	1,700	340	170	4591	918	459

7.3.2. British Virgin Islands

In a June 2025 Consultation, the Telecommunications Regulatory Commission (TRC) proposed flat, annual fees for audio broadcasting. These are USD3050, i.e., XCD8243, per year per broadcasting station. This fee applies to both AM and FM stations, and there is no additional charge based on bandwidth used[25].

7.3.3. Cape Verde

ARME has set fees per sound broadcasting stations which vary with the radiated power of the station and the congestion level of the region under broadcast[26]. The **half-yearly fee** is calculated as per the following formula.

$$Fee\ per\ station\ (CVE) = 11{,}000 \times Power\ Factor \times Congestion\ Factor$$

$$Fee\ per\ station\ (XCD) = 312 \times Power\ Factor \times Congestion\ Factor$$

The power factor is determined by the schedule below.

[24] Fee data were obtained from the URCA's 2024 fee schedule

[25] Fee data were obtained from the TRC's 2025 consultation on fee structure requirements

[26] Fee data were obtained from the Ministry of Finance's Ordinance No. 29/2025

Table 35: Radio Broadcasting – Cape Verde

P.A.R. (W)	Power Factor
≤ 50	1
$50 < PAR \leq 100$	1.2
$100 < PAR \leq 200$	1.3
$200 < PAR \leq 300$	1.4
$300 < PAR \leq 500$	1.5
$500 < PAR \leq 1000$	2.2
$1000 < PAR \leq 3000$	3
> 3000	5

Similarly, the congestion factor is determined as follows.

Table 36: Radio Broadcasting – Cape Verde Congestion Factor

Site	Congestion Factor
Mount Tchota, Monte Verde, Morro Curral	1.2
Mount Thought, Serra Malagueta, Stone Rachada, Monte Gordo	1.1
Others	1

7.3.4. Mauritius

The Information and Communication Technologies Authority collects fees for audio broadcasting. Fee amounts vary with power levels, but not with the bandwidth of spectrum utilised[27].

[27] Fee data were obtained from the Information and Communication Technologies (Licensing and Fees) Regulations 2003

Table 37: Radio Broadcasting – Mauritius

Apparatus	Annual Fees (Rs)	Annual Fees (XCD)
MF/HF Radio Broadcasting Transmitter	7,000	412
VHFFM Radio Broadcasting Transmitter ($EIRP \geq 1kW$)	5,000	294
VHFFM Radio Broadcasting Transmitter ($1\ kW > EIRP \geq 200\ W$)	3,000	177
VHF FM Radio Broadcasting Transmitter ($200\ W > EIRP$)	2,000	118

7.3.5. Seychelles

The Seychelles Communications Regulatory Authority (SCRA) collects a flat fee of SRC 100,000, i.e., XCD19,979, for commercial sound broadcasting services[28].

7.3.6. Trinidad and Tobago

The Telecommunications (Fees) Regulations establish spectrum fees for FM broadcasting services, which vary with the frequency band used[29].

Table 38: Radio Broadcasting – Trinidad and Tobago

Band	Service	Licence Fee (TTD)	Licence Fee (XCD)
30 – 216 MHz	Radio (FM) – National or major territorial	252 / kHz	101 / kHz
	Radio (FM) – Niche or minor territorial	80 / kHz	32 / kHz
216 – 960 MHz	FM Radio Station Licence	10 / kHz pair	4 / kHz pair
	FM Radio – Outside Broadcasts	10 / kHz pair	4 / kHz pair

7.3.7. United Kingdom

Ofcom issues radio licenses, against fees based on broadcasters' turnover as indicated in the table below.

[28] Fee data were obtained from the Licences (Broadcasting and Telecommunications) Regulations, 2021

[29] Fee data were obtained from the Telecommunications (Fees) Regulations, 2006

Table 39: Radio Broadcasting – United Kingdom

Turnover (GBP)	Turnover (XCD)	Fee as % of Turnover
0 – 1,000,000	0 – 3,543,894	0.142%
1,000,000 – 5,000,000	3,543,894 – 17,719,472	0.214%
> 5,000,000	> 17,719,472	0.320%

The payable fee is set to zero where the fee computed through the above turnover method is less than £100, i.e., XCD354.

Additionally, Ofcom charges flat fees for radio multiplex licenses. The annual fee is £10,000 (XCD35,439) for national licenses and £500 (XCD1,772) for local licenses[30].

7.3.8. United States

FCC fees for AM and FM broadcasting depend on the population served and the class of the station[31]. Classes are defined by permitted power levels, HAAT, distance to protected service contours, and time limitations for operations:[32]

- **Class A Station.** A Class A station is an unlimited time station (that is, it can broadcast 24 hours per day) that operates on a clear channel. The operating power shall not be less than 10 kilowatts (kW) or more than 50 kW;
- **Class B Station.** A Class B station is an unlimited time station. Class B stations are authorised to operate with a minimum power of 0.250 kW (250 watts) and a maximum power of 50 kW. (If a Class B station operates with less than 0.250 kW, the RMS must be equal to or greater than 107.5 mV/m at 1 km at the actual power.) If the station is authorised to operate in the expanded band (1610 to 1700 kHz), the maximum power is 10 kW;
- **Class C Station.** A Class C station is an unlimited time station that operates on a local channel. The power shall not be less than 0.25 kW nor more than 1 kW. Class C stations that are licensed to operate with 0.100 kW may continue to operate as licensed; and
- **Class D Station.** A Class D station operates either *daytime, limited time, or unlimited time with a nighttime power less than 0.250 kW* and an equivalent RMS antenna field less than 107.5 mV/m at 1 km at the actual power. Class D stations shall operate with *daytime* powers not less than 0.250 kW nor more than 50 kW. Note that if a station is an existing daytime-only station, its class will be Class D.

The following fee schedule applies to AM broadcasting stations. Fee amounts are in USD and are converted to XCD using 2025 nominal exchange rates in parentheses.

30 Fee data were obtained from Ofcom's 2025-26 tariff tables

31 Fee data were obtained from the FCC's 2023 Regulatory Fees Report

32 https://www.fcc.gov/media/radio/am-clear-regional-local-channels#:~:text=Class%20A%20Station.,or%20more%20than%2050%20kW.

Table 40: Radio Broadcasting – USA (AM)

Population	Class A	Class B	Class C	Class D
0 – 10,000	545 (1,471.5)	395	340 (918)	375 (1,012.5)
10,001 – 25,000	910 (2,457)	655	570 (1,539)	625 (1,687.5)
25,001 – 75,000	1,365 (3,685.5)	985	855 (2,308.5)	940 (2,538)
75,001 – 150,000	2,050 (5,535)	1,475	1,285 (3,469.5)	1,405 (3,793.5)
150,001 – 500,000	3,075 (8,302.5)	2,215	1,925 (5,197.5)	2,115 (5,710.5)
500,001 – 1,200,000	4,605 (12,433.5)	3,315	2,885 (7,789.5)	3,160 (8,532)
1,200,001 – 3,000,000	6,915 (18,670.5)	4,980	4,330 (11,691)	4,750 (12,825)
3,000,001 – 6,000,000	10,365 (27,985.5)	7,460	6,490 (17,523)	7,120 (19,224)
> 6,000,000	15,550 (41,985)	11,195	9,740 (26,298)	10,680 (28,836)

The following fee schedule applies to FM broadcasting stations. Fee amounts are in USD and are converted to XCD using 2025 nominal exchange rates in parentheses.

Table 41: Radio Broadcasting – USA (FM)

Population	Classes A, B1, C1	Classes B, C, C0, C1, C2
0 – 10,000	600 (1,620)	685 (1,849.5)
10,001 – 25,000	1,000 (2,700)	1,140 (3,078)
25,001 – 75,000	1,500 (4,050)	1,710 (4,617)
75,001 – 150,000	2,250 (6,075)	2,565 (6,925.5)
150,001 – 500,000	3,380 (9,126)	3,855 (10,408.5)
500,001 – 1,200,000	5,060 (13,662)	5,770 (15,579)
1,200,001 – 3,000,000	7,600 (20,520)	8,665 (23,395.5)
3,000,001 – 6,000,000	11,390 (30,753)	12,985 (35,059.5)
> 6,000,000	17,090 (46,143)	19,485 (52,609.5)

7.3.9. Fee structure proposal

Table 42 summarises our findings with regard to the structure of the audio broadcasting fees in our benchmark countries. We observe the following across our benchmark set:

- **Most jurisdictions charge a flat or per-station fee.** ECTEL's current fee regime includes a fixed fee per station and is thus in line with international benchmarks.
- **Most jurisdictions do not include a fee that scales with bandwidth or the number of channels.** ECTEL's current licensing regime is at odds with this observed trend. However, there are good reasons to include a fee per channel as it incentivises the efficient use of spectrum.

ECTEL's current regime includes a flat fee per station and a fee per channel. The proposed revisions in this consultation apply only to channel fees.

Table 42: Radio Broadcasting – Common themes

	Flat Fee	Bandwidth	Frequencies Used	Population	Broadcast Turnover	Power
Bahamas		✓				
British Virgin Islands	✓					
Cape Verde	✓			✓		✓
Mauritius	✓					✓
Seychelles	✓					
Trinidad and Tobago		✓	✓	✓		
United Kingdom	✓	✓			✓	
United States	✓			✓		✓
ECTEL	✓	✓				

7.3.10. Benchmarking of current fees and our proposed update

In this section, we benchmark the current station for context and assess the proposed channel fees against international benchmarks.

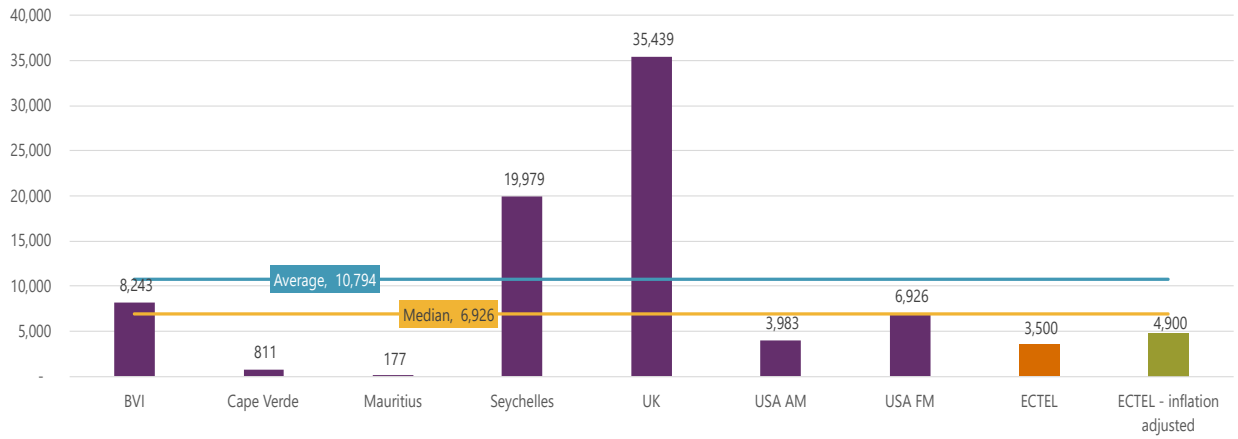
Station fee

As noted in Table 42, most countries charge a 'per station' or 'flat fee', so we can compare the current ECTEL station fees to these. Some countries have station fees that vary with the power level or coverage. To make them comparable to the station fees in the ECTEL Member States, we have made the following assumptions:

- Mauritius: Power of 200W;
- Cape Verde: Congestion factor of 1 (other areas) and power of 200 W; and
- USA: Class B license covering a population of 75,000 – 150,000 (comparable to most ECTEL Member States).

In Figure 31, we compare the station fees in benchmark countries with the current ECTEL station fees as well as the inflation-adjusted ECTEL fees. The comparison is provided for context only and does not form part of the proposed fee revisions in this consultation. The median of our benchmark sample exceeds the inflation adjusted ECTEL fees.

Figure 31: Radio Broadcasting – Station fee benchmarks



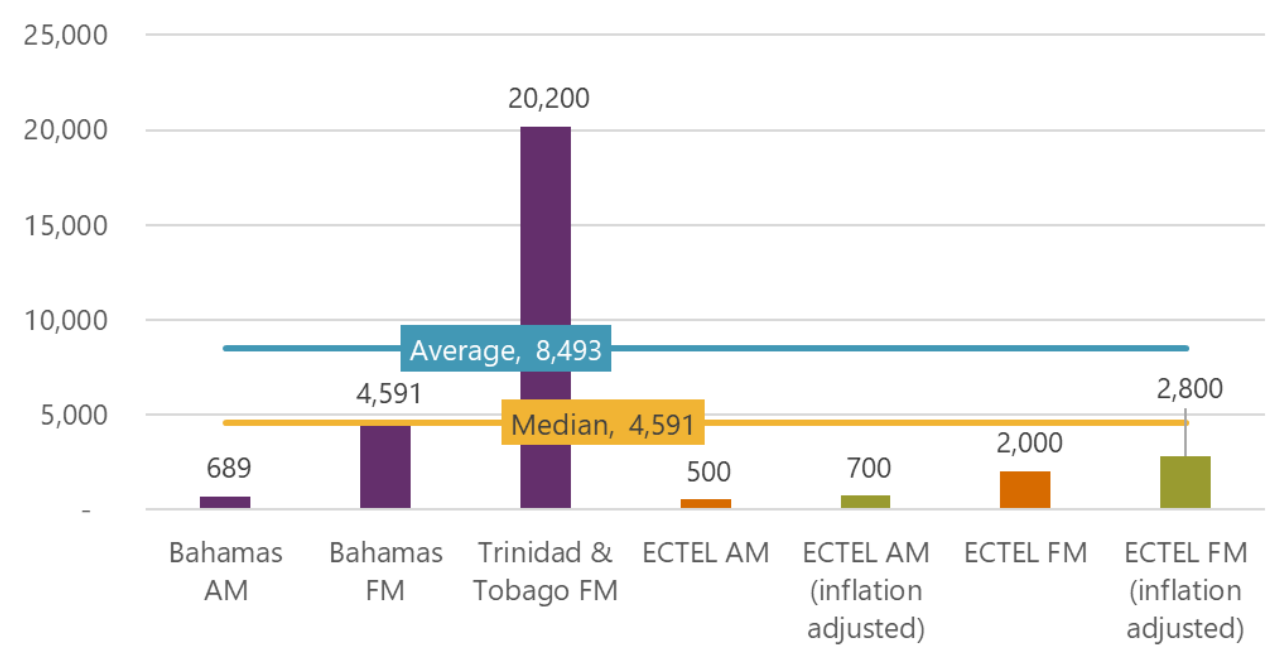
Channel Fee

Only the Bahamas and Trinidad & Tobago charge fees that scale with bandwidth or the number of channels. To make the figures comparable, we make the following assumptions:

- Bahamas: National coverage; and
- Trinidad & Tobago: National 200 kHz FM channel in 30 – 216 MHz.

In Figure 32, we compare the current and inflation-adjusted ECTEL channel fees to the fees in the Bahamas and in Trinidad and Tobago. We find that the inflation-adjusted ECTEL channel fee is well below the levels charged for channels in these two countries. We therefore conclude that an inflation adjustment is in line with international benchmarks.

Figure 32: Radio Broadcasting – Channel fee benchmarks



7.4. International Benchmarks - TV broadcasting

7.4.1. Bahamas

The URCA levies a fee of **$3,000 (XCD8,102) per TV broadcasting station** per year. Additional frequency authorisation fees per multiplex apply, as reflected below.

Table 43: TV Broadcasting - Bahamas

	National / New Providence (LCU)	Grand Bahama (LCU)	Other Islands (LCU)	National / New Providence (XCD)	Grand Bahama (XCD)	Other Islands (XCD)
TV – 6 MHz (commercial)	5,100	1,020	510	13,774	2,755	1,377

7.4.2. British Virgin Islands

In a June 2025 Consultation, the TRC proposed a flat, annual fee of **USD3050, i.e., XCD8243, per broadcasting TV station**. There is no additional charge based on bandwidth used.

7.4.3. Cape Verde

ARME charges a half-yearly per-MHz fee for TV broadcasting services as set out in Table 44.

Table 44: TV Broadcasting – Cape Verde

Fee Description	Amount per 6 months (CVE)	Amount per 6 months (XCD)
Multiplexer intended for the transmission of unrestricted access television program services – free-to-air	$10{,}000 \times Bandwidth\ (MHz)$	$284 \times Bandwidth\ (MHz)$
Multiplexer intended for the transmission of conditional access television program services – pay-tv	$15{,}000 \times Bandwidth\ (MHz)$	$426 \times Bandwidth\ (MHz)$

7.4.4. Mauritius

ICTA fees for television broadcasting transmitters vary with power levels, but not with the bandwidth of spectrum utilised.

Table 45: TV Broadcasting – Mauritius

EIRP of Transmitter	Annual Fees (Rs)	Annual Fees (XCD)
$EIRP \geq 1kW$	20,000	1,178
$1\ kW > EIRP \geq 100\ W$	12,000	707
$100\ W > EIRP$	8,000	471

7.4.5. Seychelles

The Seychelles Communications Regulatory Authority (SCRA) collects a flat fee for commercial television broadcasting services. The fee amount is the maximum of:

(i) SRC 250,000, i.e., XCD49,946, and

(ii) 0.005 per cent of the annual gross receipts of the service.

7.4.6. Trinidad and Tobago

The Telecommunications (Fees) Regulations establish spectrum fees for television broadcasting services, which vary with the frequency band used.

Table 46: TV Broadcasting – Trinidad and Tobago

Band	Service	Licence Fee (TDD)	Licence Fee (XCD)
30 – 216 MHz	Television VHF – National or major territorial	45 / kHz	18 / kHz
	Television VHF – Niche or minor territorial	21 / kHz	8 / kHz
216 – 960 MHz	Television UHF – National or major territorial	25 / kHz	10 / kHz
	Television UHF – Niche or minor territorial	21 / kHz	8 / kHz
960 – 5850 MHz	Outside broadcasts	790 / MHz pair	315 / MHz pair

7.4.7. United Kingdom

Ofcom charges flat fees for television multiplex licenses. The annual fee amount is £10,000 (XCD35,439) for a digital multiplex and £5,000 (XCD17,719) for a local multiplex.

7.4.8. United States

The FCC utilises a population-based regulatory fee for full-service broadcast television. Broadcasters must pay $0.006674, i.e., XCD0.018, per person served.

7.4.9. Common themes across country benchmarks

As with sound broadcasting fees, the factors determining the fee level across benchmarked countries vary significantly. The list of all inputs determining the fee for television broadcasting is similar to sound broadcasting. However, the fee functions sometimes differ, as set out in Table 47.

Operators in ECTEL Member States currently pay a fee per station (which is remitted to each Member States' government) and per channel (which is charged by ECTEL). This approach is in line with international practice:

- **Channel fee:** Four countries either adjust the fee for the bandwidth or the number of multiplexes or channels. These adjustments are closely comparable, as the number of channels is linked to the MHz that a user requires; and
- **Station fee:** Three countries in our benchmark set charge station fees.

Only one country in our benchmark set adjusts fees based on the frequency band used. While this may be a good approach in countries where there may be competing users for some bands (and perhaps not others), this is unlikely an issue in ECTEL Member States.

Table 47: TV Broadcasting – Common themes

	Flat Fee	Fee per multiplex / MHz	Power	Frequency band used	Broadcast Turnover	Population
Bahamas	✓	✓				
British Virgin Islands	✓					
Cape Verde		✓				
Mauritius	✓		✓			
Seychelles	✓				✓	
Trinidad and Tobago		✓		✓		
United Kingdom		✓				
United States	✓					✓
ECTEL	✓	✓				

7.5. Targeted relief for public-interest broadcasters

We recognise that some broadcasting licensees may face genuine affordability constraints, particularly where services are provided on a community, cultural, educational, emergency-information or other public-interest basis without a sufficient commercial revenue base. We therefore propose that the adjusted schedule apply as the default, and that ECTEL may operate a targeted exemption, reduction or phased-payment mechanism for qualifying broadcasters. Relief would be application-based and evidence-based: applicants would demonstrate the public-interest

service provided, its non-commercial character, and the financial basis of the inability to pay. Relief would be time-limited and periodically renewed, so that genuine constraint is distinguished from payment indiscipline. We do not propose general non-enforcement or an across-the-board freeze: the benchmark evidence supports the default fee level, and relief is a public-interest adjustment, not a judgement that the cost-recovery fee is too high for commercial broadcasting.

Question 10: Do you agree with the proposed targeted relief mechanism for qualifying public-interest broadcasters? What eligibility criteria, evidence requirements and review periods should apply?

8. Satellite and non-terrestrial network fees

In this section we set out our proposals for satellite earth stations and for the new non-terrestrial network (NTN) licence class. This is the one part of the package where fees fall. It also completes the framework we consulted on in 2025 for NTN services, and responds to the submissions we received, including on the basis of the revenue fee. Because these authorisations generally involve shared or coordinated use and do not confer exclusive national spectrum rights comparable to IMT authorisations, the fees in this section are set principally on nominal and cost-recovery principles.

8.1. Proposed fees

Table 48: Satellite and NTN fees: current and proposed (XCD per year)

Item	Current	Proposed
VSAT earth station, Ku band	12,000 per frequency	6,000 per VSAT
VSAT earth station, C band	15,000 per frequency	6,000 per VSAT
Gateway earth station, C band	60,000 per frequency pair	20,000 per station
Gateway earth station, Ku band	50,000 per frequency pair	20,000 per station
NTN class licence	n/a	3% of gross annual revenue (initial fee and annual minimum XCD5,000)
NTN spectrum fee, shared satellite bands	n/a	25 per MHz per Member State

Three structural moves underlie the table. First, earth station fees shift from a per-frequency to a per-station basis, which simplifies administration and future-proofs the schedule as new bands (for example Ka) come into use. Second, fee levels fall toward benchmark norms. Third, a single linear NTN spectrum fee replaces the three-tier point-to-multipoint fee proposed in our 2025 consultation (XCD12,000, 25,000 and 60,000 for bandwidths below 10 MHz, 10 to 100 MHz, and above 100 MHz respectively).

8.2. Current fees

The current schedule charges satellite earth stations on a per-frequency basis: VSAT earth stations at XCD12,000 per frequency in the Ku band and XCD15,000 per frequency in the C band, and gateway earth stations at XCD50,000 per frequency pair in the Ku band and XCD60,000 per frequency pair in the C band. There is at present no NTN class licence and no NTN spectrum fee; the NTN framework was the subject of a separate ECTEL consultation in 2025, whose proposals this section revisits.

8.3. Earth station fees

For gateway earth stations, the benchmark median is XCD8,027 per gateway across a ten-country sample in which most fees are modest. The proposed fee of XCD20,000 per station therefore sits deliberately above the international median, and we should be clear about why: land in the Member States is scarce in a way it is not in most benchmark countries. Saint Lucia's land area is 617 square kilometres, against Jamaica's 10,991 and the United Kingdom's 243,610; a large gateway installation

encumbers terrestrial services and alternative land uses to a greater degree on a small island than in a country with remote land to spare. We weigh that consideration above strict benchmark parity, and we invite views on the balance.

For VSAT earth stations, current ECTEL fees are the third highest in the benchmark sample. The benchmark median is XCD1,770 per VSAT and the mean XCD6,351, the gap reflecting a small number of high-fee jurisdictions. The proposed fee of XCD6,000 per VSAT, uniform across bands, sits just below the mean. We propose no fee per user terminal: the benchmark median is XCD273 per terminal but most countries charge nothing, on the ground that per-terminal fees slow technology adoption, and the revenue-based licence fee below does the equivalent work without that distortion.

Question 11: Do you agree that satellite earth station and VSAT fees should be charged per station rather than per frequency, at XCD20,000 per gateway earth station and XCD6,000 per VSAT earth station, uniform across frequency bands?

8.4. International benchmarking – Ground component

In the following sections, we present details of spectrum fee regimes for the satellite ground component in a range of benchmark countries.

8.4.1. Bahamas

The URCA has established annual fees payable per satellite earth station.

Table 49: Gateway Earth Stations – Bahamas

Dish Size	Annual Fee per Gateway Earth Station (BSD)	Annual Fee per Gateway Earth Station (XCD)
Dish size ≥ 3 metres	4,500	12,095
Dish size < 3 metres	500	1,344

Note that VSAT stations have dish sizes of less than 3 meters and face the fees indicated above. Further, the URCA uses a step function to set spectrum fees per satellite user terminal. The function varies by region, as reflected in the table below.

Table 50: User Terminals – Bahamas

Region	Number of User Terminals	Annual Fee per User Terminal (BSD)	Annual Fee per User Terminal (XCD)
New Providence	0 – 5,000	500	1,345
	5,001 – 10,000	333	896
	≥ 10,001	167	449
Grand Bahama	0 – 1,000	100	269
	1,001 – 2,000	67	180
	≥ 10,000	33	89
All other islands	0 – 1,333	50	135
	1,334 – 2,666	33	89
	≥ 2,666	17	46

Finally, the URCA has set bandwidth-related fees which apply to all services excluding cellular mobile, including satellite operations. These per-MHz fees depend on the specific frequency bands under use.

Table 51: Bandwidth-Based Fees (per MHz) – Bahamas

Frequency	National / New Providence (BSD)	Grand Bahama (BSD)	Other Islands (BSD)	National / New Providence (XCD)	Grand Bahama (XCD)	Other Islands (XCD)
0 – 960 MHz	8,500	1,700	850	22,865	4,573	2,287
960 – 2,200 MHz	4,250	850	425	11,433	2,287	1,143
2,200 – 6,700 MHz	425	85	42.50	1,143	229	114
6,700 – 30,000 MHz	85	17	8.50	229	46	23
> 30,000 MHz	42.5	8.50	4.25	114	23	11

8.4.2. British Virgin Islands

In its June 2025 consultation on spectrum fees, the TRA has proposed an annual fee of USD2,970 (i.e., XCD8,027) per gateway earth station and USD510 (i.e., XCD1,378) per VSAT terminal. There is no evidence of additional fees per MSS terminal.

8.4.3. Cape Verde

ARME charges a flat, half-yearly fee of ECV3,000,000, (i.e., XCD84,724) per FSS or MSS gateway. Additional half-yearly fees depend on the number of VSAT stations and mobile terminals in use.

Table 52: Mobile User Terminals – Cape Verde

Number of Terminals	Fee Amount (ECV)	Fee Amount (XCD)
1	20,000	560
2 – 5	40,000	1,120
6 – 50	60,000	1,680
51 – 500	100,000	2,800
501 – 1000	300,000	8,400
> 1,000	400,000	11,200

Table 53: VSAT Stations – Cape Verde

Number of Stations	Fee Amount (ECV)	Fee Amount (XCD)
1	20,000	560
2 – 5	40,000	1,120
6 – 50	60,000	1,680
51 – 500	100,000	2,800
501 – 1000	300,000	8,400
1001 – 4000	400,000	11,200
> 4,000	100 × Number of Stations	2.82 × Number of Stations

Note that the tabulated fee amounts are flat fees, not per terminal / VSAT station rates.

8.4.4. Jamaica

The Spectrum Management Authority (SMA) levies an annual spectrum fee of JMD 500,000 (i.e., XCD8,412) on gateway earth stations for commercial purposes. The annual fee for gateway earth stations for emergency purposes is JMD50,000 (i.e., XCD841).

Further, the SMA has adopted a two-tiered approach to VSAT terminal fees[33].

[33] Fee data were obtained from the SMA's 2020 report: Development of Spectrum Pricing Fee Structures

Table 54: VSAT Terminals – Jamaica

Number of Stations	Fee Amount (JMD)	Fee Amount (XCD)
Up to 30	200,000	3,365
Over 30	6,500 per terminal	109

8.4.5. Mauritius

The ICTA charges an annual spectrum fee of Rs50,000 (i.e., XCD2,924) for each FSS gateway earth station, portable satellite communication terminal, and VSAT terminals.

8.4.6. Seychelles

The SCRA charges SCR5,000 (i.e., XCD964) annually per FSS gateway earth station. This annual fee also applies per VSAT terminal. The annual fee per MSS terminal is SCR 500 (i.e., XCD96).

8.4.7. Trinidad and Tobago

The Telecommunications Authority of Trinidad and Tobago (TATT) has established annual fees for earth stations, mobile terminals, and VSAT stations which vary with the bandwidth of spectrum used.

Table 55: Satellite Fees – Trinidad and Tobago

Service	Fee Amount (TDD)	Fee Amount (XCD)
Gateway Earth Station	15,000 / MHz	5,976 / MHz
VSAT Station	150 / kHz	60 / kHz
Portable Satellite Communication System	1.60 / kHz	0.64 / kHz

8.4.8. United Kingdom

Ofcom uses the following formula to compute the annual fees for a permanent earth station license.

$$Annual\ Sum = \sum_{bands}\left[28 \times BF_{band} \times \sqrt{\left\{\sum_{paths_{band}} P_{path} \times BW_{path}\right\}}\right]$$

Each term in the above formula is defined as follows:

- Bands: the numbers listed in Column 1 of Table 34, corresponding to the range of frequency band listed in Column 2 of that table which are authorised by the license;
- BF_{band}: the band factor applying to each band, being the number in Column 3 of Table 34 corresponding to the band listed in Column 1 of the same table;

- $Paths_{band}$: the set of those transmission paths authorised by the license for which the authorised transmission frequency lies within the frequency range of each band as set out in Column 2 of Table 34;
- P_{path}: the authorised peak transmit power (in Watts) at the flange of the antenna of the earth station for each transmission path;
- BW_{path}: the authorised transmit bandwidth (in MHz) for each transmission path; and
- Transmission path: a combination of a satellite earth station transmitter, a satellite receiver, a transmission frequency, and polarisation for which transmissions are authorised by the license.

Note that when the amount implied by the formula is less than £500, i.e., XCD1,770, Ofcom sets the fee to £500.

Table 56: Inputs for permanent earth stations fee formula – United Kingdom

Band	Range of frequency band (fb) in GHz	Band factor
1	fb < 5	2.33
2	5 ≤ fb < 10	1.72
3	10 ≤ fb < 16	1
4	16 ≤ fb < 24	0.7
5	fb ≤ 24	0.6

Further, Ofcom has established flat, annual fees for non-FSS terminals, non-geostationary earth stations, and satellite terminals[34].

Table 57: Additional Satellite Fees – United Kingdom

Service	Fee Amount (GBP)	Fee Amount (XCD)
Non-FSS Earth Station	500 / station	1,766 / station
Non-Geostationary Earth Station	500 / station	1,766 / station
Terminal requiring technical coordination by Ofcom	200 / terminal	707 / terminal

8.4.9. United States

The FCC collects an annual regulatory fee of USD2,060 (i.e., XCD5,567) per earth station. There is no evidence of additional per-terminal fees.

8.4.10. Common themes across country benchmarks

In a first instance, we analyse the fee structures for Mobile and Fixed Satellite Services in our benchmark sample. There is considerable diversity among countries in terms of the level, structure,

[34] Fee data were obtained from Ofcom's satellite fee schedule

and complexity of fees imposed on satellite operators. Table 58 shows the fee structure for several benchmarked countries, highlighting whether the regulator implements a fixed fee structure and if fees are determined by the number of gateways, user terminals, VSAT user terminals or the total bandwidth utilised.

Gateway fees are typically calculated as a unit price per MHz multiplied by the authorised bandwidth or as fixed fees per gateway. However, some countries employ complex formulas that incorporate engineering factors. User terminal fees (for mobile user terminals or VSAT user terminals) are usually straightforward unit fees per terminal, though some countries offer volume discounts or fees that vary based on the authorised bandwidth. Bandwidth fees are generally structured as a unit fee per MHz multiplied by the authorised bandwidth, but they typically do not increase with the number of user terminals.

We excluded revenue-based fees from our survey, as these fees are similar to consumption taxes and are therefore independent of the spectrum's cost. However, we note that they may be appropriate in certain circumstances.

Table 58: Main elements of fixed satellite fee structure in surveyed countries

Country	Bandwidth Fee	Gateway Fee	VSAT Fee	User Terminal Fee
Bahamas	✓	✓	✓	✓
British Virgin Islands		✓	✓	
Cape Verde		✓	✓	✓
Jamaica		✓	✓	
Mauritius		✓	✓	✓
Seychelles		✓	✓	✓
Trinidad & Tobago	✓	✓	✓	✓
United Kingdom	✓	✓	✓	
United States		✓	✓	

The benchmarks show that all countries charge a fee for gateways and VSATs, but not necessarily for user terminals. Only three countries in our sample charge fees based on bandwidth. We consider these three fee types in depth below. We do not believe it is necessary to separately benchmark bandwidth related fees as: (a) they are seldom used in practice; and (b) are complicated by the fact that a satellite operator may be assigned a much larger bandwidth than they are using at any given time. This complicates the setting fees based on bandwidth.

8.4.11. Gateways

For gateways, we reviewed the different inputs that make up the fee across countries and find that they either depend on the demanded spectrum or the network size, as shown in Table 59.

Table 59: Gateway fee factors across benchmarks

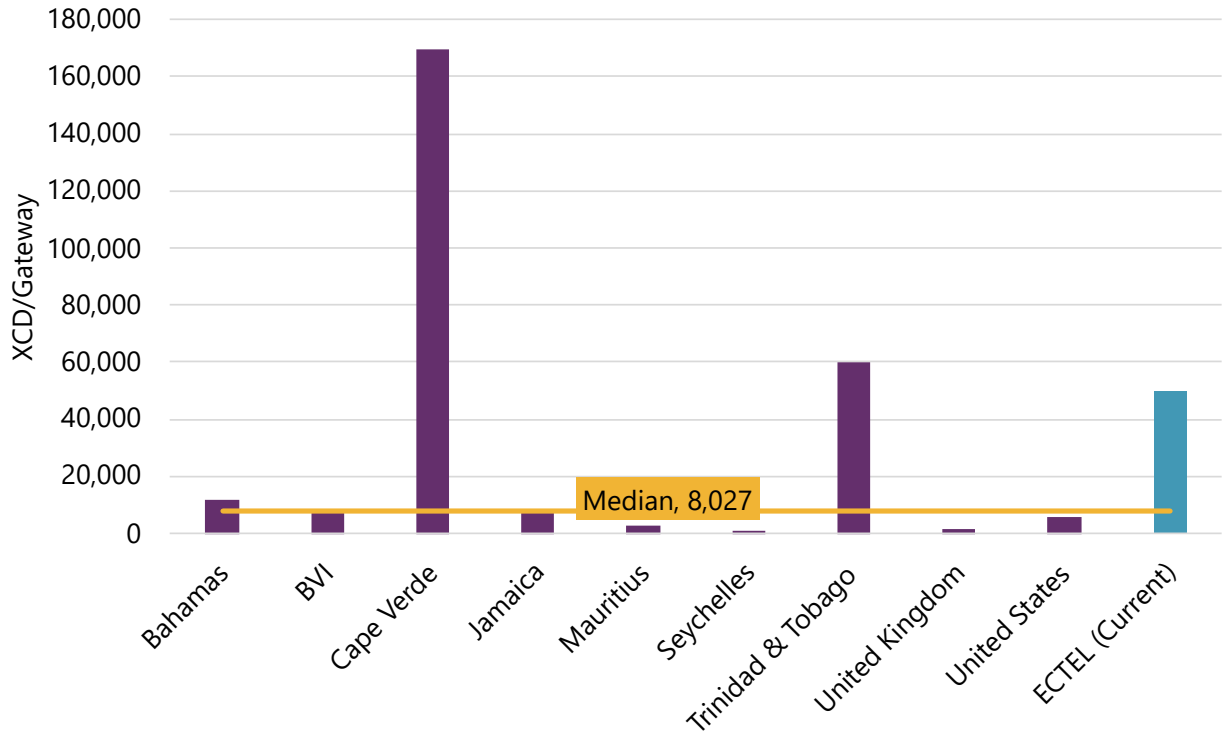
Spectrum	Network
Assigned Bandwidth [in MHz]	Number of gateways
Used Bandwidth [in MHz]	Number of connections to the space segment *(only Cape Verde)*
Band type	Type of constellation [GSO vs. NGSO]

We surveyed 10 countries across the Caribbean as well as the US and UK[35]. Fees per gateway are reported in Figure 33. We note that most countries appear to charge relatively modest fees per gateway, with the exception of Cape Verde and Trinidad and Tobago. Trinidad and Tobago charges a gateway fee per MHz. We display the fee for an allocation of 10 MHz, which results in a fee per gateway of XCD59,760 to ensure an appropriate scale in the figure. Using a more realistic bandwidth of 2000 MHz would result in a higher fee of XCD11.95 million – the highest in the sample.

The median fee in our sample amounts to XCD8,027 per gateway. This is significantly lower than ECTEL's current fee of XCD50,000 to 60,000 per gateway for Ku and C-band respectively. However, we note that many of the ECTEL islands are relatively small, and therefore large gateway installations may cause significantly greater geographic encumbrance on terrestrial services than in larger countries such as the US, UK or even Jamaica, which have remote areas, ideal for gateway placement. For reference, the UK has a land mass of 243,610 km^2, Jamaica has a land mass of 10,991 km^2, whereas St. Lucia for example only has a land mass of 617 km^2. For this reason, we propose to reduce the fee in ECTEL Member States down to XCD20,000 per gateway for all frequency bands. Our proposed fee is lower than the current ECTEL fee, but higher than the benchmark sample median.

35 Where countries adopt a tiered fee schedule, with fees dependent on the number of gateways, we benchmark the lowest possibly fee per gateway, for consistency, as this is the level large operators would expect to pay in the long run as they develop their infrastructure.

Figure 33: Annual spectrum fee per gateway

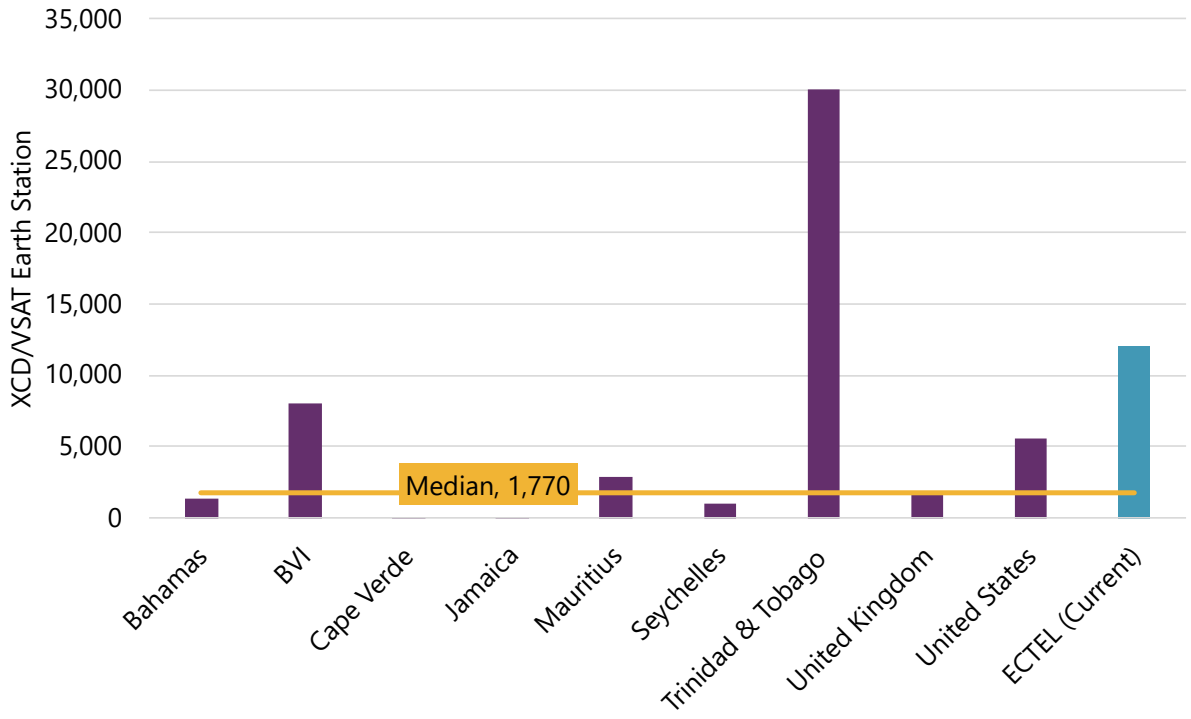


Note: *All fees are per gateway and adjusted to XCD using FX rates.* ***Trinidad and Tobago's fee is a function of bandwidth used and is displayed here for a bandwidth of 10 MHz to ensure appropriate charting scale****. Using a more realistic bandwidth of 2000 MHz would result in a higher fee of XCD11.95 million – the highest in the sample. For simplicity, fees for the United Kingdom are benchmarked as a simple flat fee of XCD1770 per station. In practice, fees for certain installations may exceed this fee level.*

8.4.12. VSAT Earth Stations

We now benchmark fees per VSAT Earth Station across the same sample of 10 countries. As shown in Figure 344, ECTEL's current VSAT fees are third highest among the benchmark sample, at XCD12,000-15,000 per VSAT earth station, behind Trinidad and Tobago and the British Virgin Islands. However, we note that the fees regulations we reviewed for Trinidad and Tobago have not been updated since 2006, and therefore may not represent modern day best practice. We observe a median fee of XCD1,770 per VSAT Earth Station. On this basis, we propose to reduce the current VSAT Earth Station fee to XCD6,000 per VSAT Earth Station per year for all frequency bands. This is below the mean VSAT Earth Station fee observed in our sample of XCD6,351 per VSAT Earth Station.

Figure 34: Annual spectrum fee per VSAT earth station



Note: *All fees are per VSAT earth station and adjusted to XCD using FX rates.* ***Trinidad and Tobago's fee is a function of bandwidth used and is displayed here for a bandwidth of 500 kHz to ensure appropriate charting scale****. For simplicity, fees for the United Kingdom are benchmarked as a simple flat fee of XCD1770 per station.*

8.5. International benchmarking – Space component

In the following sections, we present details of spectrum fee regimes for the satellite space component in a range of benchmark countries.

8.5.1. India

The Telecommunications Regulatory Authority of India (TRAI) has proposed fees for GSO and NGSO satellite services, including provision of voice, text, data, and internet. The fee schedule is shown in the table below, and fees are additionally subject to a floor of INR3,500 (XCD98.86) per MHz.[36]

Figure 35: Satellite space component fees - India

Fee category	Fee Amount (INR)	Fee Amount (XCD)
GSO FSS	4% of annual gross revenue	
GSO / NGSO MSS	4% of annual gross revenue	
NGSO FSS	4% of annual gross revenue + 500 * number of urban subscribers	4% of annual gross revenue + 14.12 * number of urban subscribers

8.5.2. United States

The FCC charges annual regulatory fees for space stations, on a per station or per constellation basis depending on the service.[37]

Figure 36: Satellite space component fees - United States

Fee category	Fee Amount (USD)	Fee Amount (XCD)
Space stations (geostationary)	178,700	482,946
Space stations (non-geostationary, small constellation)	409,320	1,106,208
Space stations (non-geostationary, large constellation)	2,274,000	6,145,599
Space stations (non-geostationary, small satellite)	14,635	39,552

8.5.3. Canada

ISED's fee schedule for spectrum use by satellite space stations is reflected in the table below. Fees vary with the bandwidth used, but not with the number of satellites deployed.[38]

Figure 37: Satellite space component fees - Canada

Fee category	Fee Amount (CAD)	Fee Amount (XCD)
Fee level 1: will apply from the deployment of the first satellite up until the deadline for full deployment of the constellation, as established at the initial licence issuance	62.42 / MHz	123.02 / MHz
Fee level 2: will apply thereafter and will continue until the end of the licence term.	124.84 / MHz	246.03 / MHz

8.5.4. Australia

ACMA offers five varieties of space system licences: earth receive, fixed earth, mobile earth, space, and space receive. The final two cover space-components of satellite systems. They carry a flat licence charge of AUD291 (XCD568) per spectrum access and a per kHz licence tax which varies with the specific frequencies used. The nationwide licence tax ranges from AUD1.2618/kHz (XCD2.46) in 0 – 30 MHz to AUD0.0029/kHz (XCD0.0057) in 51.4 – 100 GHz.[39]

8.6. NTN class licence fee

In September 2025, ECTEL consulted on the imposition of NTN class licence with an annual fee of 3% of gross annual revenue derived in the Member States, with the initial fee and annual minimum of XCD5,000. This is a service-provision fee, not a spectrum fee. As a result, we refer respondents to the 2025 NTN consultation.[40]

8.7. NTN spectrum fee

For NTN authorisations using spectrum shared with other users, or operated on a no-protection, no-interference basis, we propose a single linear spectrum fee of XCD25 per MHz per Member State per year. The rate is anchored to ISED's Fee Level 1 for NGSO space stations of CAD 62.42 per MHz (XCD123 per MHz); applied across the five ECTEL Member States, the regional aggregate of XCD125 per MHz approximates Canada's Fee Level 1 for a constellation serving the whole ECTEL area. The linear rate removes the tier cliffs at 10 and 100 MHz in the 2025 proposal, so that operators who use narrow bandwidths face substantially lower fees than under it. Where an NTN service uses IMT spectrum already licensed to a mobile network operator in the Member State, no further spectrum fee applies: use of this spectrum is already charged through IMT licence fees.

We stress that the proposed fee is not intended to price an exclusive satellite spectrum licence. If, in future, ECTEL or the Member States decide to allocate exclusive MSS spectrum licences for NTN service provision, the pricing approach should be reconsidered: opportunity-cost-based pricing, including a market-based award or an administratively set fee informed by market-value benchmarks, would be more appropriate than the modest XCD25 per MHz fee proposed for shared or non-exclusive authorisations. We will keep the regime under review as the direct-to-device landscape matures.

Question 12: Do you agree with a single linear NTN spectrum fee of XCD25 per MHz per Member State per year for shared, non-exclusive satellite spectrum, with no additional spectrum fee where the service uses IMT spectrum already licensed to a mobile network operator?

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36 Source: https://www.mobileworldlive.com/regulation/india-makes-progress-on-satcom-spectrum-fees/

37 Source: https://docs.fcc.gov/public/attachments/FCC-26-25A1.pdf

38 Source: https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/notice-no-smse-001-23-fee-order-space-stations

39 Source: https://www.acma.gov.au/sites/default/files/2025-09/Apparatus%20licence%20fee%20schedule%20%28September%202025%29.pdf

40 See: ECTEL, 2025, Consultation Paper on Recommendation to Amend the Licence Classification Notice to Include Non-Terrestrial Networks and Services Licence and the Telecommunications (Fees) Regulations of the ECTEL Member States for Point-to-Multipoint Wireless Services.

9. Other services

In this section we cover the remaining radiocommunications services. We propose one removal and no other changes. Where we could identify no reliable benchmark for a service, we propose to leave its fee unchanged: we have not raised any fee without evidence to support it.

Table 60: Other services: current and proposed fees (XCD per year)

Service	Current	Proposed	Basis
Paging, commercial / non-commercial	600 / 200 per frequency	Removed	No paging systems remain in use and the service is no longer invoiced.
Spread spectrum (900 MHz, 2.4 GHz, 5.8 GHz; FHSS and DSSS tiers)	5,000 to 25,000	Unchanged	Most benchmark countries do not charge for licence-exempt bands; ECTEL retains the fees, which are used for example by utilities transmitting meter readings, and levels are broadly in line with the Bahamas for small bandwidths.
Land mobile radio	200 per frequency	Unchanged	Benchmarks range very widely (from about XCD27 in the United States to several thousand in the Seychelles); no adjustment is supported.
Maritime mobile radio	200 per frequency, plus apparatus fees (base 75, repeater 500, mobile 75, handheld 50, ship stations 300 or 500)	Unchanged	Combined base-station-plus-channel benchmarks place the current fee at the upper end of the range; an inflation uplift is not supported.
Aeronautical mobile radio	200 per frequency, plus aircraft station 300 and related apparatus fees	Unchanged	The current fee already sits above the benchmark median (the United Kingdom is the outlier at approximately XCD11,682 per channel).
Community radio station	25 per frequency	Unchanged	A nominal fee that preserves the positive externalities of community broadcasting.
Television / radio studio transmitter links	500 / 200 per link	Unchanged	Short-range programme-making links; no change, to avoid deterring use.

Question 13: Do you agree with the removal of the paging entries from the fee schedule and with leaving fees for spread spectrum, land mobile, maritime mobile, aeronautical mobile, community radio and studio transmitter links unchanged?

9.1. International benchmarks

For each service where we propose no change, we set out below the benchmark evidence on which that judgement rests, so that the decision not to raise a fee is as transparent as the decisions to raise others.

9.1.1. Spread spectrum

Most benchmark countries do not charge for applications in licence-exempt bands. Among those that do, the fee structures differ enough to complicate comparison; the Bahamas, which charges per MHz, is broadly in line with the current ECTEL fees for small bandwidths and above them for larger ones.

Table 61: Spread spectrum fees across the benchmark set

Country	Fee regime	Converted (XCD)
Bahamas	Per MHz with band factors; assigned spectrum in 2.2 to 6.7 GHz at USD 425 per MHz (national)	1,148 per MHz
British Virgin Islands	No spread spectrum / ISM entry	-
Cape Verde	No spread spectrum / ISM entry	-
Jamaica	No spread spectrum / ISM entry	-
Mauritius	No spread spectrum / ISM entry	-
Seychelles	Wireless access network (private use), per band per year	999 per band
Trinidad and Tobago	Spread spectrum station licence; shared station fees by power tier	40 to 160
United Kingdom	No spread spectrum / ISM entry	-
United States	No spread spectrum / ISM entry	-

Note: Most benchmark regulators do not price licence-exempt bands. The current ECTEL fees are retained for the services that use them, including utility metering.

9.1.2. Land mobile radio

Benchmark fees for land mobile radio range very widely, from tens of XCD in the United States to several thousand in the Seychelles, with fee bases (per channel, per station, per equipment) that are not directly comparable. No adjustment to the current fee is supported.

Table 62: Land mobile radio benchmarks

Country	Converted fee (XCD)
Bahamas	574 (25 kHz below 470 MHz)
British Virgin Islands	95 (business mobile)
Cape Verde	766 (sub-1 GHz, 25 kHz)
Mauritius	88 (base station)

Seychelles	5,994 (PMR per frequency pair per base station)
Trinidad and Tobago	992 (25 kHz channel, 216 to 960 MHz)
United States	27 to 68 (shared to exclusive)

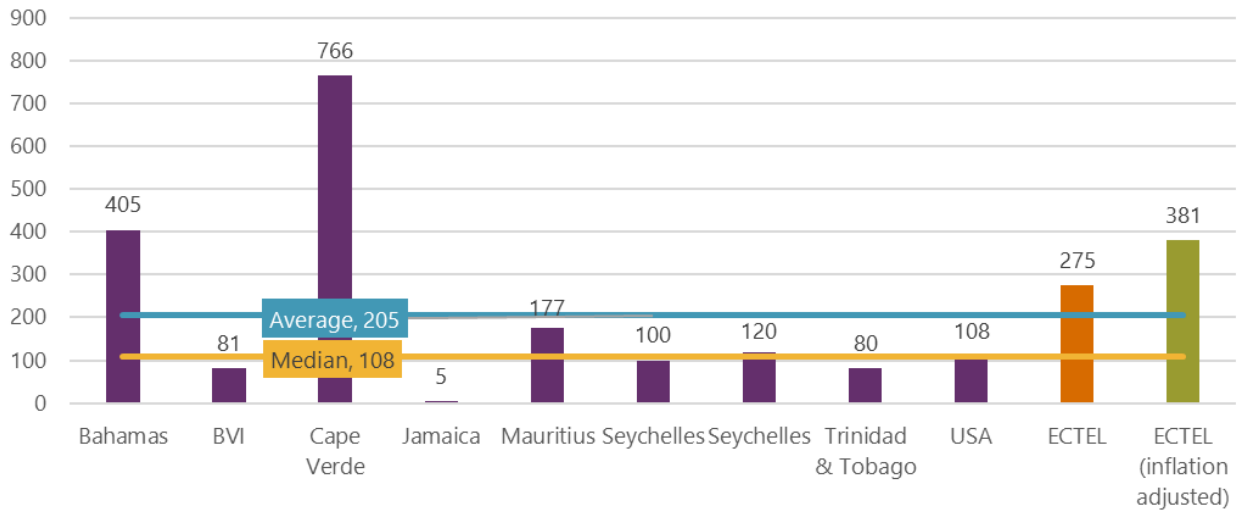
9.1.3. Maritime mobile radio

Most benchmark countries charge only for equipment and base stations, with no separate frequency authorisation fee. On a combined base-station-plus-one-channel basis, the current ECTEL fee already sits at the upper end of the range, so an inflation adjustment is not supported.

Table 63: Maritime mobile radio benchmarks (combined base station plus one channel)

Country	Converted fee (XCD)
Bahamas	405
British Virgin Islands	81
Cape Verde	765
Jamaica	189 to 757
Mauritius	177
Seychelles	120
Trinidad and Tobago	80
United States	108

Figure 38: Maritime mobile radio benchmarks (XCD)



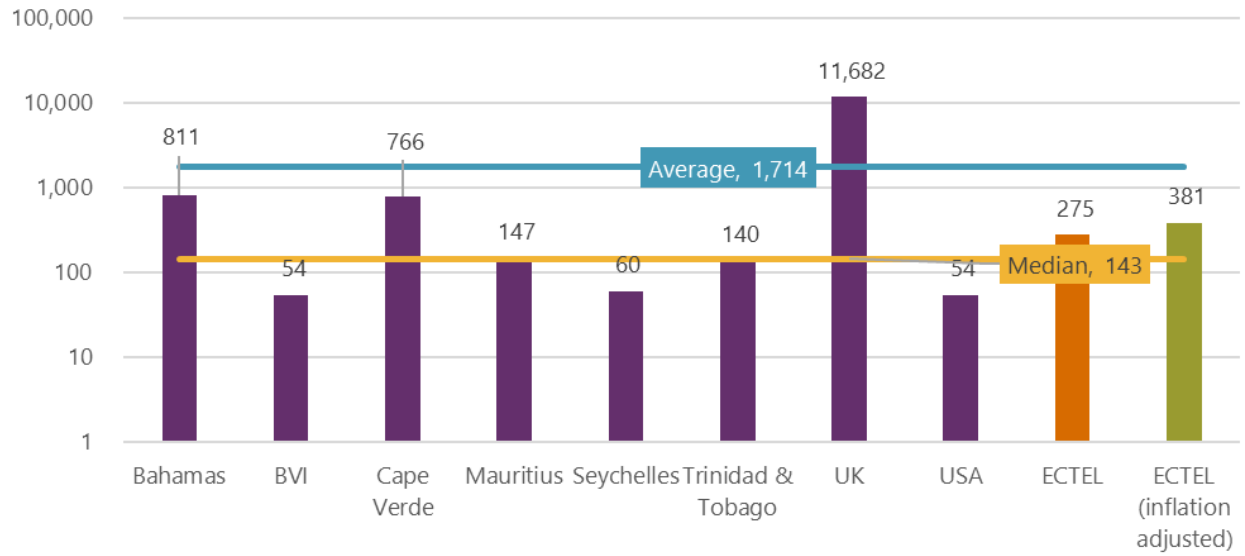
9.1.4. Aeronautical mobile radioó

As with maritime, most benchmark countries charge only for equipment, ground stations and aircraft stations. On a combined ground-station-plus-one-channel basis, the current ECTEL fee sits above the benchmark median, so no adjustment is supported.

Table 64: Aeronautical mobile radio benchmarks (combined ground station plus one channel)

Country	Converted fee (XCD)
Bahamas	810
British Virgin Islands	54
Cape Verde	765
Jamaica	591
Mauritius	147
Seychelles	60
Trinidad and Tobago	281
United Kingdom	11,682
United States	54

Figure 39: Aeronautical mobile radio benchmarks (XCD)



Notes: Y-axis on logarithmic scale.

10. Revenue impact and financial sustainability

In this section we set out the estimated revenue effect of the package as a whole, the assumptions behind the projection, and why we consider the resulting financial position appropriate for a cost-funded regulator.

The proposals change the level and structure of fees across every radio service, and respondents will reasonably want to understand the effect on ECTEL's overall finances. ECTEL's costs and revenues are not published, and we do not reproduce them here. We can, however, set out the direction and relative scale of the changes, the assumptions behind them, and why we consider the resulting position appropriate for a cost-funded regulator.

Taken as a whole, the package raises estimated annual fee revenue. The increase is concentrated in IMT (including FWA) and fixed links. These are the two services priced on the basis of opportunity cost rather than cost recovery, and they are also the services whose fees have fallen furthest behind the value of the spectrum in use since the schedule was last set in 2006. The cost-recovery services move by inflation or not at all.

We stress that ECTEL has not sought to set fees in such a way as to maximise revenue. Our aim has been to set fees in line with international benchmarks and at a level sufficient to fund our regulatory functions. We have tested the schedule against a range of cost-growth assumptions, including a stress case well above recent experience, and it remains adequate to fund those functions over the medium term.

We also note that fees would remain modest relative to the scale of the sector. On the affordability measure set out in Section 5, total IMT fees would move from approximately 3.0% to just under 4.0% of 2024 industry revenues, against an international norm of 7 to 8% of revenues spent on spectrum. The increase is therefore material for individual fee payers, and Section 5 and Section 6 set out the impact on the services facing the largest changes, but it leaves fees well within the range observed in comparable markets.

11. Conclusion

Finally, we welcome any other comments on the proposals in this document, including on matters we have not asked about directly.

Question 14: Do you have any other comments on the proposals in this consultation?

Appendix A. Draft consolidated fee schedule

This appendix consolidates the proposed fee schedule across all services. The operative parameter for IMT fees is the XCD/MHz/Pop rate; amounts per paired MHz are illustrative conversions at 2024 populations and may be rounded in the final legal schedule . All fees are annual and in XCD unless stated.

A.1. IMT spectrum

Table 65: Draft schedule: IMT spectrum

Item	Proposed fee
Coverage spectrum, below 1 GHz (600 to 900 MHz bands)	XCD0.14 per MHz per head of population; illustratively XCD142,972 per paired MHz across all five Member States
Lower mid-band, 1 to 2.1 GHz (1800, 2100, PCS, AWS)	XCD0.10 per MHz per head of population; illustratively XCD102,123 per paired MHz across all five Member States
Upper mid-band, above 2.1 GHz (2300, 2500, 3500 MHz)	XCD0.03 per MHz per head of population; illustratively XCD30,637 per paired MHz across all five Member States
Allocation across Member States	In proportion to each state's 2024 population, or in equal fifths: subject to consultation (Question 2)
Minimum annual fee per licensee	None
Fixed Wireless Access in IMT-suitable bands	Charged under this schedule (Question 3)

A.2. Fixed links

Table 66: Draft schedule: fixed links

Item	Proposed fee
Annual fee per link (point-to-point and point-to-multipoint; all link and service types)	XCD336 x bandwidth (total MHz assigned) x band factor
Band factor, below 1 GHz	2.95
Band factor, 1 to 3 GHz	2.95
Band factor, 3 to 5 GHz	2.21
Band factor, 5 to 8.5 GHz	2.18
Band factor, 10.7 to 15.35 GHz	0.97
Band factor, above 15.35 GHz	0.65

A.3. Broadcasting

Table 67: Draft schedule: broadcasting

Item	Proposed fee
AM channel fee, per channel	XCD700

FM channel fee, per channel	XCD2,800
TV channel fee, per channel	XCD4,600
Targeted public-interest relief	Exemption, reduction or phased payment on application, evidence-based and time-limited (Question 10)

A.4. Satellite and NTN

Table 68: Draft schedule: satellite and NTN

Item	Proposed fee
VSAT earth station, any band, per station	XCD6,000
Gateway earth station, any band, per station	XCD20,000
NTN class licence, annual fee	3% of gross annual revenue derived in the Member States; initial fee and annual minimum XCD5,000
NTN spectrum fee, shared or no-protection no-interference satellite spectrum	XCD25 per MHz per Member State
NTN use of IMT spectrum licensed to a mobile network operator	No additional spectrum fee

A.5. Other services

Table 69: Draft schedule: other services

Item	Proposed fee
Paging (commercial and non-commercial)	Removed from the schedule
Spread spectrum (900 MHz, 2.4 GHz, 5.8 GHz; FHSS and DSSS tiers)	Unchanged: XCD5,000 to 25,000 by tier
Land mobile radio, per frequency	Unchanged: XCD200
Maritime mobile radio, per frequency	Unchanged: XCD200; apparatus fees unchanged (base station 75, repeater 500, mobile 75, handheld 50, ship stations 300 or 500)
Aeronautical mobile radio, per frequency	Unchanged: XCD200; aircraft station 300 and related apparatus fees unchanged
Community radio station, per frequency	Unchanged: XCD25
Television studio transmitter link, per link	Unchanged: XCD500
Radio studio transmitter link, per link	Unchanged: XCD200

Appendix B. Definitions and abbreviations

Table 70: Definitions and abbreviations

Term	Meaning
AM / FM	Amplitude modulation / frequency modulation radio broadcasting
AWS	Advanced Wireless Services band (1700/2100 MHz)
CPI	Consumer price index
DSSS / FHSS	Direct-sequence / frequency-hopping spread spectrum
ECTEL	Eastern Caribbean Telecommunications Authority
FWA	Fixed Wireless Access: broadband delivered over IMT-suitable spectrum to fixed locations
FX	Conversion at market exchange rates
IMT	International Mobile Telecommunications: the spectrum bands identified for mobile broadband
IQR	Interquartile range: the spread between the upper and lower quartiles of a sample
ISED	Innovation, Science and Economic Development Canada, the Canadian spectrum authority
LMDS / MMDS	Local / multichannel multipoint distribution service
LMR	Land mobile radio
MHz/Pop	Price per MHz per head of population: the standard unit for comparing spectrum prices across markets of different size
MNO	Mobile network operator
NGSO	Non-geostationary orbit
NPV	Net present value
NTN	Non-terrestrial network: satellite-delivered communications services, including direct-to-device
NTRC	National Telecommunications Regulatory Commission of a Member State
Outer fence	Outlier threshold: upper quartile plus three times the IQR; values above are excluded
Paired spectrum	Spectrum assigned in matched uplink and downlink blocks; a paired MHz is 2 MHz in total. Bandwidth in the fixed-links formula is total (unpaired) MHz
PCS	Personal Communications Service band (1900 MHz)
PPP	Purchasing power parity: currency conversion adjusting for price-level differences
PtP / PtMP	Point-to-point / point-to-multipoint link
SIDS	Small Island Developing States
STL	Studio transmitter link
VSAT	Very small aperture terminal: a small fixed satellite earth station
WACC	Weighted average cost of capital
XCD	Eastern Caribbean dollar

Appendix C. Consolidated list of consultation questions

Please answer by reference to the question numbers below. You do not need to answer every question.

Table 71: Consultation questions

No.	Question
Q1	Do you agree that annual IMT spectrum fees should be differentiated by band group, at XCD0.14/MHz/Pop for sub-1 GHz spectrum, XCD0.10/MHz/Pop for lower mid-band spectrum, and XCD0.03/MHz/Pop for upper mid-band spectrum? Please give reasons and any supporting evidence.
Q2	The five-state fee total can be allocated across Member States either in proportion to each state's population or in equal fifths, preserving a uniform fee per MHz in every state as now. Which basis do you favour, and why?
Q3	Do you agree that Fixed Wireless Access assignments in IMT-suitable bands should be charged under the IMT fee schedule rather than the fixed-links schedule?
Q4	Do you agree that the existing minimum annual IMT spectrum fee of XCD300,000 per licensee should be removed, so that each licensee's annual fee is determined solely by its assigned spectrum holdings? Please provide reasons and any supporting evidence.
Q5	Do you agree that fixed-link fees should be set by the formula Base fee x Bandwidth (MHz) x Band factor, with fees scaling linearly in bandwidth?
Q6	Do you agree with the proposed base fee of XCD336 per MHz per link?
Q7	Do you agree with the proposed band factors in Table 13? Please give reasons and any supporting evidence.
Q8	Do you agree that the distinctions between link types and service types (backhaul, inter-site, other microwave) should be removed, with one fee per link regardless of configuration?
Q9	Do you agree with a 39% inflation adjustment to broadcasting channel fees, applied uniformly across Member States as the default schedule?
Q10	Do you agree with the proposed targeted relief mechanism for qualifying public-interest broadcasters? What eligibility criteria, evidence requirements and review periods should apply?
Q11	Do you agree that satellite earth station and VSAT fees should be charged per station rather than per frequency, at XCD20,000 per gateway earth station and XCD6,000 per VSAT earth station, uniform across frequency bands?
Q12	Do you agree with a single linear NTN spectrum fee of XCD25 per MHz per Member State per year for shared, non-exclusive satellite spectrum, with no additional spectrum fee where the service uses IMT spectrum already licensed to a mobile network operator?
Q13	Do you agree with the removal of the paging entries from the fee schedule and with leaving fees for spread spectrum, land mobile, maritime mobile, aeronautical mobile, community radio and studio transmitter links unchanged?
Q14	Do you have any other comments on the proposals in this consultation?