Wholesale Fixed and Mobile Termination Rates for SMP Licensees

Preliminary Determination

ECS 67/2019

Issued: 12 September 2019

Initial Response Date: 14 October 2019

Comments on Responses: 28 October 2019

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1 Introduction

In this document, the Utilities Regulation and Competition Authority ("URCA") sets out its preliminary views on how to determine forward-looking, cost-oriented rates for wholesale fixed and mobile termination services in The Bahamas. Taking into account the time it will take to derive forward-looking cost-oriented rates, the elapsed time since the current rates were set, and the prevailing level of these rates, URCA also assesses the merits of setting interim termination rates, prior to moving to full cost orientation. In particular, this document has the following core objectives:

- to set out the appropriate framework for setting forward-looking, cost-oriented termination rates in The Bahamas, taking into account both theoretical and practical considerations;[1]
- to assess the merits of setting interim termination rates until the forward-looking, cost-oriented rates are available;
- to set forth the proposed interim termination rates, informed by a benchmarking exercise; and
- to invite comments from stakeholders on URCA's proposals.

1.1 Background to this Consultation

URCA is the governing body of the regulatory regime for electronic communications in The Bahamas and was established under the Utilities Regulation and Competition Authority Act, 2009 ("URCA Act"). Under the Communications Act, 2009 ("Comms Act" or the "Act"), URCA is responsible for licensing undertakings that provide, operate or maintain an electronic communications network or provide an electronic communications service. The Comms Act also provides, in sections 4 and 5 of the Act, guidelines that URCA must follow for issuing regulatory and other measures (including determinations). The Comms Act gives URCA wide-ranging powers which are to be exercised in full compliance with the principles of good regulation.

URCA is required to introduce regulatory and other measures which are efficient and proportionate to its purpose and must introduce them in a manner that is transparent, fair and non-discriminatory. This means that where URCA believes that market forces alone are unlikely to achieve a policy objective within a reasonable timeframe, URCA may introduce regulatory requirements, having due regard to the costs and implications for affected parties.[2] However, as a general principle, market forces should be relied upon as much as possible and regulatory measures should be introduced by URCA only when necessary. In general, this means that more prescriptive regulatory measures are only imposed on operators who have a position in a market such that they can act to an appreciable extent

1 This Preliminary Determination does not set out the detailed approach for setting the forward-looking, cost oriented termination rates. This will be subject to a separate consultation process once the appropriate framework for determining these rates has been determined.

2 See Section 5(b)(i), 5(b)(ii) and 5(c) of the Comms Act.

independently of competitors, consumers and subscribers (i.e., a position of significant market power ("SMP")). To determine whether an operator holds such a position, URCA must undertake a review of the market.[3]

Wholesale Termination Regulation in The Bahamas

Wholesale termination is an essential service that all holders of Individual Operating Licences ("IOLs") providing voice or messaging services must purchase from each other in order to allow their customers to call (or message) customers on other public networks. Termination describes the service whereby one operator (the terminating party) accepts traffic that has originated on another network but which is destined for customers on its own network, and delivers that traffic to those customers. As such, all Licensees who operate their own network infrastructure to provide fixed or mobile voice and messaging services in The Bahamas also offer termination services to other Licensees. These are:

- Bahamas Telecommunications Company ("BTC") fixed and cellular mobile networks;
- Cable Bahamas Limited ("CBL")/Systems Resource Group Limited ("SRG") fixed networks;
- Be Aliv Limited ("Aliv") cellular mobile network; and
- IP Solutions International Limited ("iPSi") fixed network.

URCA (after consultations) determined that BTC, CBL/SRG, Aliv and iPSi have SMP in the termination of calls (and in the case of mobile, messages) on their respective networks. For this reason, the aforementioned Licensees have an obligation to offer termination services on transparent and non-discriminatory terms, priced in a way that reflects the efficiently-incurred costs of providing those services.[4] All SMP Licensees are obligated to publish the tariff and non-price terms and conditions for their termination services, with URCA setting the allowable rates for termination services.

Fixed and mobile termination rates in The Bahamas were last reviewed by URCA in 2012/14 and 2016, respectively. In particular:

- The current rates for (intra- and inter-island) fixed call termination and inbound international mobile call termination were determined in 2012, based on a three-year glide path informed by benchmarks of cost based termination rates from across the regional and other small island jurisdictions.[5] The resulting fixed termination rates were then also applied to iPSi[6] and CBL/SRG in 2014.[7] As such, the current fixed termination rates are symmetric.

[3] See sections 39(1) and 40(2) of the Comms Act.

[4] As detailed in ECS 11/2010 at https://www.urcabahamas.bs/wp-content/uploads/2017/02/ECS-11-2010-Final-Decision-Obligations-Imposed-on-Operators-with-Significant-Market-Power.pdf, ECS 13/2013 at https://www.urcabahamas.bs/wp-content/uploads/2017/02/ECS-13-2013-Final-Determination-and-Statement-of-Results-Significant-Market-Power-in-Call-Termination.pdf and ECS 33/2016 at https://www.urcabahamas.bs/wp-content/uploads/2017/11/Final-Determination-SMP-in-Call-Termination-on-NewCo-Cellular-Mobile-Network-.pdf

[5] See ECS 25/2012

[6] iPSi is no longer active in the market but is included for completeness.

[7] See ECS 12/2014

- The current (domestic) mobile call and SMS termination rates for BTC were determined in 2016, taking into account costing data in BTC's (audited) separated accounts and benchmarks of Long-Run Incremental Cost ("LRIC") based mobile termination rates in other regional and other small island jurisdictions.[8] During the same year, URCA set asymmetric interim mobile termination rates for Aliv, in recognition of its recent market entry at that time.[9] URCA notes that Aliv and BTC later negotiated a departure from these asymmetric termination rates, with mobile termination rates now being symmetric.

Table 1: Current Termination Rates in The Bahamas

Termination service	SMP Licensees	Service description	Current charge (BSD cents / minute)
Fixed Call Termination to Geographic Numbers	BTC, CBL/SRG, iPSi	Intra-island calls	0.75
		Inter-island calls	1.13
Fixed Call Termination to Non-Geographic Numbers	BTC, CBL/SRG, iPSi	Calls to non-geographic numbers	2.01
Call Termination to Mobile Numbers	BTC, Aliv	Domestic traffic	2.48
		Inbound International traffic	4.61
SMS Termination	BTC, Aliv	Domestic and International traffic	1.40

Source: Annex G (Price List) of the BTC Reference Access and Interconnection Offer ("RAIO") available at https://files.btcbahamas.com/2016/01/31/14870794_raio-revised-29jan16.pdf

When setting the interim mobile termination rates for Aliv in 2016, URCA stated that it would revisit those rates as part of a wider review of wholesale termination rates for calls and Short Messaging Service ('SMS') in The Bahamas.[10]

On 29 August 2018, Aliv requested that URCA undertake a comprehensive review of the mobile call termination, fixed call termination, and SMS termination rates to ensure they reflect efficiently-incurred costs. CBL also expressed, in its response to URCA's draft 2019 Annual Plan, its position that URCA should review rates more generally.

Noting these concerns and in line with its 2019 Draft Annual Plan,[11] URCA now plans to review these termination rates with a view to ensure that these are reflective of the efficiently incurred cost of providing these services. This consultation represents the first step in this overall review process, with URCA (i) setting out its preliminary position on the appropriate framework for setting forward-looking, cost-oriented termination rates in The Bahamas, (ii) assessing the merits of setting interim termination

8 See ECS 19/2016
9 See ECS 33/2016
10 See ECS 33/2016
11 URCA's 2019 Draft Annual Plan can be found at: https://www.urcabahamas.bs/wp-content/uploads/2018/12/URCA-Draft-Annual-Plan-2019.pdf

rates until the forward-looking, cost-oriented rates are available; and (iii) presenting the proposed level of the interim termination rates.

URCA notes that the applicable rates for other regulated interconnection services listed in BTC's RAIO are not being reviewed at this time.

1.2 Procedure for Making a Determination

URCA has wide-ranging powers under the Comms Act, especially as it relates to SMP Licensees. URCA's power to price regulate wholesale termination services is derived from sections 40 and 5(b) of the Comms Act, which allows URCA to introduce regulatory measures where in its view, "… *market forces are unlikely to achieve the electronic communications policy objectives within a reasonable timeframe"*. In these circumstances, "*URCA may impose specific conditions on Licensees determined to have SMP in the relevant market or relevant markets, including obligations relating to – (a) cost recovery and price controls, including obligations for cost orientation of prices and obligations concerning cost accounting systems.*"

In doing so, URCA must adhere to all relevant principles of the Comms Act, in particular:

- the objectives of the electronic communications sector policy as specified under section 4 of the Comms Act; and
- guidelines for regulation and other measures as per section 5(a), (b), (c) and (d) of the said Act.

The procedures for making a determination, as contained in the Comms Act at section 99 (1) (a) and (b), collectively prescribe that if, on its own motion, URCA has reason to believe that a determination is necessary, it may make determinations relating to (amongst other things):

- any obligations on a Licensee regarding the terms or conditions of any licence, including obligations in licence conditions and regulations;
- any activity set out in the Comms Act; and
- where the Comms Act provides for URCA to "*determine*" or "*to make determinations*" as is the case under section 39 (1).

Under section 99(2) of the said Act, in making any determination, URCA must have consulted persons with sufficient interest under section 11 of the Comms Act and provided written reasons for its determination. Section 11(2) of the Comms Act prescribes that regulatory instruments referred to in section 13(2) of the Act such as regulations, shall be considered regulatory measures of public significance and under section 11(1), URCA shall afford persons with sufficient interest a reasonable opportunity to comment on URCA's proposals.

URCA is therefore issuing this Preliminary Determination under section 100 of the Comms Act. This document constitutes URCA's formal notice to the aforementioned Licensees of URCA's *"Wholesale Fixed and Mobile Termination Rates for SMP Licensees".* Specifically, this document contains URCA's analysis and proposals relating to relevant wholesale fixed and mobile termination rates for all Licensees that hold SMP in wholesale fixed and mobile termination services.

1.3 How to respond to this Consultation

URCA invites written responses on this Preliminary Determination from all interested parties. Initial responses on this Preliminary Determination should be submitted to URCA by 5:00 p.m. on **14 October 2019**. Interested parties will then have the opportunity to further comment on responses made by other respondents by **28 October 2019**.

Persons may send their written responses or comments to URCA's Director of Electronic Communications, either:

- by hand, to URCA's office at Frederick House, Frederick Street, Nassau, The Bahamas; or
- by mail to P.O. Box N-4860, Nassau, Bahamas; or
- by fax, to (242) 393-0153; or
- by email, to info@urcabahamas.bs.

Where a respondent believes that URCA's approach and/or proposals are contrary to relevant principles and objectives or outside the international mainstream, the respondent should clearly set out their reasoning for such objections, together with evidential information to substantiate their position.

URCA reserves the right to make all responses available to the public by posting responses online on its website. If a response is marked confidential, reasons should be given to facilitate evaluation by URCA of the request for confidentiality. URCA may publish or refrain from publishing any document or submission, in its sole discretion.

URCA will review responses and comments received on this Preliminary Determination before publishing a Statement of Results and Final Determination.

1.4 Structure of the remainder of this document

The remainder of this consultation paper is structured the following way:

- Section 2 - URCA's Preliminary Determination on wholesale fixed and mobile termination rates for SMP Licensees in The Bahamas;
- Section 3 - Discusses the appropriate framework for setting forward-looking, cost-oriented termination rates and URCA's preliminary views on the appropriate approach for The Bahamas;
- Section 4 - Presents URCA's preliminary views on interim termination rates until Bahamas specific bottom-up/forward-looking termination rates are available; and
- Section 5 - Describes URCA's proposed next steps.

Further details on the benchmarking analysis undertaken by URCA to inform the interim termination rates are presented in an Annex to this document.

2 URCA's Preliminary Determination

This Section sets out the Determination which URCA proposes to make, subject to URCA's consideration and review of any representations and objections made by interested parties. URCA's Determination will be addressed to and will be binding upon the Licensees referred to in the Determination.

WHEREAS,

(i) Sections 40 and 5(b) of the Communications Act 2009 ("Comms Act") empower URCA to introduce regulatory measures where in its view, "*market forces are unlikely to achieve the electronic communications policy objectives within a reasonable timeframe"* and, in these circumstances, "*URCA may impose specific conditions on Licensees determined to have SMP in the relevant market or relevant markets, including obligations relating to – (a) cost recovery and price controls, including obligations for cost orientation of prices and obligations concerning cost accounting systems*";

(ii) Sections 99(1)(a) and (b) of the Comms Act empower URCA to make determinations in respect of any regulatory or other measures it proposes to introduce;

(iii) Pursuant to section 40(2) of the Comms Act, URCA must follow guidelines prior to issuing regulatory and other measures; and

(iv) Having regards to the SMP findings of BTC, CBL/SRG, Aliv and iPSi in the termination of calls (and in the case of mobile messages) on their respective networks as set out in ECS 11/2010,[12] ECS 13/2013[13] and ECS 33/2016,[14] as well as any resulting ex ante obligations on the SMP Licensees in these markets, set out in ECS 25/2012,[15] ECS 12/2014,[16] ECS 19/2016[17] and ECS 33/2016.[18]

Having conducted a review of the current price regulation of wholesale fixed and mobile termination services in The Bahamas in accordance with the Comms Act and other measures, URCA considered that it is appropriate to make certain determinations regarding the level of, and methodology used to determine, such termination charges for future periods.

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12 https://www.urcabahamas.bs/wp-content/uploads/2017/02/ECS-11-2010-Final-Decision-Obligations-Imposed-on-Operators-with-Significant-Market-Power..pdf

13 https://www.urcabahamas.bs/wp-content/uploads/2017/02/ECS-13-2013-Final-Determination-and-Statement-of-Results-Significant-Market-Power-in-Call-Termination.pdf

14 https://www.urcabahamas.bs/wp-content/uploads/2017/11/Final-Determination-SMP-in-Call-Termination-on-NewCo-Cellular-Mobile-Network-.pdf

15 https://www.urcabahamas.bs/wp-content/uploads/2017/02/ECS-25-2012-Statement-of-Results-and-Final-Decision-BTC-RAIO-Charges.pdf

16 https://www.urcabahamas.bs/wp-content/uploads/2017/01/Statement-of-Results-to-Consultation-and-Final-Determination-Wholesale-Fixed-Call-Termination-Price-Control-for-SMP-Licensees.pdf

17 https://www.urcabahamas.bs/wp-content/uploads/2017/02/ECS-19-2016-Statement-of-Results-Final-Determination-on-RAIO.pdf

18 https://www.urcabahamas.bs/wp-content/uploads/2017/11/Final-Determination-SMP-in-Call-Termination-on-NewCo-Cellular-Mobile-Network-.pdf

URCA proposes to make the following determinations:

1. Determination on the appropriate approach to setting forward-looking termination rates

For the reasons explained in Section 3 of this document, URCA sets out below its preliminary findings from its review of the options for setting forward-looking termination rates in The Bahamas.[19]

Based on URCA's assessment of the available evidence, taking into account its regulatory objectives, and in line with the approach set out in Section 3 below, URCA has preliminarily determined that Bahamas-specific bottom-up Long-Run Incremental Cost ("LRIC") models should be developed in order to determine forward-looking LRIC-based termination rates in The Bahamas.

2. Determination on the level of interim termination rates

Given the time elapsed since termination rates in The Bahamas were last reviewed, and the likelihood that prevailing rates are unlikely to be representative of the current and forward-looking costs of providing termination services, further explained in Section 4, URCA has preliminarily determined the interim rates that will apply to the relevant SMP Licensees (i.e., BTC, CBL/SRG, Aliv and iPSi) for key termination services. These interim rates are presented in **Table 2** below.

Table 2: Proposed Interim Termination Rates (BSD cents/min,[20] % changes from current rate in brackets)

Service	Current rate	Rate in Year 1	Rate in Year 2	Rate in Year 3
Fixed call termination (intra-island)	0.75	0.53 *(-30%)*	0.30 *(-60%)*	0.08 *(-90%)*
Mobile call termination (domestic)	2.48	1.89 *(-24%)*	1.30 *(-47%)*	0.72 *(-71%)*
SMS termination	1.40	1.22 *(-13%)*	1.04 *(-26%)*	0.85 *(-39%)*
Inbound international mobile call termination	4.61	3.52 *(-24%)*	2.42 *(-47%)*	1.33 *(-71%)*

These interim termination rates shall apply subsequently for a period of one year each, with the "Year 1" rate coming into force immediately upon the date of the Final Determination.

The interim rates shall only apply until URCA has published a Final Determination setting out the level of forward-looking, cost-oriented termination rates in The Bahamas.

Until further notice from URCA, no change shall be made to the regulated rates for any other interconnection services referenced in this determination for which interim rates are not presented in **Table 2** above.

[19] The applicable rates for other regulated interconnection services listed in BTC's RAIO are beyond the scope of this Preliminary Determination.

[20] SMS termination rates are expressed per message.

3 Appropriate Framework for Setting Wholesale Termination Rates

In this Section, URCA describes the main economic principles behind the regulation of termination charges and regulatory best practice in this area. URCA then presents what it considers to be an appropriate framework for setting forward-looking wholesale termination rates in The Bahamas.

3.1 Economic Theory and International Regulatory Precedent

Economic theory suggests that call and messaging termination rates should be set at the Long-Run Incremental Cost ("LRIC") of providing those services. This is the forward-looking cost that operators incur in order to provide the services, or, equivalently, the cost that an operator would avoid if it ceased to offer those termination services (but continued to provide all other services).

Cost-reflective rates are desirable as they ensure that operators can recover the costs involved with the provision of the service, but not over-recover costs. Over-recovery of costs would likely lead to higher prices for consumers on other networks as competitors increase their retail prices to cover the increased net cost of termination, whereas under-recovery of costs may undermine incentives to invest. It could further result in competitive distortions.[21]

Costs can be determined in a number of different ways. However, there is a general principle that the appropriate cost to consider is the so-called "forward-looking cost". This is because termination rates should reflect the ongoing efficiently incurred cost of providing termination services (i.e., the costs of delivering these services using the most efficient technology for meeting current and future demand), rather than the cost historically incurred by the operator. This is because it sends the right economic signals of what would occur if the service was provided under competitive circumstances and therefore promote efficient forward-looking investment decisions.

Despite these principles, however, there are various definitions of LRIC which have been used to set termination rates, with the particular methods chosen potentially impacting the level of rates. Two definitions are, however, most common.

- The first measure, known as Long-Run Average Incremental Cost "**LRAIC+"**, measures the incremental cost of a large number of services, such as all services in the fixed core network or the mobile network, with the cost of individual services within these increments then calculated using traffic volumes and routing factors. This means that the LRAIC+ values include not only the incremental cost of providing termination services, but also account for some fixed costs of the network and mark-up for common costs. At one time, LRAIC+ was the method typically used to measure the cost of termination services and it is still widely used to measure the cost of other services (such as the cost of wholesale broadband access services, for example bitstream).

[21] Although this is less of a concern when termination traffic and hence net termination payments are balanced between operators (i.e., outgoing offnet mobile traffic is equal to incoming offnet mobile traffic for all mobile operators).

- However, following a European Commission (EC) Recommendation in May 2009, there has been a move towards an alternative definition of LRIC, known as "**Pure LRIC**", for setting termination rates.[22] This alternative definition of LRIC (i.e., Pure LRIC) measures the cost incurred in providing a particular service, such as the termination service, assuming that the operator provides all other services already (i.e., no fixed and common costs are considered). As a result, the measure does not recover any joint or common costs between the service in question and other services and typically produces a lower cost estimate than LRAIC+. For example, across Europe, Pure LRIC is now used to set fixed and mobile termination rates in 23 countries.[23] This approach has also been adopted in Jamaica and the French Caribbean (as discussed further in Section 3 below).

Given the general properties of LRIC-based rates and the international precedent on setting LRIC-based termination rates, URCA sees merit in implementing LRIC-based fixed and mobile termination rates in The Bahamas as well. This is particularly the case as the overall electronic communications market has now reached a more mature state of development given that it has been three years after Aliv entered the mobile market. URCA notes that this is in line with requests from Licensees, in the context of previous consultations and more recently with requests submitted directly to URCA.

Further, given the increasing use of Pure LRIC estimates for setting termination rates, URCA is of the preliminary view that it should also base forward-looking termination rates in The Bahamas on this method (rather than LRAIC+).[24] This is particularly the case given the likely imbalances of termination traffic between Licensees in The Bahamas.[25]

Question 1: Do you agree with URCA's preliminary view that forward-looking, incremental cost is the appropriate basis for setting termination charges?

3.2 The appropriate framework also needs to consider the specific situation in The Bahamas

In general, URCA considers there to be two potential options for developing LRIC-based termination rates for The Bahamas.

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22 EU COMMISSION RECOMMENDATION of 7 May 2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU (2009/396/EC) at https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:124:0067:0074:EN:PDF

23 See BEREC 'Termination Rates at European Level July 2018' BoR(18)2018 at https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/8306-termination-rates-at-european-level-july-2018

24 Note that URCA only refers to termination rates being based on Pure LRIC. Other regulated, cost-oriented charges may require a different costing approach.

25 URCA considers that until 2017 (latest available information), BTC was a net receiver of both domestic fixed and mobile termination traffic. While the termination traffic imbalances on domestic mobile-to-mobile services may have declined since then, due to the continued growth in Aliv's mobile customer base, URCA considers this less likely to be the case on fixed termination services where the relative market shares of BTC and CBL/SRG is more stable.

1. **Developing bottom-up (BU) LRIC models for The Bahamas**. BU LRIC models are considered the most accurate method of establishing the efficient, forward-looking incremental unit costs of providing termination services. BU models estimate the efficient cost that a hypothetical network operator would face to meet a given level of demand based on a series of engineering rules and input cost data. The network dimensioned this way is costed by applying a set of investment and operating unit costs to the infrastructure dimensions and amount of equipment modelled. The total cost of the network determined this way is then allocated to services using a set of routing and usage factors. Such models take into account factors specific to a country and operator, including network dimensioning parameters, customer demand, and market shares. This compares to a "top down" modelling approach which would take into account the actual networks deployed in The Bahamas.[26] International precedent from leading regulatory bodies, including official guidance from the European Commission,[27] supports the use of a bottom-up model to estimate costs using LRIC+ and Pure LRIC approaches. However, URCA is cognisant that the implementation of BU LRIC models is not always straightforward or practical. Data availability and resource constraints may detract from the overall appeal of this approach, for example. As explained in Section 1, termination rates in The Bahamas have not been reviewed for some time, and industry players have recently called for a review of the regulated termination rates currently in place. The additional lead time that would be required in order to develop BU LRIC models for the mobile and fixed networks will extend this period. URCA has therefore considered two alternative approaches to setting cost-based rates, which may result in URCA being able to establish revised rates sooner than under a BU LRIC approach.

2. **Targeted costing exercise of termination services**. An alternative approach is to conduct a targeted costing exercise which aims to identify the incremental cost of providing termination services in The Bahamas by analysing the cost of specific network components only.

The remainder of this section provides a high-level overview of the two options set out above, comparing their respective strengths/weaknesses in the context of the electronic communications market in The Bahamas. This includes an assessment of their usefulness for other regulatory purposes (such as determining the costs of other regulated access and interconnection services), to establish whether, in URCA determining the appropriate way forward, there are any relevant considerations beyond the suitability of the approaches for setting termination rates. This is to ensure that the selected regulatory remedy is proportionate and timely.

Option 1: Developing BU LRIC models to inform termination rates

The first option would be for URCA to develop two bottom-up LRIC models: a fixed network model and a mobile network model. European precedent suggests that fixed termination rates can be set based on

[26] A further option is to combine a BU LRIC model with top-down cost information from the operators, which is commonly referred to as a "hybrid" model.

[27] EU COMMISSION RECOMMENDATION of 7 May 2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU (2009/396/EC) at https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:124:0067:0074:EN:PDF

the incumbent fixed operator's network technologies, with these then being applied symmetrically to fixed operators who may employ other technologies. This means that it would not be necessary to develop a separate LRIC model for coaxial cable networks (i.e., for CBL).

These cost models could be designed to cover the main termination services currently contained in BTC's RAIO and be extended to cost other termination services with the addition of some 'off-model' analysis. The models could also be used for future termination rate reviews, subject to implementing appropriate updates in relation to service demand, input costs and technological changes.

In addition, the LRIC models could be designed in a way which would allow URCA not only to derive LRIC-based termination rates, but for calculating the cost of a number of other wholesale regulated services. However, this would require an extension of the BU LRIC models[28] to estimate the incremental costs of wholesale services which involve elements of the fixed access network (as the bottom-up fixed network model needed to determine fixed call termination rates would only consider the costs of the fixed core network). This would then allow URCA to calculate the cost of wholesale services which utilize both the access and core networks, such as wholesale leased lines and bitstream services.

Option 2: Targeted costing exercise of termination services

Instead of developing BU LRIC models, URCA could instead undertake a targeted analysis of the incremental cost to each Licensee of providing the relevant termination/interconnection services. The main network components used to deliver each termination service are well-established and common across jurisdictions. This exercise would therefore involve the issuance of information requests to the Licensees to obtain costing data for each of these network components as well as traffic data for each termination service. This, in turn, would allow URCA to develop estimates of Pure LRIC for each of the termination services being reviewed.

However, the reasonableness and ease of implementing this approach could differ for fixed and mobile termination services.

- **Fixed Networks.** In the case of the fixed core network (which is relevant to the provision of fixed call termination services), this approach is more suitable if the Pure LRIC measure of costs is used to set termination rates. This is because virtually all costs incremental to the provision of voice terminating services arise from relatively few voice-specific network elements such as soft switch and media gateways, while the volume of terminating voice traffic is unlikely to drive the costs of many other network elements. A Pure LRIC estimate only considers the costs that is incremental to the provision of the service. A LRAIC+ estimate on the other hand also considers network elements that are shared between different services. While a voice termination service does not drive the cost of many network elements, it still uses large parts of the network alongside other services.[29] An appropriate allocation of costs to the voice termination service

[28] Such an extension might cover both bottom-up modelling of parts of the access network as well as analysis of the operators' actual costs.

[29] For example, for network elements that are used by both voice services and data services, such as Multi-Service Access Nodes (MSANs) and routers, the volume of voice traffic may not drive the costs of these network elements. This is because

given that usage requires a detailed modelling of many different network elements making a targeted modelling approach not unlike the development of a full BU model.

- **Mobile Networks.** The targeted costing approach is less straightforward to apply in the case of mobile networks. This is because a number of different network elements have an impact on termination rates, even under a Pure LRIC measure. One possible resolution to this would be to use Bahamas-specific information, and data from publicly available LRIC models from other jurisdictions, to identify those network elements which account for a large proportion of termination costs. The targeted exercise could then focus on these main network elements and apply a mark-up in order to estimate any remaining costs. This mark-up may be derived from price differentials observed in regulated termination rates in other jurisdictions.

However, whilst this approach could be more efficient than Option 1 above, it would not enable URCA to later utilize the analysis to develop cost estimates for other wholesale services, and may therefore be less efficient from the perspective of efficiently using limited regulatory resources.

High-level comparison of potential options

Table 3: Comparison of Potential Options to Derive Forward-looking Termination Rates

Option	Ability to determine Bahamas-specific rates, in line with international precedent	Flexibility	Implementation considerations
Option 1: Develop BU LRIC models for The Bahamas	▪ BU LRIC models are designed to reflect costs of an hypothetical efficient operator, taking into account the local market environment ▪ BU LRIC approach has been adopted in many jurisdictions, including within the region	▪ LRIC models can also be used for future reviews of termination rates ▪ For fixed, can be extended to cost other services which use the core network (e.g., trunk segment of leased lines)	▪ Requires more time and resources to implement (incl. further consultations and detailed information requests) ▪ Potential challenges on data availability from all Licensees ▪ Separate model required for fixed access in order to measure the unit costs of end-to-end services such as LLU/VULA and leased line
Option 2: Targeted costing exercise based on network components	▪ Builds on Licensees' cost and traffic when determining LRIC estimates ▪ URCA is not aware of this approach having been adopted elsewhere	▪ Limited - cannot be easily extended to cover other wholesale services	▪ Less time and resource intensive than Option 1. ▪ Potential challenges on costing data availability from all Licensees ▪ Would work well for fixed termination rates using Pure LRIC. More problematic for other approaches and services

in most fixed networks data accounts for the largest proportion of traffic by a significant margin and this share is only expected to increase. This implies that the level of call termination traffic has a negligible impact on the total costs of these network elements. However, under the LRAIC+ measure of cost, a targeted costing exercise would still have to consider all these shared network elements.

Table 3 above sets out a high-level comparison of these two options, focusing on: (i) their ability to determine Bahamas-specific rates, in line with international precedent, (ii) the flexibility of these options in terms their wider applicability and (iii) how easy the approaches are to implement.

3.3 URCA's Preliminary Views on the Appropriate Approach to Setting Termination Rates

Based on the assessment above, URCA proposes to develop Bahamas-specific BU LRIC models (i.e., Option 1) to determine forward-looking LRIC-based termination rates in The Bahamas.

While this approach is likely to require more time and resources to implement relative to Option 2, URCA considers the incremental efforts required to be reasonable and proportionate. Further, this needs to be weighed against the greater flexibility of developing Bahamas-specific BU LRIC models for future application and URCA being in a position to develop Pure LRIC estimates based on a hypothetically efficient operator in The Bahamas. Option 1 is also more in line with international precedent.

Question 2: Do you agree with URCA's preliminary view that developing Bahamas-specific BU LRIC models should be used as a base for setting forward-looking LRIC-based termination rates in The Bahamas?

4 Preliminary Views on Interim Termination Rates

As explained in Section 1 above, URCA has not intervened to change the level of termination rates for these services since 2014 and 2016 for fixed (based on a glide path set in 2012) and mobile services respectively.[30] Indeed, mobile termination rates set in 2016 were agreed as an interim measure, to be kept under review as the cellular/mobile market developed.

This means some years have passed since termination rates were last reviewed. Given this, it is likely that the underlying costs of providing these services will have changed as will rates in comparable jurisdictions. Aliv and CBL have also recently asked URCA to review current termination rates. In line with its 2019 Draft Annual Plan,[31] URCA in this Section now reviews the current rates for the core termination services in Table 1.

As part of Section 2, URCA has set out its preliminary views on how forward-looking cost-oriented rates should be set, taking account of international precedent. Such precedent, as set out in Section 2 and recognized by URCA and Licensees in The Bahamas in the past,[32] requires termination rates to be set according to estimates of the forward-looking incremental costs of providing these services, with such estimates reflecting the incremental costs that a reasonably efficient provider would incur to offer termination services. However, as previously explained, determining forward-looking, cost-oriented termination rates is not a straightforward exercise and would likely require significant time to implement.

URCA has set out, in Section 2 of this Preliminary Determination, its proposal to, in future, set termination rates by developing Bahamas-specific BU LRIC models. However, this approach is still likely to take considerable time to implement. Given the time elapsed since rates were last reviewed, URCA therefore considers it appropriate to now set updated, interim rates, with these applying until the forward-looking termination rates are available. This section therefore contains URCA's assessment of LRIC-based termination rates in other countries to assess how these compare to prevailing rates in The Bahamas, and how interim rates should be set.

4.1 Benchmarking Approach and Results

In order to establish whether prevailing rates in The Bahamas are likely to be reflective of the underlying costs, URCA has conducted a benchmarking exercise using regulated rates from comparable jurisdictions (comprising other small island economies and regional comparators) where these rates are understood to be based on the LRIC of providing termination services. URCA is confident that this exercise should provide a good proxy of the LRIC of providing termination services in The Bahamas, given the similar

30 Noting that Aliv and BTC later negotiated a departure from the asymmetric termination rates set in 2016.

31 URCA's 2019 Draft Annual Plan can be found at: https://www.urcabahamas.bs/wp-content/uploads/2018/12/URCA-Draft-Annual-Plan-2019.pdf

32 See for, example, ECS 19/2016

characteristics of The Bahamas and the sample jurisdictions.[33] This is similar to the approach URCA has historically used to set fixed and mobile termination rates.[34]

This benchmarking exercise has focused on the three termination services for which a sample of regulated cost-based rates was available for a selection of comparator jurisdictions:

- Fixed call termination (intra-island);
- Mobile call termination; and
- SMS termination.

The other regulated termination services identified in Table 1 (Section 1) are not widely regulated across the comparator jurisdictions and therefore no suitable benchmarking information is available on regulated rates. URCA discusses its approach to setting interim termination rates for the three termination services below.

Table 4: Jurisdictions considered in the Benchmarking Exercise

Jurisdiction	Basis of inclusion in sample	Termination rates benchmarked
Dominica (ECTEL)	Geographic proximity, small island economy	Fixed call, Mobile call, SMS
Grenada (ECTEL)	Geographic proximity, small island economy	Fixed call, Mobile call, SMS
St Kitts and Nevis (ECTEL)	Geographic proximity, small island economy	Fixed call, Mobile call, SMS
St Lucia (ECTEL)	Geographic proximity, small island economy	Fixed call, Mobile call, SMS
St Vincent and the Grenadines (ECTEL)	Geographic proximity, small island economy	Fixed call, Mobile call, SMS
French Caribbean	Geographic proximity, small island economies	Fixed call, Mobile call, SMS
Cayman Islands	Geographic proximity, small island economy	Fixed call, Mobile call
Barbados	Geographic proximity, small island economy	Fixed call, Mobile call
Jamaica	Geographic proximity, small island economy	Fixed call, Mobile call
Bahrain	Small island economy	Fixed call, Mobile call
Malta	Small island economy	Fixed call, Mobile call
Cyprus	Small island economy	Fixed call only
UK Channel Islands	Small island economies	Fixed call, Mobile call
BEREC[35] sample average (excl. member countries listed above)	Reflects leading regulatory precedent	Fixed call, Mobile call

Notes: The ECTEL countries were considered individually, rather than as a group, since different rates for each member state were determined taking into account country-specific parameters (albeit according to a similar overall method). The French Caribbean countries are all subject to a single regulated rate, which also applies to mainland France. In Cyprus, mobile call termination is regulated but the rates are not LRIC-based. For the BEREC sample only the rates based on Pure LRIC are considered.

The jurisdictions used for the benchmarking exercise, along with the basis for their inclusion in the sample, are set out in **Table 4** above.

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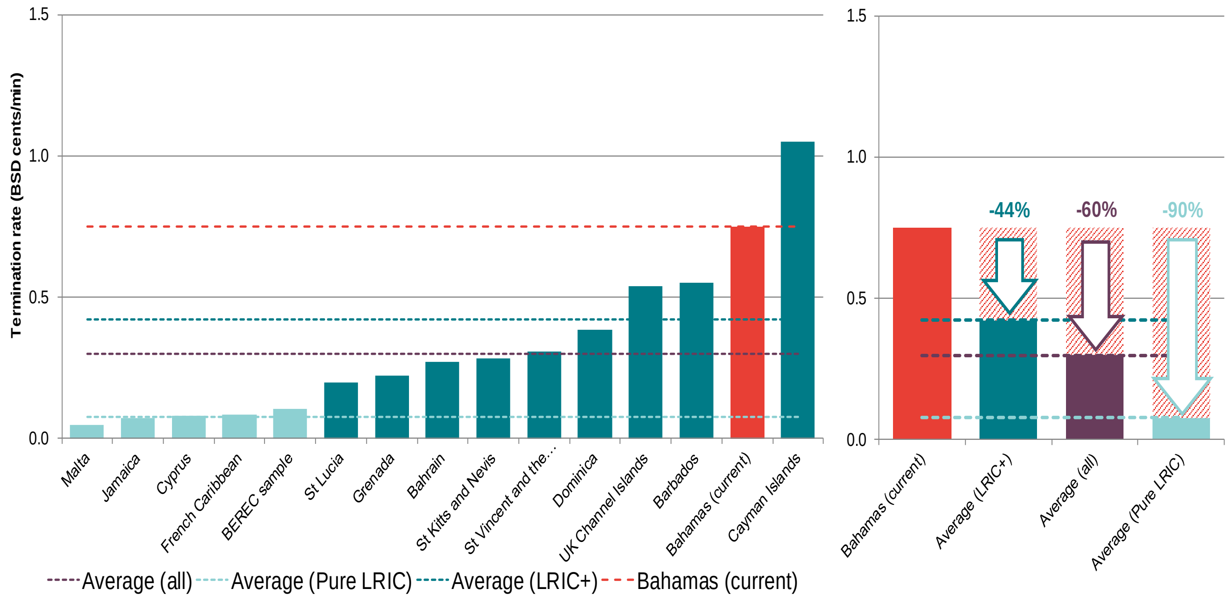
33 URCA notes that, since Pure LRIC rates are typically more comparable than LRIC+ rates, the degree of comparability may depend on the exact form of LRIC used to set rates.

34 See ECS 25/2012 and ECS 19/2016

35 The Body of European Regulators for Electronic Communications (BEREC) comprises the National Regulatory Authorities (NRAs) of the EU Member States. The rates set by those NRAs are therefore used in this sample.

The following figures illustrate how current regulated rates in The Bahamas compare to LRIC-based rates across the benchmarking sample. This analysis takes into account rates based on LRAIC+ and those based on Pure LRIC.

Figure 1: Fixed Call Termination Rate Benchmarking Results



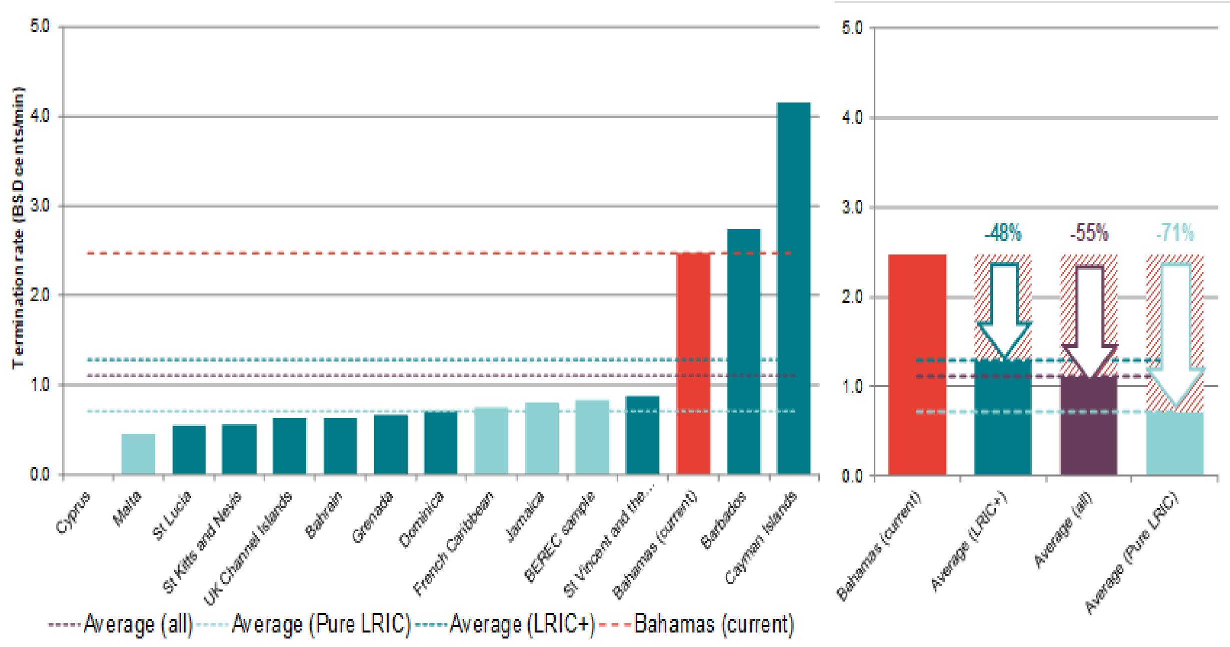
Note: For the BEREC sample only the rates based on Pure LRIC are considered.

Figure 1 above presents a comparison of fixed termination rates across the comparator jurisdictions and compares these to the current intra-island fixed termination rate in The Bahamas. From this, it is clear that the prevailing intra-island rate in The Bahamas is significantly higher than all other jurisdictions within the sample, with the exception of the Cayman Islands, with the current rate in The Bahamas exceeding all three sample averages (by 44% to 90%). Indeed, URCA notes that this difference is particularly significant in those countries (i.e., Malta, Jamaica, Cyprus, French Caribbean and BEREC sample) where rates are set according to Pure LRIC.[36]

Similarly, **Figure 2** demonstrates how mobile call termination rates in The Bahamas are also relatively high, at around three times the average Pure LRIC-based rate in the sample and also above those rates which are based on a LRAIC+ measure.

[36] This is not unexpected; Pure LRIC rates are lower than LRIC+ rates for a given jurisdiction as the former measure does not include a share of common costs. Rates based on Pure LRIC are also less likely to differ between jurisdictions, as a result of these common costs differing between jurisdictions.

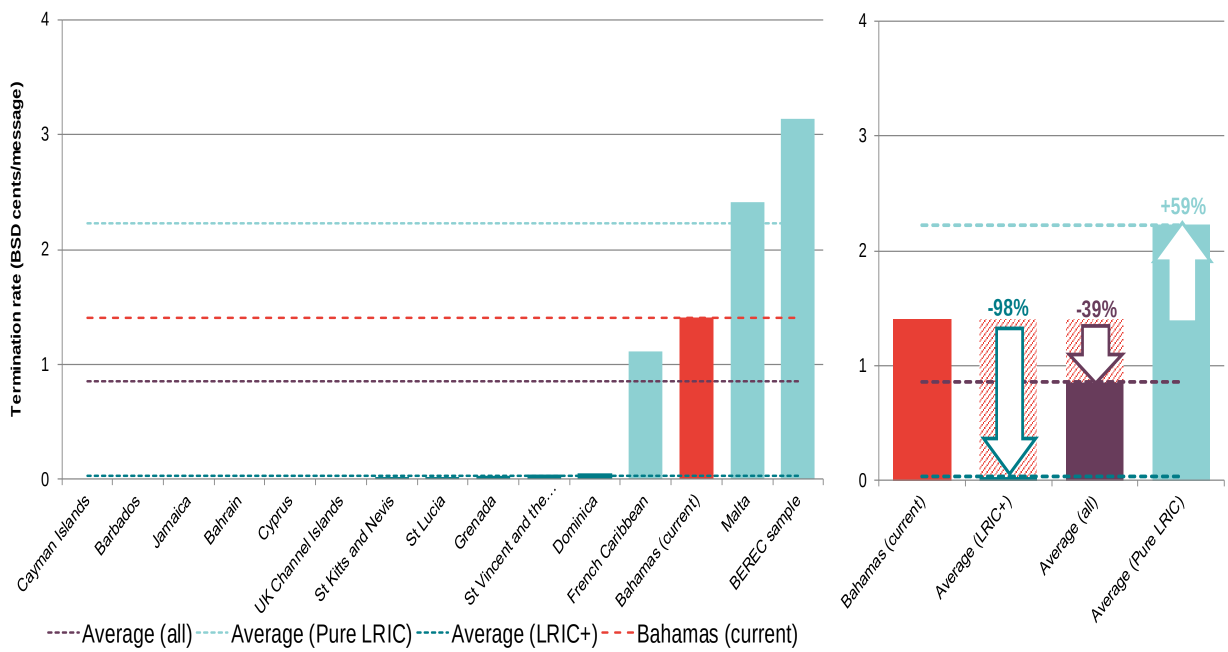
Figure 2: Mobile Call Termination Rate Benchmarking Results



Note: For the BEREC sample only the rates based on Pure LRIC are considered.
No mobile call termination rates are available for Cyprus.

Finally, **Figure 3** below shows that for SMS termination rates the picture is less clear, with a wide range of rates across the benchmarking sample and Pure LRIC-based rates, on average, exceeding those based on LRAIC+. For example, SMS termination rates in Malta and the BEREC sample are higher than prevailing SMS termination rates in The Bahamas, despite being based on Pure LRIC. The French Caribbean SMS termination rate, also set based on Pure LRIC, is also only slightly lower than the current rate in The Bahamas. URCA notes that with the limited information available as a result of the smaller overall sample size available for SMS termination rates, it is difficult to establish accurately the appropriate level at which SMS termination rates should be set. However, it is clear that rates in The Bahamas are above those in several other jurisdictions within the benchmarking sample. SMS termination rates have been de-regulated in many countries, which is likely to have impacted this outcome, as is the tendency for rates to be revised significantly downwards upon review, which skews the sample average. For example, the current rates in the ECTEL countries, which are significantly lower despite being based on LRAIC+, were revised significantly downwards in 2018.

Figure 3: SMS Termination Rate Benchmarking Results



Note: For the BEREC sample only the rates based on Pure LRIC are considered.
No SMS termination rates are available for Cayman Islands, Barbados Jamaica, Bahrain, Cyprus and the UK Channel Islands.

Despite this variance in SMS termination rates, it is clear that, overall across the three services, the prevailing fixed and mobile termination rates in The Bahamas are above those observed, on average, across the benchmarking sample. This suggests that, unless there are exogenous factors which would reasonably cause LRIC for these services to be significantly higher in The Bahamas than in the other benchmark countries, termination rates in The Bahamas are likely, currently, to be above the incremental costs of providing such services in The Bahamas.

As set out earlier in this section, establishing appropriate rates based on the forward-looking approach URCA intends to pursue is likely to take some time. Given the prevailing trends for incremental costs of termination services to decline over time, this means that, in the absence of URCA making an interim adjustment to rates, the difference between LRIC-based rates and existing rates in The Bahamas is likely to grow. URCA considers that this is problematic because setting rates above incremental costs is inefficient, and these costs are also likely to be passed on to consumers in the form of higher retail prices.

As such, URCA proposes to set interim rates that are likely to better reflect the underlying incremental cost of providing termination services (as evidenced by the LRIC-based rates observed across the benchmarking sample). This is to start the transition to termination rates reflective of the LRIC of providing these services before the final LRIC-based rates for The Bahamas become available. The remainder of this section describes URCA's proposed approach to setting interim charges and the level of interim rates that this approach implies.

Question 3: Do you agree with URCA's view that interim rates for intra-island fixed termination and mobile termination services should be set?

4.2 Approach to Setting Interim Termination Rates

As stated in Section 3.1 above, not all termination rates under the scope of this review can be informed by benchmarking. This is reflected in URCA's proposed approach to setting interim termination rates, described below.

Benchmarked Interim Termination Rates

URCA proposes that for the three services benchmarked in the preceding subsection (i.e., intra-island fixed termination, mobile termination, and SMS termination), interim rates should be set based on an average of the Pure LRIC rates observed in the benchmark sample. This is because URCA notes that Pure LRIC rates are increasingly preferred by regulatory authorities[37] and are less likely to vary significantly across countries than LRAIC+ or fully distributed cost estimates.

In particular, URCA proposes that:

- *Interim fixed and mobile call termination rates* should be set equal to the sample average of Pure LRIC rates in the benchmarking (as shown by the light blue dotted lines in Figure 1 and Figure 2).
- The *interim SMS termination rate* should be set equal to the average of the entire benchmarking sample (as shown by the red dotted line in Figure 3).[38]

All other interim termination rates

For those rates not included in the benchmark analysis, URCA proposes the following approach:

- *Interim Inbound international[39] mobile call termination rates* should be set equal to the interim mobile call termination rate plus the current differential between international and domestic mobile rates (i.e., the prevailing differential between international inbound and domestic mobile termination rates would be maintained).[40]
- For *inter-island fixed termination* and *non-geographic call termination* services, the current rates will remain in force during the interim period.[41]

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[37] For example, see: EU Commission Recommendation of 7 May 2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU (2009/396/EC).

[38] The reason for this is that the sample is too small for the Pure LRIC-only average to be meaningful. This is further reflected in the fact that the Pure LRIC average is above the LRIC+ average.

[39] URCA notes that no distinction is made between domestic and international fixed call termination rates.

[40] This reflects that differentials between domestic and international rates may not always be fully cost-reflective but could also reflect other considerations. As a result, the benchmarking exercise itself provides no further insight as to the appropriate level of international termination rates.

[41] From BTC's regulatory account data, URCA understands that most of the fixed termination traffic is on-island, with inter-island termination traffic accounting for a small share of total domestic fixed termination traffic in 2017. URCA also notes

Glide paths

URCA recognizes that the proposed interim rates are significantly lower than the current termination rates, and therefore proposes to set a multi-year 'glide path' transition from the current rates to the interim rates based on the approach set out above. This glide path is designed to ensure rates move to more appropriate cost-based rates and to avoid a sudden impact on the operators' net termination revenues. These rates will remain in place until the forward-looking rates (based on the approach discussed in Section 2) are developed and implemented. Indeed, currently URCA does not expect to reach the last stage of the glide path (i.e., the "Year 3" rates) as it intends to finalize the forward-looking termination rates within two years of this Determination. The shape of the glide paths proposed by URCA are as follows:[42]

- The termination rates benchmarked above would reduce in three equal amounts at one-year intervals until rates reach the target level (i.e., the relevant sample average from the benchmarking exercise described above); and
- The International Inbound Mobile call termination rates will retain the current difference relative to Domestic Mobile call termination rates as long as interim rates apply.

Question 4: Do you agree with URCA's proposed approach for interim fixed and mobile termination rates (including the proposed used of a glide path)?

4.3 Proposed Level of Interim Termination Rates

Based on the approach described in the preceding subsections, the table below sets out the proposed interim fixed and mobile termination rates, noting that these rates will be superseded as URCA derives specific forward-looking cost estimates for termination services in The Bahamas.

Table 5: Interim Termination Rates (BSD cents/min,[43] % changes from current rate in brackets)

Service	Current rate	Rate in Year 1	Rate in Year 2	Rate in Year 3
Fixed call termination (intra-island)	0.75	0.53 *(-30%)*	0.30 *(-60%)*	0.08 *(-90%)*
Mobile call termination (domestic)	2.48	1.89 *(-24%)*	1.30 *(-47%)*	0.72 *(-71%)*
SMS termination	1.40	1.22 *(-13%)*	1.04 *(-26%)*	0.85 *(-39%)*
Inbound international mobile call termination	4.61	3.52 *(-24%)*	2.42 *(-47%)*	1.33 *(-71%)*

Question 5: Do you agree that the proposed levels of interim termination rates?

that the cost of providing inter-island termination services may differ significantly from those in other jurisdictions as a result of geographical differences. Given this, URCA considers it appropriate to keep this rate unchanged for now. However, both the inter-island and non-geographic call termination rates will be revised during URCA's assessment of forward-looking rates, when more evidence is available regarding the underlying cost of providing these services.

42 During the interim period, URCA proposes that International Inbound Mobile call termination rates will retain the current difference relative to Domestic Mobile call termination rates.

43 SMS termination rates are expressed per message.

5 Next steps

Within the previous Sections, URCA has set out its preliminary position on the appropriate framework for setting forward-looking, cost-oriented termination rates in The Bahamas; confirmed the merits of setting interim termination rates until the forward-looking, cost-oriented rates are available; and presented the proposed level of the interim termination rates.

URCA invites interested parties to comment on its preliminary position by responding to the consultation questions set out in this document by 5:00 p.m. on **14 October 2019**. Interested parties will then have the opportunity to further comment on responses made by other respondents by **28 October 2019**.

URCA will then review all written responses to the consultation when preparing its Final Determination which will, amongst others, set out the framework for setting forward-looking, cost-oriented termination rates in The Bahamas, next steps in the overall process of determining and implementing these rates, and the interim termination rates applicable until then.

Annex: Benchmarking Methodology

This Annex describes the source of the benchmarking data used to set the proposed interim termination rates and notes any adjustments that have been made to those rates.

A1.1 Data collection and adjustment approach

URCA has, where available, collected data on the following rates across the sample jurisdictions:

- Fixed call termination rates;
- Mobile call termination rates; and
- SMS termination rates.

Where possible, this information was sourced from publicly available regulatory decisions. Other sources, where regulatory decisions were unavailable, included news items on regulatory authorities' websites as well as third-party news and data services such as Telegeography.

Where glide paths were in place, the end-point of the glide path was used in URCA's benchmarking since it represents the rate which the regulatory authority deems to be the relevant cost-oriented rate. The glide paths are typically designed to soften the regulatory impact and therefore partially reflect the rates in place before the rates were reviewed.

Published rates were typically expressed in local currencies in the source documents, but some had already been converted to US dollars (for example, if published as part of a benchmarking study). URCA notes that the exchange rate between US dollars and Bahamian dollars is fixed at parity, so the timing of such conversions does not affect the results. URCA has converted all rates to Bahamian dollars using the exchange rate at 1 June 2019.[44]

[44] Source: www.xe.com

A1.2 Summary of data sources

The table below sets out all the sources used by URCA to obtain rates for the jurisdictions in the benchmarking sample.

Table 6: Source of benchmarking data (rates converted into Bahamian dollars, BSD)

Jurisdiction	FTR (BSD cents/min)	MTR (BSD cents/min)	SMS TR (BSD cents/SMS)	Source(s)	Notes
Dominica (ECTEL)	0.38	0.71	0.05	**All TRs:** https://www.ectel.int/wp-content/uploads/2018/09/PUBLIC_Determination_Interconnection_rates_2018-1.pdf	See pages 43-46
Grenada (ECTEL)	0.22	0.68	0.03	As above	As above
St Kitts and Nevis (ECTEL)	0.28	0.56	0.02	As above	As above
St Lucia (ECTEL)	0.20	0.56	0.02	As above	As above
St Vincent and the Grenadines (ECTEL)	0.31	0.87	0.04	As above	As above
French Caribbean	0.09	0.76	1.12	**MTRs and FTRs**: https://en.arcep.fr/news/press-releases/p/n/arcep-publishes-for-consultation-its-draft-analysis-of-fixed-and-mobile-call-termination-markets-fro.html **SMS TRs**: https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/8306-termination-rates-at-european-level-july-2018	See Table 9 in the BEREC document for SMS TRs
Cayman Islands	1.05	4.16	-	**MTRs**: https://tatt.org.tt/DesktopModules/Bring2mind/DMX/Download.aspx?Command=Core_Download&EntryId=906&PortalId=0&TabId=222 **FTRs**: https://www.ofreg.ky/ict/upimages/publicrecord/ICT_Decision_2015_1	MTRs: Extracted from a study by TATT, the regulator in Trinidad and Tobago. See page 24 FTRs: See page 29
Barbados	0.55	2.75	-	**MTRs and FTRs**: https://www.ftc.gov.bb/library/2015-04-01_commission_decision_lric.pdf	See page 5

Jamaica	0.07	0.81	-	**MTRs**: https://www.our.org.jm/ourweb/sites/default/files/documents/sector_documents/cost_model_for_mobile_termination_rates_-_determination_notice_may_2013.pdf **FTRs**: https://www.our.org.jm/ourweb/sites/default/files/documents/sector_documents/determination_notice_-_cost_model_for_fixed_termination_rates_-_public_version.pdf	MTRs: See page 46 FTRs: See page 53. The rate used is the average of local and national call rates (9.39 and 9.58 JMD cents per minute, respectively)
Bahrain	0.27	0.64	-	**MTRs and FTRs**: http://www.tra.org.bh/media/document/MCD%2009%2015%20067%20RO%20Orders%20on%20Batelco%20Viva%20and%20Zain%20setting%20the%20regulated%20call%20termination%20rates%20PV.pdf	See page 3
Malta	0.05	0.45	2.42	**All TRs**: https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/8306-termination-rates-at-european-level-july-2018	FTRs: See Table 3 MTRs: See Table 8 SMS TRs: See Table 9
Cyprus	0.08	-	-	**FTRs**: See BEREC source above	As above Note MTRs are excluded as they were set based on benchmarking
UK Channel Islands	0.54	0.63	-	**MTRs and FTRs**: Telegeography	CICRA's proposed MTRs were withdrawn due to procedural issues. However, these proposed rates are used in the analysis as the issue was not conceptual
BEREC sample	0.10	0.84	3.14	**All TRs**: See BEREC source above	Only rates based on Pure LRIC rates are considered for the BEREC sample.

Note: A dash (" – ") denotes that rates are unavailable or not regulated. The BEREC sample excludes Malta, Cyprus, and France, which are included separately in the sample (France has the same rate as the French Caribbean). The rates for a small number of countries reported in the BEREC report were overridden with updated figures sourced from Telegeography.