Wholesale Fixed and Mobile Termination Rates for SMP Licensees

Addendum to the Final Determination (ECS 74/2019)

ECS 05/2020

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Table of Contents

1 Introduction

In a Final Determination (ECS 74/2019[1]) issued 24 December 2019 the Utilities Regulation and Competition Authority ("URCA") explained that it was not, at the time, in a position to give a definitive view on the appropriate approach for setting forward-looking wholesale charges. URCA noted that, given the significant time and financial implications of any decision for the stakeholders involved, URCA would make a decision on forward-looking rates at a later date and publish this in a separate document. In so doing, URCA noted that the interim rates set in ECS 74/2019 were not affected by the choice of methodology for setting termination rates going forward and introduced those interim rates immediately upon publication of ECS 74/2019.

Against this backdrop, URCA sets out in this Addendum to ECS74/2019 its final position on the appropriate framework for setting forward-looking, cost-oriented termination rates in The Bahamas.

URCA issued the Preliminary Determination for this consultation on 12 September 2019. That document had 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;
- 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.

The first round of responses to the consultation were due on 14 October 2019. The second round of responses were due on 28 October 2019.

In addition to seeking general comments and/or views to URCA's preliminary findings, URCA's consultation paper sought respondents' views on five questions:

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

[1] Wholesale Fixed and Mobile Termination Rates for SMP Licensees in The Bahamas: Response to Public Consultation and Final Determination

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

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

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

Three parties submitted initial responses to the consultation, namely:

- Be Aliv Limited ("Aliv");
- Bahamas Telecommunications Company ("BTC"); and
- Cable Bahamas Limited ("CBL").

BTC and CBL made additional submissions as part of the second round. These additional submissions commented on aspects of the initial consultation responses submitted by the other parties. Aliv also made a second-round submission but stated within it that it generally adopted the same positions as those within CBL's submission.

URCA's responses to the comments it received are set out in the 24 December 2019 Final Determination (ECS 74/2019).[2] That document concluded on all issues except Consultation Question 2. In particular:

- URCA concluded that forward-looking, long run incremental cost ("LRIC") is the appropriate basis for setting fixed and mobile termination charges; and
- URCA also concluded on the need for, and level of, interim termination rates.

It bears repeating that within ECS 74/2019 URCA did not conclude on the matter of whether Bahamas-specific bottom-up (BU) LRIC models should be developed in order to inform termination rates. Instead, URCA stated that *"given the significant time and financial implications of any decision for the stakeholders involved, URCA will make a decision on forward-looking rates at a later date and will publish its determination on the chosen methodology for setting forward-looking rates in a separate document."*[3]

This Addendum to ECS 74/2019 therefore sets out URCA's final decision in relation to the appropriate methodology for setting forward-looking rates, taking into account the respondents' positions put forth in the first and second rounds of consultations.

[2] Available at: https://www.urcabahamas.bs/wp-content/uploads/2020/01/URCA-Final-Determination-Termination-rates-3.pdf

[3] See Section 3.3 of ECS 74/2019

1.1 Background to this Addendum

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"). 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 section 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 principles of good regulation. ECS 74/2019 sets out in more detail the circumstances in which URCA is required to intervene in the electronic communications sector as well as the principles it must follow in so doing.

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 cellular/mobile voice and messaging services in The Bahamas also offer termination services to other Licensees. These are:

- BTC owning and operating fixed and cellular mobile networks;
- CBL/Systems Resource Group Limited ("SRG") owning and operating fixed networks;
- Aliv owning and operating a cellular mobile network; and
- IP Solutions International Limited ("iPSi") owning and operating a 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.

[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

In line with its 2019 Draft Annual Plan,[5] URCA has begun the process of reviewing these termination rates. This Addendum represents URCA's conclusion to this review process and should be read in conjunction with the Final Determination (ECS 74/2019).

1.2 Structure of the remainder of this document

The remainder of the document is structured the following way:

- Section 2 sets out URCA's Addendum on determining termination rates using Bahamas-specific BU LRIC models;
- Section 3 summarises the merits of developing Bahamas-specific BU LRIC models and presents URCA's final decision on the matter, having taken into consideration the consultation responses; and
- Section 4 presents the conclusions and next steps.

[5] 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

2 URCA's Final Determination – Addendum to ECS 74/2019

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

(iii) Pursuant to section 5(a), (b), (c) and (d) of the Comms Act, containing guidelines that URCA must follow for issuing regulatory and other measures;

(iv) Having regards to the Significant Market Power ("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, set out in ECS 11/2010,[6] ECS 13/2013[7] and ECS 33/2016,[8] as well as any resulting ex ante obligations on the SMP Licensees in these markets, set out in ECS 25/2012,[9] ECS 12/2014,[10] ECS 19/2016[11], ECS 33/2016,[12] and ECS 74/2019; and

(v) URCA having reviewed all evidence and submissions made by BTC, CBL, and Aliv in response to ECS 67/2019[13] and as summarised in ECS 74/2019;[14]

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

7 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

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

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

10 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

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

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

13 https://www.urcabahamas.bs/wp-content/uploads/2019/09/Preliminary-Determination-for-Wholesale-Fixed-and-MobileTermination-Rates-FINAL.pdf

14 https://www.urcabahamas.bs/wp-content/uploads/2020/01/URCA-Final-Determination-Termination-rates-1.pdf

NOW URCA HEREBY DETERMINES as follows:

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

   For the reasons explained in Section 3 below, URCA determines that, going forward, wholesale termination charges in The Bahamas should be set as follows:

   - Fixed termination rates shall be set based on a Bahamas-specific fixed core network BU LRIC model, complemented as necessary with off-model or additional analysis as may be required; and

   - Mobile termination rates shall be set based on a benchmarking of Pure LRIC[15,16] rates observed in other jurisdictions.

   The approaches set out above apply to fixed (BTC, CBL/SRG, iPSi) and cellular/mobile (Aliv, BTC) Licensees having SMP in call or SMS termination services and the additional fixed interconnection services specified in the BTC RAIO.

   URCA notes that the termination rates set out in ECS 74/2019 shall remain in place until further notice. Fixed termination rates shall be revised following the development of the BU LRIC model described above. Mobile termination rates shall remain as per the interim rates set out in ECS 74/2019 until such time as URCA considers it appropriate to conduct an update of the benchmarking exercise.

   Furthermore, for the avoidance of doubt, URCA notes that this Addendum represents an addition to ECS 74/2019. All decisions made within ECS 74/2019 continue to apply until further notice from URCA.

2. **Developing a Bahamas-specific BU LRIC model**

   URCA has responsibility for development of the LRIC model described above and will do so in consultation with the relevant SMP Licensees. URCA shall publish details of this consultation process and related timelines in due course.

[15] A Pure LRIC cost estimate only considers the cost that is incremental to the provision of the service. An alternative measure of Long Run Incremental Costs ("LRIC+"), also considers a mark-up ("+") to account for recovery of the cost of network elements that are shared between different services.

[16] With the exception of SMS termination rates, which shall be set based on a benchmarking of all LRIC-based rates, including LRIC+, as described in Section 3.

3 Merits of developing Bahamas-specific BU LRIC models

In this Section, URCA presents its final position on the merits of developing Bahamas-specific BU LRIC models for the purposes of setting fixed and mobile termination rates.

In so doing, URCA repeats its previous views; summarises and responds to stakeholder comments on this matter and sets out its further considerations. This Section concludes with an explanation of the implications of URCA's proposals for establishing forward-looking, cost-oriented fixed and mobile termination rates.

3.1 Summary of URCA's views on the merits of developing Bahamas-specific BU LRIC models

In the Preliminary Determination (ECS 67/2019), URCA summarised its preliminary views with respect to the merits of developing Bahamas-specific BU LRIC models.

Taking into account consultation responses to ECS 67/2019 and further consideration of the available approaches, URCA has considered a number of potential options for setting forward-looking, cost-oriented termination rates. These options are described below.

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. This compares to a "top down" modelling approach which would take into account the actual networks deployed in The Bahamas.[17] BU models estimate the efficient cost a hypothetical network operator would face to meet a given level of demand, and are based on a series of engineering rules and input cost data. The total estimated cost of the network 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. International precedent from leading regulatory bodies, including official guidance from the European Commission,[18] 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 a BU LRIC model 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 ECS 67/2019, 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. 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.

[17] 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.

[18] EU COMMISSION RECOMMENDATION of 7 May 2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU (2009/396/EC

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. This approach allows URCA to estimate the Bahamas-specific Pure LRIC of termination services, reflecting the country specificity which is not reflected directly in a benchmarking approach, without undertaking the more intensive exercise of developing BU LRIC models. It does, however, result in less accurate cost estimates than a BU LRIC model whilst providing less flexibility to extend the tool to estimate the costs of providing other wholesale services. It is also less common than the other two approaches.
3. **Benchmarking of BU LRIC-based termination rates.** Taking into account consultation responses to ECS 67/2019, URCA has also considered whether benchmarking of BU LRIC-based termination rates could represent an appropriate basis for setting termination rates. This methodology is most relevant where a range of comparable rates is available and where cost differences between jurisdictions are likely to be small. URCA considers that, under those conditions, benchmarking represents an adequate and cost-effective alternative to Bahamas-specific BU LRIC models or targeted costing exercises.

URCA now provides a high-level overview of the options set out above, comparing their respective strengths and 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 it should take into account beyond the suitability of the approaches for setting termination rates. This is to ensure that the selected regulatory remedy is proportionate.

Option 1: Developing BU LRIC models to inform termination rates

The first option would be for URCA to develop two BU LRIC models: a fixed network model and one of a mobile network. European precedent suggests that fixed termination rates can be set based on the incumbent fixed operator’s network technologies, with these then being applied symmetrically to other 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 wholesale services which also use the core network with the addition of some 'off-model' analysis to estimate the costs of other elements of the network outside of the core network, which will not be captured in a BU LRIC modelling exercise. 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 to also calculate the cost of a number of other wholesale regulated services. However, this would require an extension of the BU LRIC models[19] 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 utilise both the access and core networks, such as wholesale leased lines and bitstream services (although URCA notes that there is currently no price regulation of bitstream services in the market).

Option 2: Targeted costing exercise of termination services

The main network components used to deliver each termination service are well-established and common across jurisdictions. Therefore, instead of developing full BU LRIC models, URCA believes it could instead be possible to undertake a targeted analysis of the incremental costs of providing the relevant interconnection services. This exercise would involve issuing information requests to the Licensees to obtain costing data for each of these network components as well as voice and SMS traffic data. This, in turn, would allow URCA to develop estimates of Pure LRIC for each of the 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 (as determined for the interim rates for voice termination services in ECS 74/2019). This is because virtually all costs incremental to the provision of voice termination 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. While a voice termination service does not drive the cost of many network elements it still uses large parts of the network common to other services.[20] An appropriate allocation of common costs to the voice termination service, required under a LRIC+ approach, therefore requires a detailed modelling of many different network elements, making a targeted modelling approach a relatively resource-intensive exercise, similar to the development of a full BU model.

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

[20] 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 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 LRIC+ measure of cost, a targeted costing exercise would still have to consider all these shared network elements.

- **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, the need to apply this mark-up is likely to reduce the accuracy of results, under this approach.

In considering the merits of this approach, both for fixed and mobile termination rates, URCA recognises this approach could be more efficient than Option 1 above. However, it would not enable URCA to later utilise 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.

Option 3: Benchmarking of BU LRIC-based termination rates

A benchmarking of BU LRIC-based termination rates in comparable jurisdictions could represent an appropriate basis for setting termination rates. This methodology is the least resource-intensive of all three options as it does not require collection of any data from Licensees.

A benchmarking approach is particularly attractive when a wide range of sample rates can be observed across other similar jurisdictions and where cost differences between jurisdictions are likely to be small. Where Pure LRIC is used as a cost measure, the similarity of jurisdictions used in the benchmarking sample is less important. URCA considers that, on balance, benchmarking represents an adequate and cost-effective alternative to Bahamas-specific BU LRIC models or targeted costing exercises in the case of mobile services. Similarly to Option 2, described above, this approach does not enable URCA to extend the analysis to determine the charges of other wholesale services (especially if the corresponding rates in other countries are not published). Hence, once there is a need to determine several wholesale charges the merits of developing a cost model increase.

Preliminary summary of options

Based on its initial assessment of Options 1 and 2, URCA preliminary concluded in ECS 67/2019 to develop Bahamas-specific BU LRIC models (i.e., Option 1) to determine forward-looking LRIC-based termination rates for fixed and mobile termination services in The Bahamas. Whilst this approach is likely to require more time and resources to implement than Option 2, URCA preliminarily considered the incremental efforts required to be reasonable (and had not yet considered Option 3 in detail). This was particularly given the advantages of developing "full" cost models, in terms of the additional flexibility that would give to URCA and its ability to use such models in future regulatory inquiries also.

Following URCA's assessment of the consultation responses to ECS 67/2019 and further analysis thereafter, URCA has now arrived at a final view on the most suitable approach for determining LRIC-based termination rates for fixed and mobile termination services in The Bahamas, as explained below.

3.2 Summary of consultation responses to Question 2

For easy reference, consultation question 2 is repeated below.

Consultation Question – BU LRIC Model

Q2. 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?

All three parties provided comments on this consultation question as part of their first-round responses and BTC and CBL also commented on it as part their second-round responses. Below, URCA summarises the comments received and notes that this summary is identical to that presented in ECS 74/2019. URCA's responses, however, include further explanations for its final decision.

Comments received

Aliv's comments

As part of its first round response, Aliv disagreed with URCA's preliminary view on developing Bahamas-specific BU LRIC models for setting mobile and fixed termination rates, explaining its view that more frequent revision of rates, facilitated by rate-setting methods which are less time-consuming (for example, based on benchmarking), has a greater impact on the level of termination rates than country specificity (i.e., the development of Bahamas-specific BU LRIC models). Aliv suggested that a benchmarking exercise can also be adapted to cover other wholesale services which use the core network (an additional capability which URCA only considered to be relevant for the BU LRIC approach). Indeed, Aliv stated that it prefers the benchmarking approach for calculating termination rates.

BTC's comments

As part of its first-round response, BTC agreed with URCA's preliminary view regarding the development of a Bahamas-specific BU LRIC model.

BTC also provided its view that a LRIC approach *"would have the added benefit of eliminating further reliance"*[21] on the historical accounting cost separation approach to setting wholesale rates.

BTC noted that the Preliminary Determination contains no discussion of the methodological specifics in relation to a bottom-up LRIC model to be adopted by URCA, nor any indication of the associated development and implementation timelines. BTC was also of the view that a LRIC costing exercise should begin immediately and could be completed within 12 months.

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[21] Page 6 of BTC's first round response to ECS 67/2019.

As part of its second-round response, BTC commented that CBL, in its first-round response, had provided a lack of detail regarding the sample of jurisdictions used to produce its analysis of termination rates. BTC also criticised CBL and Aliv's support for a benchmarking approach, asserting that they had previously supported a BU LRIC approach.

CBL's comments

As part of its first-round response, CBL disagreed with URCA's preliminary view regarding the development of Bahamas-specific BU LRIC models for setting mobile and fixed termination rates. In particular, CBL suggested that Bahamas-specific BU LRIC models would be unnecessary *"given the relatively low rates and the small service volumes"*[22] in the Bahamas. CBL also provided an analysis of potential ranges of termination rates across a sample of jurisdictions. Similar to Aliv, CBL stated that it would prefer the benchmarking approach for calculating termination rates.

As part of its second-round response, CBL expanded on this view, stating that URCA's benchmarking exercises have *"acceptable margins of error"*,[23] and suggested that LRIC models can be more prone to errors as a result of their significant complexity.

URCA's previous responses to comments received

In ECS 74/2019, URCA recognised the concerns of Aliv and CBL, specifically their views that Bahamas-specific BU LRIC models would be disproportionate, in terms of the time and resource requirements to both URCA and the industry in developing such models, for the purposes of calculating wholesale termination costs alone. However, URCA noted that, as previously described in the Preliminary Determination, developing Bahamas-specific BU LRIC models could be particularly merited if these are then used to inform cost-oriented charges for a range of wholesale services, beyond wholesale termination services.

In relation to Aliv's suggestion that, similar to BU LRIC models, a benchmarking approach may be adopted to inform the cost of a wider range of services than just wholesale termination, URCA noted that this would need to be assessed on a case-by-case basis. However, URCA maintained that a BU LRIC approach would be more flexible, as it would allow it to cost a wider range of wholesale services and take into account the local operating environment in The Bahamas.[24]

URCA noted that BTC has expressed a view that developing BU LRIC models would reduce URCA's reliance on its Accounting Separation (AS) information. In response, URCA considered it important to clarify that transitioning to LRIC-based wholesale termination rates (and possible other wholesale charges) would not result in a removal of SMP Licensees' AS obligations. This is because, in general, AS information provides information not only on unit costs for retail and wholesale services (which can

[22] Page 3 of CBL's first round response to ECS 67/2019.
[23] Page 2 of CBL's second round response to ECS 67/2019.
[24] However, as recognised by Aliv and CBL, this may be a less material consideration when setting termination rates based on Pure LRIC due to a limited variation in these cost estimates across jurisdictions.

inform price regulation of these services), but also financial information (i.e., profit and loss statements and balance sheets) for individual retail and wholesale business units of each SMP Licensee (e.g., retail fixed telephony, wholesale fixed access networks, etc.).

Furthermore, URCA agreed with BTC's observation that CBL's analysis of the merits of a benchmarking approach, based on a sample of countries, is not sufficiently transparent to be assessed in any detail. URCA nevertheless took CBL's broader arguments regarding the principles of setting termination rates into consideration.

In response to BTC's assertion that Aliv and CBL's position had departed from previous support for a BU LRIC model, URCA noted that this seems to be a misunderstanding on BTC's part. URCA noted its understanding that Aliv and CBL have previously expressed support for rates based on LRIC, but that this relates to the LRIC concept more generally (including benchmarking approaches based on BU LRIC) rather than developing Bahamas-specific BU LRIC models specifically.

In summary, therefore, the respondents provided conflicting views on the issue of the appropriate methodology for setting forward-looking, cost-based termination rates. Given this, URCA saw merits in taking a more holistic approach to determining the basis for forward-looking cost-based rates. For example, one of the key benefits of developing BU LRIC models is that they may be used to inform the costs of other regulated wholesale services. URCA considered that there may be several scenarios in which a BU LRIC model could be applicable for several other wholesale services - both in terms of the interconnection rates in BTC's current reference offer and potential additional wholesale services which may be subject to ex ante regulation going forward.

URCA explained that it was not, at the time, in a position to give a definitive view on the appropriate approach for setting forward-looking wholesale charges. URCA noted that, given the significant time and financial implications of any decision for the stakeholders involved, URCA would make a decision on forward-looking rates at a later date and publish this in a separate document. In so doing, URCA noted that the interim rates set in ECS 74/2019 were not affected by the choice of methodology for setting termination rates going forward and introduced those interim rates immediately upon publication of in ECS 74/2019.

3.3 URCA's further considerations

Since the publication of ECS 74/2019, URCA has further considered the relative merits of the approaches under consultation for the purposes of setting forward-looking, cost-oriented fixed and mobile termination rates in The Bahamas.

As previously discussed, a key consideration when deciding on the appropriate approach is the trade-off between (i) the time and resources involved and (ii) the accuracy and flexibility of the chosen approach. This trade-off may, however, differ between fixed and mobile services, given differences in the characteristics of the relevant termination services (and the underlying network used to deliver those services).

Most notably, in ECS 74/2019, URCA emphasised that a key benefit of developing BU LRIC models is that they may be used to inform the costs of other regulated wholesale services, i.e., beyond call and message termination. However, the applicability of a BU LRIC model to other regulatory exercises is likely to differ across fixed and mobile services.

In particular, a fixed BU LRIC model may be used to inform the costs of a range of other regulated wholesale services, given fixed networks are used to deliver a range of services other than call termination. These might include BTC's and CBL's current set of regulated wholesale services as well as potential additional wholesale services which may be subject to ex ante regulation going forward.

On the contrary, a mobile BU LRIC model is likely to be used only to ascertain the cost of mobile call and SMS termination rates. This is because typically there is a much more limited range of regulated wholesale services offered over mobile networks. The advantages of developing a BU LRIC model of a mobile network, relative to alternative approaches which are less costly and less time-consuming, are, therefore, likely to be limited. This is particularly the case given cross-country differences in Pure LRIC-based mobile termination rates, which are now widely available, are limited.

Given these differences, URCA sets out its conclusions on the appropriate methodologies for setting fixed and mobile termination rates separately, below.

Fixed termination rates

Whilst this review focuses on setting fixed termination rates, URCA notes that the Licensees offer a wider range of regulated fixed interconnection services, whilst it is also possible that, subject to other consultation procedures, other regulated fixed access services may be introduced in future. URCA believes it is therefore important to consider the applicability of any model used to set fixed termination rates for determining appropriate regulated rates for other wholesale services in future.

URCA also notes that the cost of many fixed interconnection services specified in the BTC RAIO cannot be informed by the benchmarking exercise URCA carried out to derive the current interim rates, due to the limited availability of benchmarks, while the nature of these services means it would also be challenging to use a targeted costing approach to derive estimates of the costs of providing these services.

As such, URCA remains of the view that setting rates based on a Bahamas-specific BU LRIC model is the most appropriate approach in the case of fixed termination services. A core network BU LRIC model (i.e., excluding the access network) would be sufficient for the purposes of setting cost-based termination rates. This would focus on the BTC network, with the resultant cost estimates then also used to set symmetric call termination rates for other SMP Licensees. As such, there would be no requirement to prepare a separate model for the CBL network.

The BU LRIC model could be designed to also cover the additional fixed interconnection services in BTC's RAIO. However, the cost elements specific to some services, for example the costs of joining circuits and point of interconnections or operator assisted service components (such as those for the provision of calls to emergency services), are not typically captured in a bottom-up costing exercise. As such, the cost of these elements would instead be informed by 'off-model' analysis based on costs provided by Licensees in response to specific data requests (subject to verification by URCA).

URCA notes, however, that a LRIC model of the core network only will not allow URCA to also estimate the costs of network services that also use the access network and are not driven by call or traffic volumes (such as wholesale DIA or wholesale leased lines). In order to estimate the costs of providing these services, URCA would also need to develop a BU LRIC model of the access network or use an alternative methodology to derive access network costs.[25] Given the additional costs involved in developing a BU LRIC model of the access network, URCA considers it is not appropriate to develop such a model at this time. Despite this, URCA is satisfied that the development of the core network BU LRIC model will provide a suitable basis for an extension of the network cost modelling exercise in order to estimate the costs of providing other services in future.

Such a modelling exercise (both the BU LRIC model and off-model analysis) could also be updated over time and used for future rate reviews. This would require collection of up-to-date traffic and network component cost information from the operators.

As such, URCA hereby determines that a BU LRIC model of the fixed core network is the most appropriate approach to setting forward-looking, cost-oriented fixed termination rates in The Bahamas.

As described during the consultation process, developing a BU LRIC model involves a consultation process in order to determine the specific elements of the approach, taking into account feedback from stakeholders. URCA shall publish further details of this consultation process in due course. URCA determines that, until the process of developing a BU LRIC model (and accordingly, setting appropriate cost-oriented rates) has been completed, the interim fixed termination rates determined in ECS 74/2019 shall apply.[26]

Mobile termination rates

Similar to its assessment of the options for setting fixed termination rates, URCA considered a BU LRIC model and a targeted costing exercise as a basis for setting mobile termination rates, as well as a benchmarking approach similar to that used to set the interim mobile termination rates.

In settling on its preferred approach, URCA recognises that there is currently a limited number of regulated, wholesale mobile services offered in The Bahamas, with international precedent suggesting this may remain the case. As such, URCA believes that there are no additional wholesale interconnection or access services which it may be required to cost via a mobile BU LRIC model.

[25] For example, this could be informed using benchmarks or information from BTC's separated accounts or other accounting information collected from CBL (for example, cable TV network costs).

[26] Equally, the glide path for fixed termination rates set out in ECS 74/2019 shall also continue to apply.

Therefore, whilst developing a Bahamas-specific mobile BU LRIC model is in general a suitable approach for setting cost-oriented mobile termination rates, and is preferable to a targeted costing approach (for which URCA identified numerous limitations in ECS 67/2019), URCA considers that, given the resources available to the sector, it is unlikely to be a proportionate method for setting mobile termination rates alone.

Further, URCA notes that both Aliv and CBL expressed a preference for a third option: benchmark-based termination rates. Both Licensees considered benchmark-based rates to be sufficiently representative of Bahamas-specific service costs. Although BTC expressed its agreement with URCA's proposed BU LRIC approach, it was unclear whether BTC's preference was based on an understanding that this approach would result in URCA then reducing its reliance on BTC's Accounting Separation information.

As set out in ECS 74/2019, mobile voice termination rates shall in future be determined to be in line with estimates of the Pure LRIC of providing the service.[27] URCA has already noted that there are limited differences across jurisdictions in Pure LRIC-based termination rates. Indeed, as these rates are widely published, URCA recognises that a benchmarking of Pure LRIC-based rates represents an attractive alternative to a Bahamas-specific BU LRIC model as a methodology for setting forward-looking, cost-oriented termination rates. This is particularly the case given the low resource requirements involved in setting benchmark-based rates.

As such, URCA hereby determines that a benchmarking exercise is the most appropriate approach to setting forward-looking, cost-oriented mobile termination rates in The Bahamas.

Further URCA determines that the interim mobile termination rates determined in ECS 74/2019, which were based on a benchmarking exercise taking into account the latest available information on BU LRIC-based termination charges in other jurisdictions, shall apply until communicated otherwise by URCA.[28]

<u>URCA's Final Determination – BU LRIC Model</u>

Having considered the consultation responses received on the most appropriate approach for setting wholesale termination charges, URCA concludes that:

(i) fixed termination rates shall be determined based on a Bahamas-specific core network BU LRIC model; and

(ii) mobile termination rates shall be determined based on a benchmarking of Pure LRIC[29] rates observed in other jurisdictions.

[27] In the case of SMS termination, an average of all LRIC-based rates, including those based on LRIC+, is used to set the benchmark-based rates, as reflected in the interim rates set in ECS 74/2019. This is a result of an insufficient sample of countries with regulated SMS termination rates based on Pure LRIC. URCA understands this to be a result of regulatory focus shifting away from SMS, which is now a much less important mobile service in many jurisdictions. However, URCA considers this wider sample of LRIC-based rates, which include some rates with a mark-up for common costs (i.e., LRIC+), to be appropriate for setting SMS termination rates, given the comparable jurisdictions used in the benchmarking sample.

[28] Equally, the glide path for mobile termination rates set out in ECS 74/2019 shall also continue to apply.

[29] As explained above, SMS termination rates are based on a benchmarking of all LRIC-based rates, not only Pure LRIC.

4 Conclusions and Next Steps

This Addendum to URCA's Final Determination ECS74/2019 sets out URCA's final position on the appropriate framework for setting forward-looking, cost-oriented termination rates in The Bahamas.

URCA has determined that fixed termination rates shall be determined based on a Bahamas-specific core network BU LRIC model. URCA shall publish the details of the consultation process for the development of this model in due course.

Mobile termination rates shall be determined according to the benchmarking exercise described in ECS 74/2019, which was used to set interim termination rates. The same glide path also applies. As such, mobile termination rates shall continue to follow the interim termination rate schedule published in ECS 74/2019 and summarised in **Table 1** below.

For the avoidance of doubt, all SMP Licensees (BTC, CBL/SRG, Aliv and iPSi) shall continue to be subject to the interim fixed termination rates set out in **Table 1**. Until further notice from URCA, no change shall be made to the regulated rates for any other interconnection services referenced in this Final Determination for which interim rates are not presented in the table below.

Table 1 Interim Termination Rates (BSD cents/min)[30,31]

Service	Current	Dec 2020 onwards	Dec 2021 onwards
Fixed call termination (intra-island)	0.41	0.24	0.07
Fixed call termination (inter-island)	0.62	0.36	0.11
Mobile call termination (domestic)	1.57	1.12	0.66
SMS termination	1.12	0.98	0.84
Inbound international mobile call termination	2.92	2.08	1.23

30 SMS termination rates are expressed per message.

31 As set out in the Preliminary Determination (ECS 67/2019), these interim termination rates shall apply subsequently for a period of one year each, with the "Year 1" rate having come into force on 24 December 2019 (the date of the Final Determination in relation to interim termination rates).