CONSULTATION ON PROPOSED CHANGES TO THE REFERENCE ACCESS AND INTERCONNECTION OFFER PUBLISHED BY THE BAHAMAS TELECOMMUNICATIONS COMPANY LTD.

RESPONSE TO PUBLIC CONSULTATION AND FINAL DETERMINATION

ECS 19/2016

ISSUE DATE: 8 AUGUST 2016

Table of Contents

1 Introduction

In this document, the Utilities Regulation and Competition Authority (URCA) issues its Final Determination on URCA's proposed changes to the Reference Access and Interconnection Offer (RAIO)[1] published by the Bahamas Telecommunications Company Ltd. (BTC).

The objectives of the consultation were to:

- set out URCA's rationale for requiring BTC to amend its RAIO;
- give notice to BTC that URCA proposes to make a determination which will require BTC to amend its RAIO and invite BTC to make representations thereon or provide objections thereto; and
- invite comments from interested parties and members of the public on URCA's proposals.

URCA issued the Preliminary Determination for this consultation on 30 March 2016 and it contained URCA's preliminary views and proposed amendments to BTC's RAIO. The first round of responses to the consultation were due 6 May 2016 and the second round of responses were initially due 10 June 2016 and later extended 24 June 2016.

In addition to seeking general comments and/or views to URCA's proposed amendments, URCA's consultation paper sought respondents' views on four questions:

> **Consultation Question 1**: Do you agree that the BTC RAIO should be amended to include cost-based charging for domestic mobile call termination?
>
> **Consultation Question 2**: Do you agree that the BTC RAIO should be amended to include direct Points of Interconnection (POI) between BTC's mobile switch and other networks providing fixed and/or mobile communication services in The Bahamas?
>
> **Consultation Question 3**: Do you agree that BTC's RAIO should be amended to provide IP Interconnection links upon request and without undue delay?
>
> **Consultation Question 4**: Do you agree that the BTC RAIO should be amended to include mobile message termination service and associated cost-based charging for the service?

Two companies submitted initial responses to the consultation, namely:

---

[1] Available at https://files.btcbahamas.com/2015/10/07/final-btc-urca-approved-raio-revised-july-2014-rev.pdf.

- BTC[2]; and
- Cable Bahamas Ltd. (CBL) on behalf of NewCo2015 Limited (NewCo)[3].

BTC and CBL made additional submissions as part of the second round which entailed commenting on the initial responses.

URCA thanks respondents for their written submissions and participation in the consultation process. The participation by both companies was useful and constructive. Copies of all submissions may be downloaded from URCA's website at www.urcabahamas.bs.

URCA expressly states that failure to respond to any issue raised by respondents does not necessarily signify agreement in whole or in part with the comment, that it has not considered the comment or that it considers the comment unimportant or without merit.

1.1 Cellular Mobile Liberalisation

NewCo is the second cellular mobile licensee in The Bahamas. Following a competitive selection process administered by the Government of The Bahamas, on 30 June 2016, URCA granted NewCo the following licences:

- an Individual Spectrum Licence (ISL);[4] and
- an Individual Operating Licence (IOL).[5]

Both licences are national in scope and have been awarded for a term of fifteen (15) years, until 29 June 2031.

The IOL authorises the licensee to establish, maintain and operate an electronic communications network and provide carriage services in The Bahamas. The IOL is a technology and service neutral authorisation, which allows the licensee to establish its network using any technology or combination of technologies, and to provide any electronic communications services in The Bahamas. The ISL authorises the exclusive use of specified bands of premium spectrum. The ISL is also technology neutral and unrestricted in that it will permit the use of the assigned spectrum for the deployment of any cellular mobile technology.

---

[2] BTC's response to the first round can be found at http://www.urcabahamas.bs/download/031530800.pdf.
[3] CBL's response to the first round can be found at http://www.urcabahamas.bs/download/031549300.pdf.
[4] http://www.urcabahamas.bs/download/005445500.pdf
[5] http://www.urcabahamas.bs/download/005434200.pdf

NewCo is expected to build out its network throughout The Bahamas over a two (2) year period from the date of grant of the IOL and ISL, in line with the rollout and quality of service obligations in its ISL.

Given the electronic communications policy objective to facilitate competition and promote affordable access to carriage services in all regions of The Bahamas, set out in section 4 of the Comms Act, URCA issued ECS 09/2016[6] on the required changes to BTC's RAIO.

The proposed changes to BTC's RAIO (Section 4 of the consultation paper) are intended to ensure that the access and/or interconnection services currently provided by the vertically integrated operator (BTC) are fit for purpose given the liberalisation of the mobile market and hence the increased demand for wholesale inputs that this will likely create. Although URCA appreciates that all the access and interconnection services currently offered by SMP licensees remain relevant, it is also of the view that BTC's RAIO can be enhanced to ensure that the expected increase in demand for wholesale services can be met in a way which promotes competition between service providers. Specifically, URCA considers that there are reasonable grounds to require BTC to amend its RAIO so that the pro-competitive conditions needed for competitive cellular mobile entry are in place.

It should be noted that URCA is currently consulting under separate cover on other regulatory matters relating to cellular mobile liberalisation. In particular:

- ECS 10/2016 sets out URCA's review of the wholesale market for national roaming services and the proposed SMP obligations in this market.[7]
- ECS 16/2016 covers the proposed amendments to the ex-ante regulation of BTC's retail mobile services, as set out in the Retail Pricing Rules for Non Price Capped Services.[8]

1.2 Consultation Process

The Bahamas' electronic communications industry is guided by the Communications Act, 2009 (Comms Act)[9] which provides the legal framework for URCA's regulation of the electronic communications sector. URCA's role is to implement, monitor and enforce this legislation. URCA has wide-ranging powers under the Comms Act, especially as it relates to SMP licensees.

[6] Consultation on Proposed Changes to the Reference Access and Interconnection Offer Published by The Bahamas Telecommunications Company Ltd.
[7] http://www.urcabahamas.bs/download/072284600.pdf
[8] http://www.urcabahamas.bs/download/065196900.pdf
[9] The Communications Act, 2009 can be found at http://www.urcabahamas.bs/download/088554800.pdf.

Section 99 of the Comms Act sets out the procedures for making determinations. In particular, sections 99(1)(a) and (b) of the Comms Act collectively prescribe that if, on its own motion, URCA has reason to believe that a determination is necessary, it may make determinations relating to (among 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 sections 39(1) and 116(2).

According to section 99(2) of the Comms Act, in making any determination, URCA has to consult persons with sufficient interest under section 11 of the Comms Act and provide written reasons for its determination. Section 13(1) of the Comms Act prescribes that:

> "*A regulatory and other measure is likely to be of public significance if it relates to electronic communications services or networks and can lead to one or more of the following —*
> *(a) involve a major change in the activities carried on by URCA under this Act;*
> *(b) a significant impact on persons carrying on activities in those areas where URCA has functions under this Act; and*
> *(c) a significant impact on the general public in The Bahamas*."

Under section 11(1) of the Comms Act, URCA shall afford persons with sufficient interest a reasonable opportunity to comment on URCA's proposals.

URCA considered that the changes it proposed to the BTC RAIO are likely to have a significant impact upon the activities carried on by licensees in The Bahamas. As such, the consultation provided an opportunity for members of the public, licensees and other interested parties to submit written comments to URCA.

1.3 Structure of the Remainder of this Document

The remaining Sections of this document is structured in the following way:

- Section 2 – URCA's Final Determination.
- Section 3 – Responses to URCA's Consultation Questions.
- Section 4 - Conclusions and Next Steps.

2 URCA's Final Determination

This is a Final Determination issued by the Utilities Regulation and Competition Authority ("URCA") pursuant to section 99 of the Communications Act, 2009.

The Determination imposes obligations on the Bahamas Telecommunications Company Ltd. (BTC) and therefore this Final Determination is addressed to BTC.

"WHEREAS,

(i) Section 5 of the Communications Act, 2009 mandates that *"All policy measures, decisions and laws to take effect in the electronic communications sector in The Bahamas shall be made with a view to implementing the electronic policy objectives …";* and,

(ii) The electronic communications sector policy objectives at section 4 of the Communications Act, 2009 include furthering *"the interests of consumers by promoting competition"* and furthering *"the interests of persons in The Bahamas in relation to the electronic communications sector"*; and,

(iii) Section 99(1)(a) and (b) of the Communications Act, 2009 empowers URCA to make determinations; and,

(iv) The Government at Paragraph 89 of the Electronic Communications Sector Policy has urged URCA *"to ensure that all regulatory measures necessary for cellular liberalisation, are met and fulfilled in accordance with the timetable set for such liberalisation*"; and,

(v) Pursuant to sections 116(2), 5, 39 and 40 of the Communications Act, 2009, URCA issued respectively:

- ECS14/2010 *"Final Access and Interconnection Guidelines***"**, containing, among other things, the procedures for making changes to Reference Access and Interconnection Offers; and,

- ECS 01/2011 "*Obligations on Bahamas Telecommunications Company Ltd. Under Section 116(3) of the Communications Act, 2009: Draft Reference Access and Interconnection Offer – Response To Public Consultation and Final Decision"*; and,

- ECS13/2013 *"Assessment of Significant Market Power in Call Termination Services under Section 39(1) of the Communications Act, 2009";* and,

(vi) On 30 June 2016, pursuant to a competitive selection process undertaken by the Minister pursuant to section 26 of the Communications Act, 2009, URCA granted the necessary licences to NewCo2015 Limited (NewCo) to operate a cellular mobile network and provide cellular mobile services in The Bahamas; and,

(vii) URCA has conducted a review of the likely impact of mobile liberalisation on the demand for access and/or interconnection services at Section 3 of ECS 09/2016 *"Consultation of Proposed Changes to the Reference Access and Interconnection Offer published by the Bahamas Telecommunications Company Ltd."*; and,

(viii) URCA has reviewed all evidence and submissions made by BTC and Cable Bahamas Ltd. (CBL) on behalf of NewCo;

(ix) URCA now considers that it is appropriate and proportionate to make certain determinations regarding amendments that BTC shall be required to make to its Reference Access and Interconnection Offer (RAIO) to ensure that the expected increase in demand for Access and/or Interconnection Services can be met in a way which promotes efficient and effective cellular mobile competition

URCA HEREBY DETERMINES as follows:

1. BTC is hereby required to amend its Reference Access and Interconnection Offer to:

    a) Include the URCA-approved interim mobile termination rates of:

        (i) 2.48 cents per minute for calls originating on NewCo's cellular mobile network and terminating on BTC's cellular mobile network[10]; and,

        (ii) 1.40 cents per message for each SMS terminated on BTC's cellular mobile network.

    b) Include details of the service specification and parameters for NewCo and other licensees to interconnect directly to one or more suitable point(s) of interconnection on BTC's cellular mobile network.

    c) Include provisions to enable NewCo and other licensees to obtain interconnection at one or more discreet points on BTC's fixed and/or cellular

[10] For the avoidance of doubt, the URCA-approved MTR (BAH 4.61 cents/minute) for inbound international calls to BTC's cellular mobile network remain unchanged.

mobile networks, using interconnection transport links based on Internet Protocol (IP) supporting Session Internet Protocol (SIP) technology.

d) Include service specifications/parameters for termination of domestic and inbound international SMS messages to BTC's cellular mobile network.

e) The interim termination rates specified at 1a) above shall remain in place until URCA has undertaken its comprehensive review of termination rates. This review will cover both fixed and mobile termination rates for all SMP licensees. This review will seek to determine both the appropriate approach for determining cost based termination rates in the context of the Bahamian communications sector and the required process for implementing these. URCA's preliminary findings will be subject to consultation.

2. BTC is required to:

   a) submit copies of its amended RAIO (in tracked changes) to URCA and NewCo within fourteen (14) calendar days of the date of this Final Determination.

   b) provide physical interconnection (IP/SIP and at least one (1) direct POI to its mobile switch), within thirty (30) calendar days of NewCo's request to do so; and

   c) BTC and NewCo shall conclude a full interconnection agreement within forty-two (42) calendar days following BTC receiving a request from NewCo to negotiate an interconnection agreement.

3. URCA will review the amendments to BTC's RAIO and issue a final decision on the amendments. The final decision may require BTC to make additions or changes to the amended RAIO. BTC shall complete such changes no later than fourteen (14) calendar days after being instructed to do so by URCA and shall present the amended RAIO to URCA for review and approval.

4. NewCo may, at any time following the date of this Final Determination, initiate interconnection negotiations with BTC by the making of a request to BTC to negotiate an interconnection agreement and/or provide interconnection services. Where such negotiations occur prior to URCA's approval of BTC's RAIO as amended pursuant to this Final Determination, BTC and NewCo shall negotiate and implement interconnection in good faith based on and consistent with the current URCA-approved BTC RAIO or the amended RAIO as appropriate, and the matters determined in this Final Determination.

Any agreements reached would be automatically be amended to reflect URCA's approval of the amendments to BTC's RAIO in accordance with this document.

5. Failure to comply with URCA's Final Determination may result in URCA imposing sanctions in accordance with Part XVII of the Comms Act.

6. All references to BTC shall, in accordance with section 21(1) of the Comms Act, be taken to include both BTC and any subsidiary undertaking of BTC listed in the application for a licence or notified to URCA from time to time in accordance with section 21(2) of the Comms Act.

Kathleen Riviere-Smith
Chief Executive Officer

8 August 2016

3 Responses to Consultation Questions

In this Section, URCA summarises and responds to the comments received.

3.1 Termination Rates for Domestic Mobile Calls

<u>Consultation Question - Termination Rates for Domestic Mobile Calls</u>
Q1. Do you agree that the BTC RAIO should be amended to include cost-based charging for domestic mobile call termination? If not, why?

<u>BTC's comments</u>

In its initial response, BTC disagreed with URCA's proposal that BTC's RAIO should include a mobile termination rate (MTR) for domestic mobile calls, and to then leave the choice of retail pricing regime to the market. Instead, BTC sees a need for URCA to thoroughly review the merits of common retail pricing regimes and how these may impact the sector more widely (including the link to termination rates). URCA should then issue a separate consultation on this matter where URCA sets out a preliminary determination based on a review of the advantages and disadvantages of each option.

BTC argued that to facilitate the entry of NewCo, URCA should establish the following "interim" regime:

- Retail fixed-to-mobile calls remain subject to a receiving party pays (RPP) regime and so a zero MTR applies to these calls.
- Retail mobile-to-mobile calls remain subject to a calling party pays (CPP) regime and a MTR of 4.61 cents per minute (i.e., the current MTR for incoming international calls terminating on BTC's mobile network).

According to BTC the above regime should apply equally to BTC and NewCo.

BTC argued that URCA should then follow-up with a two-stage consultation process, firstly identifying any need to amend the retail pricing regimes and/or interconnection regimes for mobile calls, followed by a review of the interim MTRs set out above.

However, at this stage, BTC opposes any moves to switch the retail pricing regime for fixed-to-mobile calls from a RPP regime to a CPP regime, unless this was based on a URCA decision after having consulted the market. This is due to the wider implication that such a change could have on price regulation for fixed voice services, the affordability of universal services and URCA's numbering policy (where currently consumers may not be able to easily distinguish a fixed and mobile number). BTC further considers there to be international and regional precedent for maintaining the current pricing regime. BTC's position on these matters is set out in more detail below.

Precedents for RPP regime under mobile competition for fixed to mobile calls

BTC notes that there is international precedence for maintaining the current pricing regime after mobile liberalisation. In particular, according to BTC, Barbados, Bermuda and the USA have retained a RPP regime after the introduction of mobile competition. BTC also considers there to be a common link between pricing regimes which include unmetered local calls from a fixed line and those which are based on RPP for fixed-to-mobile calls (with, for example, this being the case in Barbados, Canada, Hong Kong and USA) due to consumers being used to not having to pay for local fixed originated calls.

Implications of moving to a CPP regime for fixed to mobile calls

BTC further raised concerns about the potential implications of moving to a CPP regime. While at the moment, mobile users pay for the costs of receiving a mobile call, BTC stated that under CPP, there would be a need to recover the full incremental cost of fixed-to-mobile calls (including the mobile termination rate levied by the mobile operator) from fixed line customers. In turn, this could be achieved by either introducing a usage charge for these calls (which are currently unmetered) or by increasing the monthly line rental charge.

BTC raised concerns that it would have to seek regulatory approval for any changes to its retail prices for fixed calls in the event of a move to CPP. However, in contrast, SRG and NewCo have commercial flexibility to change retail prices for these services (as SRG and NewCo retail prices are not regulated). This would put these operators in an advantageous position over BTC, given the length of the approval process and the resulting uncertainty on the retail tariffs.

BTC also raises the potential implications of a move to a CPP regime for the affordability of USO[11] services. In particular, if BTC were to introduce usage charges for fixed calls, the risk of any such price changes failing to meet a USO affordability test would impose a significant risk on BTC.

Finally, BTC argued that, to protect consumers, there may be a need to change the current numbering plan before introducing a CPP regime. Such a change should allow consumers to clearly identify whether they are calling a fixed or mobile number (and thus, the relevant retail

[11] Universal Service Obligation

prices applying to such a call). This is because under the current number plan, some fixed and mobile numbers come from the same range (e.g., while most of the numbers under the 3XX numbering range have been assigned to BTC's fixed services, four (4) have been assigned to BTC's mobile services. According to BTC, similar issues also arise on the 4XX, 5XX and 6XX numbering ranges.)

Proposed level of the charge for domestic mobile call termination services

BTC notes that determining a cost-based mobile call termination rate will be a resource and time intensive exercise. As such, as an interim solution, BTC proposes to apply the current MTR for international incoming calls of 4.61 cents/minute to domestic mobile-to-mobile calls also.

Further, whilst recognising that the consultation document does not speak to this, BTC is of the view that call termination rates should be symmetric irrespective of technology and operator. According to BTC, any party that believes URCA should deviate from this principle should face the burden of proof to justify any asymmetry in termination rates.

CBL's comments

Similar to BTC, CBL also considered there to be a clear link between the necessary changes to BTC's RAIO and the retail pricing regimes applicable to calls terminating on mobile networks. In particular, CBL contended that the need to include a termination rate for domestic mobile call termination in BTC's RAIO depends on whether a CPP regime will apply to either fixed-to-mobile and/or mobile-to-mobile (off-net) calls. CBL argued that given BTC's dominant position in all relevant wholesale and retail markets, BTC should not be allowed to unilaterally determine the retail pricing regime for mobile call services. In particular, given BTC's market power in all mobile services, CBL expressed concern that it would be forced to implement the same pricing regime as BTC (i.e., while CBL would legally remain free to choose its preferred pricing regime, CBL considers it to not be commercially viable for a new entrant to adopt a different regime than that of the incumbent operator). Instead, the pricing regime should be decided through negotiations between both licensees or, alternatively be set by URCA.

CBL further noted that, prior to launching its mobile services, it will have to decide on the charging regime for calls terminating on its mobile network for retail off-net mobile calls to BTC's mobile customers. However, for CBL to determine its own pricing regime, it argued that it required clarity on, amongst others:

- BTC's preferred charging regime for calls terminating on BTC's mobile network; and
- the MTR applicable for calls terminating on BTC's network and/or the methodology and underlying information for deriving these rates.

Therefore, rather than amending BTC's RAIO now, CBL expressed the view that URCA should ensure through this consultation process that CBL obtains the above information to allow it to determine its preferred charging regime. Instead, CBL felt that URCA should further make all necessary preparations (such as determining/revising the cost based MTR), but only require BTC to add the charge for domestic mobile call termination services to its RAIO if both mobile operators have agreed to adopt a CPP regime or URCA has imposed such a regime, in the event that such intervention is necessary.

Notwithstanding the above, CBL raised potential concerns under either possible charging regime.

Overall, CBL stated a preference for adopting a CPP regime for all domestic mobile calls, including calls originating on fixed networks. This would be in line with international precedent, would reduce complexity for end users and reduce the scope for potential cross-subsidisation of BTC's fixed line business by its mobile service business. Under this regime, CBL further stipulated that, in its view, BTC should not be allowed to apply a different termination charge for calls originating on its mobile network and those originating on NewCo's mobile network, as this would constitute undue discrimination.

Implications of a CPP regime

For CBL, a key concern under a CPP regime would be BTC's potential ability to cross-subsidise its retail on-net mobile call price by, amongst others, any excess returns made from above-cost termination rates. This CBL argued would lead to a "club effect" since it would be more attractive for customers to remain on BTC's network and take advantage of its low on-net prices, than switch to NewCo, as a customer switching to NewCo would expect to make a large number of off-net calls and NewCo would not be able to offer attractive off-net prices due to the prevailing MTRs charged by BTC. CBL suggested that any resulting distortion would be further exaggerated by the relative differences in number of customers on each network (i.e., given the large number of customers on BTC's mobile network, low on-net mobile call prices represent an important retention policy due to the network effect. In contrast, NewCo will initially be more dependent on off-net mobile call prices, given the limited number of customers on its mobile network).

Given this, CBL considered it important for domestic mobile call termination rates to be reflective of "pure" long run incremental costs (LRIC). That is at the marginal cost of an efficient operator providing these services, excluding any contribution to fixed or common costs. According to CBL, pure LRIC based MTRs would be in line with international and increasingly regional precedent (i.e., Jamaica and across the French-speaking Caribbean). They would, in

CBL's view, further reduce the need for ex-ante regulation of BTC's on-net/off-net retail pricing (see below).

CBL recognised that determining pure LRIC termination rates would require URCA to develop a bottom-up LRIC model of a hypothetically efficient operator, which would require up to twelve (12) months for URCA to complete. As such, it proposed that in the interim, domestic MTRs in BTC's RAIO should be set equal to zero. Thus, in its response to BTC's comments, CBL strongly objected to BTC's proposal to apply the current RAIO charge of 4.61 cents per minute for incoming international calls terminating on BTC's mobile network to all calls terminating on BTC's mobile network. This is because, according to CBL, this rate is now out-dated and not reflective of an efficient cost level and would therefore facilitate the "Club Effect", discussed above.

In the event that a CPP regime is applied but MTRs are above a rate consistent with a Pure LRIC cost estimate, CBL considers it essential for URCA to apply ex-ante regulation to the on-net/off-net price differentials of BTC's retail mobile call services, in order to prevent any anti-competitive behaviour by BTC. CBL recognised that such regulation is non-trivial to implement and is not in line with URCA's preliminary views on the proposed changes to the Retail Pricing Rules applicable to BTC's retail mobile services, consulted under separate cover.

Implications of a RPP regime

CBL recognised that, in case a RPP regime was implemented across all retail mobile call services, this would not require determining "pure" LRIC MTRs and would allow BTC to continue its current pricing regime for fixed-to-mobile calls. However, if this was the case, CBL considers there would be a need for URCA to introduce ex-ante regulation on BTC's retail mobile call charges to ensure these are not anti-competitive. This is because CBL is concerned that BTC's current retail airtime charge for inbound mobile calls of 33 cents per minute is excessive (given that it is more than seven times the current MTR).

URCA's response to comments received/Final Decision

URCA recognises the link between including a MTR for domestic mobile call termination services in BTC's RAIO and the retail pricing regime adopted for the relevant fixed and mobile call services (i.e., a MTR for domestic mobile call termination is only required if a CPP regime is adopted for at least one of the retail call services terminating on BTC's mobile network). From the responses received, URCA has not seen any statements to suggest that there is any intention for either licensee to move away from the current CPP regime for mobile-to-mobile calls (indeed, URCA notes CBL's stated preference for a CPP regime, assuming a cost-oriented MTR based on "pure LRIC"). Given this, URCA considers that there is a need to include a MTR for domestic mobile call termination services in BTC's RAIO. This is also to provide greater clarity to both licensees on one of the potential parameters influencing their preferred choice of retail pricing regime, as suggested by their submissions.

Below, URCA responds to the comments of the parties on the level at which this MTR should be set. However, before doing so, URCA addresses some of the comments received by licensees on the retail pricing regime.

Retail pricing regimes

URCA notes the stated concerns by both licensees on the potential risks underlying a "market based" approach to determining retail pricing regimes. While URCA agrees with the need to limit potential uncertainties in the market on the underlying pricing regime and the merits of all licensees adopting the same regime, URCA, at this point in time, also sees no need for regulatory intervention to impose a retail pricing regime.

No case for regulatory intervention

In general, URCA see merits in operators adopting a common pricing regime as this would lead to greater clarity to consumers and a less complex market environment. However, it seems unclear whether licensees will converge to such an outcome. In particular, BTC has stated a preference to retain RPP for fixed-to-mobile calls and URCA has seen no stated intent by either licensee to move away from the current CPP regime for mobile-to-mobile calls. There is also regional precedence for a mixed approach. As indicated by BTC in its response, in Barbados, there is a RPP regime for fixed-to-mobile calls while a CPP regime applies to all mobile-to-mobile calls.

URCA further agrees on the benefits of having a consistent pricing regime for particular call services across all licensees. This is to reduce the complexity in retail and wholesale pricing, increase transparency to all market players and consumers, and to reduce the risk of potential competitive distortions arising from licensees adopting different regimes. This further seems to be in line with international precedence (i.e., URCA is not aware of jurisdiction where operators have adopted different pricing regimes for the same call services).

Any regulatory intervention needs to be motivated by and targeted at a market failure. URCA has seen no evidence to suggest that the current pricing regime is the result of a market failure. This being the case, URCA is not advocating a change to the status quo. URCA further does not concur with CBL's concern that, in the absence of regulatory intervention, CBL would be forced to follow BTC's lead on the adopted retail pricing regime. This is elaborated on further below, where URCA reviews the potential outcome for the additional call types which will come into play under mobile liberalisation:[12]

- Fixed-to-mobile calls from BTC to NewCo – In the absence of being declared to have SMP in retail mobile services, NewCo can decide whether to charge its mobile customers for receiving these calls (i.e., RPP) or instead to charge BTC a termination charge (based on a regulated MTR). NewCo's choice may be influenced by the level of its regulated MTR relative to its cost of providing these services.
    - Under RPP, a MTR equal to zero would apply. Given BTC's SMP in retail fixed voice services, the SMP non-discrimination obligation would then apply and require BTC to apply the same retail pricing principle (i.e., un-metered calls) for the fixed-to-mobile calls terminating on its mobile network.
    - If NewCo would charge BTC a MTR[13], then BTC would be allowed to pass on these wholesale costs to its fixed retail customers (i.e., it would be able to charge different retail prices for fixed-to-mobile calls to NewCo and its own mobile customers, due to the underlying objective cost differences for both call types).

- Fixed-to-mobile calls from SRG to NewCo – As neither licensee has SMP on the retail level, both are, in principle, free to choose their retail pricing principles. NewCo can again decide whether to impose a RPP regime for its customers or to charge its regulated MTR to SRG.

- Mobile-to-mobile calls from BTC to NewCo– The situation for this call type is similar to the fixed-to-mobile calls from BTC to NewCo, discussed above.

- Mobile-to-mobile calls from NewCo to BTC – BTC has SMP in both retail and wholesale mobile services. As such, the SMP non-discrimination obligation would then apply and require BTC to ensure consistency in the retail pricing principle to its on-net mobile-to-mobile calls (i.e., CPP) and thus, charge NewCo the regulated MTR.

In summary, URCA does not consider there to be a case for ex-ante regulatory intervention on the retail pricing regimes adopted for these services at this point. However, URCA sees the importance of certainty on and stability in the retail pricing regimes and the resulting

[12] As stated above, URCA understands that BTC has a preference to retain the status quo on fixed-to-mobile calls and neither licensee has stated any intent to move away from a CPP regime for mobile-to-mobile calls.

[13] The level of NewCo's MTR is considered under separate cover, since it is beyond the scope of this determination. See ECS 17/2016 at http://www.urcabahamas.bs/download/054114100.pdf

implications for the mobile termination services covered by BTC's RAIO. This is discussed further below.

Need for certainty on and stability in the retail pricing regimes

URCA agrees with BTC's and CBL's call for certainty on the retail pricing regime going forward. This is to allow NewCo to determine its retail pricing strategy and business model prior to launching its mobile services, as well to enable BTC to confirm its pricing strategy given the expected entry. As such, URCA considers it is important for URCA to provide certainty on the parameters influencing the licensees' choice of their retail pricing regime. In particular, URCA considers there to be a need to include a termination service for domestic mobile calls in BTC's RAIO. There is also a need to determine the level of the termination rate for this RAIO service. This is discussed further below.[14]

URCA reiterates that it sees merits in market stability. **Once licensees have chosen a preferred retail pricing regime, URCA considers it important to ensure that the licensees retain their preferred regime for a prolonged period of time, or with clear notice and regulatory control over any decision to change. This is to remove any uncertainties and disruptions arising to other market players and consumers from a change in the retail pricing regime. Thus, where this is within URCA's regulatory powers, it will aim to ensure that any changes in retail pricing regimes in future follow from a suitable regulatory or public consultation/information exercise.**

Setting BTC's MTR for domestic mobile calls

URCA notes both licensees' opposing views on the appropriate level of the MTR for domestic mobile calls terminating on BTC's mobile network. URCA agrees on the need to review BTC's MTR to ensure that it is reflective of the efficient cost of providing mobile call termination services. It further agrees with CBL that BTC's proposed rate the current MTR for international incoming calls of 4.61 cents/minute may not reflect that efficient cost level. In particular, this rate was determined based on historic unit cost estimates by BTC and a glide-path informed by an international benchmark of MTRs in 2012. URCA further notes the respondents' call for a more comprehensive review of termination rates, including further consultation. However, URCA is cognisant of the need to set a MTR for domestic mobile calls terminating on BTC's mobile network as part of this process. Given this, URCA has decided to adopt the following two-stage approach to setting BTC's MTR:

[14] URCA notes BTC's comments on the need for symmetry in MTRs across both licensees. However, the regulation of NewCo's mobile termination services is beyond the scope of this consultation process. Instead, URCA is consulting under separate cover on this matter. See ECS 17/2016 available at http://www.urcabahamas.bs/download/054114100.pdf

- As part of this process, URCA determines interim MTRs for call termination on BTC's mobile network. These are set out below.
- This will be followed by a comprehensive review of termination rates. This review will cover both fixed and mobile termination rates for all SMP licensees. It will seek to determine both the appropriate approach for determining cost based termination rates in the context of the Bahamian communications sector and the required process for implementing these. URCA's preliminary findings will be subject to consultation.

Interim rates for mobile call termination services on BTC's mobile network

In general, URCA remains of the view that termination rates should be reflective of the efficient (incremental) cost of providing these services. This is in line with the requirements of the Comms Act and the principles set out in the Access and Interconnection Guidelines.[15]

As recognised by both respondents, determining efficient cost oriented wholesale charges is a time and resource intensive exercise which cannot be completed within the given timeframe for this RAIO review. As such, in the absence of Bahamas-specific LRIC values, URCA has reviewed BTC's latest available (audited) separated accounts (submitted in October 2015) to inform the interim MTR for domestic call termination on BTC's mobile network. In particular, BTC's latest available separated accounts indicate that its network unit cost of mobile call termination services has fallen to approximately 2.28 to 2.68 cents/minute, with a midpoint of 2.48 cents/minute.[16]

URCA notes that this value is broadly in line with MTRs elsewhere in the region which have been informed by LRIC cost models.[17] In particular, Table 1 below provides an overview of the current MTRs in countries across the region which have developed LRIC-based MTRs, and MTRs across Europe (where MTRs are commonly, but not exclusively, based on LRIC). This indicates that an interim MTR for BTC of 2.48 cents/minute falls within the observed rage of regional LRIC-based MTRs (especially those based on a LRIC+ approach).

---

[15]URCA notes CBL's call for to set BTC's interim MTR equal to zero. However, URCA considers this not to be compatible with the provisions of the Comms Act which specifies the need for cost based (i.e. non-zero) interconnection tariffs.

[16]In the time available, URCA was not able to derive a more accurate value of BTC's unit cost for mobile call termination than the range quoted above. This is due to BTC's separated accounts not containing the relevant costing data for call termination only and, when determining the initial RAIO charges in 2010, BTC having developed a separate analysis for those charges.

[17]Within LRIC based interconnection rates, there are two main approaches, differing in the treatment of shared and common costs: "pure LRIC" only captures the incremental costs associated with the relevant service. "LRIC+" takes into account of shared and common costs.

Table 1: LRIC Based Mobile Call Termination Rates for Across the Region and Europe

Country	Implementation Year	Costing Approach	MTR (BAH cents/minute)
ECTEL member states[18] - average	2009	LRIC+	9.29[19]
Cayman Island	2012	LRIC+	3.46
Barbados	2015	LRIC+	2.75
Jamaica	2013	Pure LRIC	0.87
French Caribbean	2010	Pure LRIC	0.85
Regional average			*3.44*
European (weighted) average			*1.29*[20]

Based on the above, BTC is required to include the following interim MTRs in its revised RAIO. These interim rates shall remain in place until URCA has undertaken its comprehensive review of termination rates.

Table 2: Interim MTR for Domestic Call Termination Services on BTC's Mobile Network

Call termination service	MTR (BAH cents/minute)
Incoming domestic calls to BTC's mobile network	2.48

URCA's Final Determination – Interim MTR for Domestic Call Termination Services on BTC's Cellular Mobile Network

URCA has determined that BTC should amend its RAIO to include an interim termination rate of 2.48 cents/minute for calls originating on NewCo's cellular mobile network and terminating on BTC's cellular mobile network. This will be followed by a comprehensive review of termination rates. This review will cover both fixed and mobile termination rates for all SMP licensees. This review will seek to determine both the appropriate approach for determining cost-based termination rates in the context of the Bahamian communications sector and the required process for implementing these. URCA's preliminary findings will be subject to consultation.

[18] Dominica, Grenada, St Kitts, St Lucia and St Vincent and the Grenadines.

[19] http://ectel.int/wp-content/uploads/2015/12/implementation-interconnecting-rates.pdf

[20] The EU benchmark is based on a weighted average of Member States. Of these, the majority (21 out of 28) use BU LRIC (Pure LRIC) to set MTRs. In the other 7 countries, rates are set either using benchmarking or BU-LRAIC ("LRIC+").

3.2 Direct Connectivity to BTC's Mobile Switch

Consultation Question –Direct Connectivity to BTC's Mobile Switch

Q2. Do you agree that the BTC RAIO should be amended to include direct Points of Interconnection (POI) between BTC's mobile switch and other networks providing fixed and/or mobile communication services in The Bahamas? If not, why?

BTC's comments

According to BTC, the technical, physical and economic feasibility of requesting new POIs must be evaluated before any such POIs can be established. BTC maintains that the existing POI can be used in the near and intermediate term until direct interconnection is deemed to be economically feasible due to an increase in the volume of interconnection traffic for mobile-to-mobile calls. BTC maintains a similar position with respect to direct interconnection from other fixed networks to BTC's mobile network: namely that direct interconnection should only be introduced once it is deemed economically feasible. However, contrary to mobile-to-mobile traffic, BTC expects traffic from other fixed line operators to BTC mobile subscribers to decrease as NewCo gains market share.

BTC stated in its response that URCA provided no evidence for its claim that direct interconnection is common elsewhere. In contrast, BTC referred to the five (5) member states in the Eastern Caribbean Telecommunications Authority (ECTEL) where it claims that new entrants to the mobile market were required to interconnect to the incumbent's mobile network via its fixed network switch. BTC further stated that interconnection arrangements vary by country and ultimately depend on historical factors relating to the timing and nature of market liberalisation, among other things. BTC also does not consider direct interconnection to be necessary for a level playing field among mobile operators, as long as there are efficient and effective transit alternatives. Indeed, BTC believes that with the growing trend of operators using IP/SIP based interconnection instead of legacy Time Division Multiplexing (TDM), the issue of which switches interconnect will become irrelevant as interconnection will increasingly take place at the Internet Protocol (IP) level.

In its second response, BTC reiterated that it was not opposed to URCA's proposal to amend its RAIO to accommodate requests for direct connectivity to BTC's mobile switch/network. BTC, however, asserted that its RAIO has well-established processes for handling such requests, assessing technical requirements and implementing and testing these arrangements. BTC added that the RAIO sets timeframes in "working days" not calendar days as suggested by CBL. BTC then stated that it will take every measure possible to process and implement requests for direct interconnection as quickly and efficiently as possible. BTC noted that this will also require the full compliance and cooperation of the OLO who is seeking interconnection. Thus, whilst BTC stated it is willing to consider means to expedite the process for agreeing new POIs, it believes that proposing unworkable timeframes is unhelpful. In regard to CBL's suggestion that URCA introduce new penalties if BTC failed to interconnect in an URCA-specified timeframe (see below), BTC commented that potential delays or disputes can be addressed through the dispute resolution and penalty provisions in the current RAIO. It therefore believes that URCA should reject CBL's proposal.

CBL's comments

CBL agrees with URCA's consultation position that BTC's RAIO should be amended to include the right for a licensed operator to request direct interconnection with BTC's mobile network, and to include an obligation for BTC to provide, within thirty (30) days of such request, a direct POI between BTC's mobile switch and the licensed operator's network. CBL asserted that any failure by BTC to deliver a direct POI within the URCA-specified timeframe could lead to NewCo's failure to meet the roll-out obligations in its licence. Given such materially adverse consequences, NewCo requests that URCA should require BTC to include, in its amended RAIO, specific remedies, including financial penalties, that would be payable by it to an access seeker, if BTC fails to interconnect. CBL also suggested that if BTC failed to implement direct interconnection to its mobile network, it should not be able to charge a transit fee to any party having to transit the BTC fixed network to terminate a call on BTC's mobile network.

As part of its second response, CBL asserted that BTC is trying to delay direct interconnection to its mobile network by only accommodating requests and proposing to assess whether such requests are technically, physically and economically feasible. That is, CBL believes that direct interconnection should be a default option within the RAIO, rather than only being available on request.

CBL affirmed that direct interconnection will reduce the cost of interconnection, by meaning that CBL would no longer be required to transit BTC's fixed network and hence no longer be required to pay the transit rate of 1.04 cents currently in force. CBL stated that the existing transit rate in The Bahamas is higher than the existing Mobile Termination Rate (MTR) in Jamaica which is based on a "Pure LRIC"[21] model. CBL went on to note that an interconnection arrangement that may be economically feasible to BTC may not be economically feasible to NewCo due to BTC having an incentive to maintain indirect interconnection to it , as a result of

[21] LRIC means Long Run Incremental Cost. Pure LRIC does not take account of joint and/or common costs associated with the service.

it then continuing to receive the transit fee paid by NewCo. CBL thus asked URCA to clarify that the term "economically feasible" takes into account the costs and benefits to both operators.

Lastly, CBL referred to the fact that BTC's New Providence mobile switching centre is in the same location as the New Providence POI. CBL therefore believes that it will not be necessary to create a new POI for direct interconnection to the BTC mobile switch on New Providence because all of the necessary equipment and passive infrastructure are already in place. CBL then noted it provisions end-to-end IP interconnection with international carriers in 10–15 working days, including billing verification, and therefore it maintains that a 30-day period to establish direct connectivity links to BTC's mobile switch, from the point of ordering, is reasonable and should be included in the RAIO.

<u>URCA's responses to comments/Final Decision</u>

URCA notes the opposing views of the respondents on the question. It especially notes BTC's insistence that the physical, technical and economic feasibility of any proposed or requested new POIs must be evaluated and that the processes in BTC's RAIO for requesting new services would already allow NewCo to apply for direct interconnection to BTC's mobile switch. URCA, however, takes issue with many of the arguments put forward by BTC, especially as they relate to NewCo's proposal that the RAIO should include the right for a licensed operator to interconnect directly to BTC's mobile switch, and in light of challenges surrounding previous discussions regarding direct interconnection to BTC's mobile switch.

As a first step, URCA notes from its *"Final Guidelines – Access and Interconnection"* (ECS 14/2010) that:

> *"In general, interconnection should be available at any technically feasible point, unless at that point:*
>
> - *is not economically feasible;*
> - *is not feasible given the existing network configuration; or*
> - *would compromise the integrity of an electronic communications network; or*
> - *would compromise the interoperability of any electronic communications network."*

URCA accepts the broad principle that interconnection services should be bounded by technical and economic feasibility. However, for a RAIO to operate efficiently, there needs to be a core set of interconnection services and enabling components which are already assumed to be feasible to offer and hence which an access seeker can request without having to demonstrate the feasibility of the service. URCA now considers that direct interconnection to BTC's mobile network falls within this category of service.

URCA does not consider that BTC has established that it is technically, economically, and/or physically infeasible for NewCo to interconnect directly to BTC's mobile network. In addition, BTC has not indicated why a feasibility test is required on this occasion or in what circumstances the test would be deemed to have not been met. URCA is unaware of any existing network configuration or interoperability constraints that would render it physically or technically infeasible for BTC to offer direct interconnection to its mobile switch to NewCo. Indeed, URCA's understanding is that such direct interconnections are commonplace globally utilising the same or similar network equipment and configuration currently employed by BTC. Equally, from an economic standpoint, URCA notes that the expected increase in interconnection traffic arising from mobile liberalisation will make it considerably more economically and technically feasible and efficient for NewCo to interconnect directly to BTC's mobile network, as opposed to connection via BTC's fixed network. Indeed, without this, NewCo would be required to pay a fixed network transit charge – an additional cost resulting from inefficient routing of calls which will serve only to harm consumers.

URCA notes that BTC is not contesting this point and has now acknowledged in its submissions that in the coming months the volume of interconnection traffic between the two mobile networks will increase. Given this, URCA is confident that economic feasibility is not a major concern.

URCA agrees with BTC's statement that interconnection arrangements vary by country. Among other factors, these variances can be influenced by the timing and nature of market liberalisation. However, URCA maintains that it is not unusual or outside the international mainstream for a new mobile entrant to interconnect directly to the incumbent's mobile switch. Significantly in the European Union, mobile entrants are allowed to establish direct interconnection to incumbents' mobile networks unless this can be shown to be technically infeasible. URCA is not aware of any situation where direct interconnection to an incumbent's mobile switch has been deemed technically infeasible. URCA further notes that there are other instances in BTC RAIO where operators have a choice between services (e.g., customer-sited vs In-span interconnection). URCA does not see any reason why the situation should be any different in The Bahamas.

URCA acknowledges BTC's comments that its RAIO already includes a process for requesting new services. However, in the context of NewCo's market entry and the lack of any clear evidence that direct interconnection to BTC's mobile network would be economically infeasible, URCA is concerned that the current RAIO provisions and related processes are unnecessary and would not lead to an efficient outcome.

Similarly, URCA is not aware of any existing network configuration and/or interoperability concerns that would mean it would not be feasible for fixed networks to interconnect directly to BTC's mobile switch. URCA notes BTC's argument that with the introduction of mobile competition, interconnection traffic between other fixed networks and BTC's mobile network is likely to decline. URCA, however, is of the view that once there is direct interconnection between NewCo and BTC's mobile switch any additional cost associated with direct fixed to mobile interconnection is likely to be insignificant. As such, in the circumstances URCA does not believe it would be economically infeasible for BTC to provide other fixed networks with direct interconnection to BTC's mobile switch. In addition, the principle of non-discrimination requires that BTC also provide fixed networks with direct access to BTC's mobile switch.

URCA has also considered CBL's proposals for specific remedies, including financial penalties, to be added to BTC's RAIO in the event that BTC's fails to deliver direct interconnection to its mobile network. However, URCA considers that its enforcement powers under Part XVII of the Comms Act are sufficient to address any potential breach and it would be inappropriate for URCA to stipulate a financial penalty on a purely hypothetical basis. URCA would need to consider the specific circumstances pertaining to a breach in order to determine an appropriate remedy or penalty. It therefore rejects CBL proposal.

In the same vein, URCA is at this time unable to make a decision in respect of CBL's proposal that BTC should waive its fixed network transit fee in the event that it fails implement direct interconnection to its mobile network in a specified timeframe. This is because, as noted above, failure by BTC to comply with this determination will trigger URCA's enforcements powers under the Comms Act, and in such event URCA would consider any and all appropriate remedies.

At Section 3.5 below, URCA addresses CBL's proposed timelines for BTC to provide direct interconnection to its mobile network to NewCo.

.

URCA's Final Determination – Direct Connectivity to BTC's Mobile Switch

It is URCA's final determination that BTC amend its RAIO to allow NewCo and other licensees to establish one or more direct POI with BTC's Mobile Switch. The amendments to BTC's RAIO should include details of the service specification and parameters for NewCo and other licensees to interconnect directly to one or more suitable point of interconnection on BTC's cellular mobile network.

3.3 Interconnection via IP/SIP Interconnection Links

<u>Consultation Question – Interconnection via IP/SIP Interconnection Links</u>
Q3. Do you agree that BTC's RAIO should be amended to provide IP Interconnection links upon request and without undue delay? If not, why?

<u>BTC's comments</u>

BTC is of the view that any amendment to its RAIO to include IP interconnection links should be bounded by considerations of technical, physical and economic feasibility. If BTC found a request for IP/SIP interconnection was not technically feasible, it states it would be fully prepared to explain the basis of this finding to both the access seeker and URCA.

BTC further noted that it has undertaken a process along with Systems Resource Group (SRG) to test the feasibility of IP/SIP interconnection between BTC and SRG's networks.

In BTC's second round response, BTC shared the same views for IP/SIP interconnection as it did for direct connectivity. In particular, BTC reiterated that it was not opposed to including an option for IP/SIP interconnection links in its RAIO, so long as it is able to judge the technical and economic feasibility of requests on a case by case basis.

<u>CBL's comments</u>

CBL agrees that BTC's RAIO should be amended to obligate BTC to provide IP interconnection links upon request without undue delay. CBL noted that the IP interconnection must meet Quality of Service design and deployment best practices (i.e., loss, latency, jitter) and should also adhere to CODEC (i.e., G.711, G.729) and marketization standards. CBL believes BTC should be obligated to provide such IP interconnection links within thirty (30) days of such a request by a Licensed Operator. Any failure by BTC to deliver IP interconnection within the URCA-specified timeframe could result in NewCo failing to meet the roll-out obligations in its licence. CBL therefore requests that URCA introduce remedies, including financial penalties, to address potential non-delivery by BTC. CBL again suggested that if BTC failed implement direct mobile-to-mobile IP interconnection, BTC should forgo the right to charge a transit fee.

In support of its position, CBL states in its second response that BTC has finished deploying its Next Generation Network (NGN) and that IP/SIP interconnection should be a standard feature of an IP-based network with a fully developed IP core. Indeed, CBL considers IP/SIP interconnection to be a mainstream international standard which should be included in BTC's RAIO without delay. Furthermore, CBL quoted BTC's statement from its first consultation response that *"the issue of which switches are interconnection will become more or less irrelevant as the point(s) of physical interconnect increasingly take place at the IP level"* as reaffirming the need for its inclusion in the RAIO.

<u>URCA's response to comments received/Final Decision</u>

In developing its final position, URCA notes the similarity of BTC's response at Section 3.2 above to that which considered the need for direct interconnection to BTC's mobile network. That is, in both cases, BTC focused on the need to ensure that any RAIO service is technically, physically and economically feasible, and on the sufficiency of existing RAIO provisions on requesting new services.

URCA again accepts this broad principle that interconnection services should be bounded by technical, physical and economic feasibility. However, for a RAIO to operate efficiently, there needs to be a core set of services and enabling components which are already assumed to be feasible to offer and hence which an access seeker can request without having to demonstrate the feasibility of the service. URCA now considers that IP/SIP based interconnection falls within this category of service.

URCA reiterates that there are no physical, technical or economic factors that would make it infeasible for BTC to provide IP/SIP based interconnection to NewCo and other fixed networks. As recognised by BTC the use of IP/SIP based interconnection instead of legacy TDM is a growing trend in the communications industry. URCA understands that in many EU countries, incumbent operators are under a general obligation to publish a Reference Interconnection Offer (RIO) for IP-based interconnection. This significantly increases efficiency and transparency and reduces transaction costs.[22] URCA is also not aware of any instances in which IP/SIP based interconnection has been deemed infeasible in the EU or elsewhere.

URCA is also aware that BTC has undertaken a process with CBL affiliate, SRG, to test the feasibility of IP/SIP interconnection and looks forward to the successful conclusion of this exercise in the shortest time possible.

---

[22]See BoR 15(196) "Case Studies on IP-based Interconnection for Voice Services in the European Union" at http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/5579-case-studies-on-ip-based-interconnection-for-voice-services-in-the-european-union

Given that BTC has the capacity to offer IP/SIP based interconnection on some islands (e.g., New Providence and Grand Bahama) it should now make such links available whenever requested and without undue delay. In order to ensure transparency and unnecessary delays, URCA now directs BTC to amend its RAIO to include IP/SIP based interconnection to mobile and other fixed networks. For the avoidance of doubt, URCA is not requiring BTC to discontinue provisioning of TDM/SS7 circuits from its RAIO. Rather, interconnection seeker should have the option of choosing IP-based or TDM/SS7 interconnection. Again, URCA stresses that there are other instances in BTC RAIO where operators have a choice between services (e.g., customer-sited vs In-span interconnection).

Regarding CBL's comment about the IP/SIP based interconnection meeting Quality of Service design and deployment best practices , URCA agrees that there must be established QoS Standards and will address this issue in the Final Determination for Network Quality of Service Regulations. As to the choice of CODEC, URCA considers that interconnection can be achieved using various types of CODEC, which among others include G.711 and G.729. However, URCA recognises that the use of other CODEC, such as Adaptive Multi-Rate (AMR), have been used to optimise mobile to mobile, and mobile to IP Multimedia System (IMS), and reduce operating expenses. Hence, URCA's final position is that the CODEC used for interconnection should be decided by means of negotiations between the respective operators.

In terms of CBL's proposed timelines for BTC to provide IP/SIP based interconnection URCA again refers to its final position in Section 3.5.

URCA responded to CBL's proposals regarding the addition of financial penalties in Section 3.2 above and does not reiterate its position here. URCA also disagrees with CBL's recommendation that the transit fee should be waived in the event that BTC fails to implement IP/SIP interconnection in a specified timeframe. Should BTC fail to implement IP/SIP within the specified timeframe URCA will determine the penalty or remedy for the breach.

URCA's Final Determination – Interconnection via IP/SIP Interconnection Links

It is URCA's final determination that BTC amend its RAIO to include IP/SIP interconnection at one or more points within BTC's fixed and mobile networks.

3.4 SMS/MMS Termination Service

Consultation Question – SMS/MMS Termination Service and related rates

Q4. Do you agree that the BTC RAIO should be amended to include mobile message termination service and associated cost-based charging for the service? If not, why?

BTC's comments

BTC responded that it is not opposed to including in its RAIO cost–based charges for SMS/MMS messaging termination services on BTC's mobile network. However, given the overall decline volumes of messaging services and the complexity of MMS services, BTC proposes only to include a SMS termination rate in its RAIO (i.e., not to include the MMS termination service and associated charge in its RAIO). While BTC recognised that NewCo had expressed an interest in MMS services in its response, BTC would appreciate URCA's direction on the need to include this service in its RAIO prior to undertaking any preparatory work. BTC further referred to Clause 11 of its RAIO which sets out the process for requesting new services.

While BTC indicated that it is currently in the process of gathering the required information, BTC advised that it was not able, at this point, to provide a draft service description for SMS/MMS termination services to be included in its RAIO. Further, BTC contended that determining a cost-based charge for SMS/MMS termination services would be a non-trivial task, as it would require amendments to its existing accounting separation model which does currently not derive unit cost results for these services. As such, BTC advised that it is currently looking into alternative approaches to inform the SMS termination rates, including benchmarking and a retail minus approach. BTC, however, presented, as part of its initial submission SMS termination rates across ECTEL member states and the European Union, averaging 1.40 cents /SMS and 2.60/SMS, respectively. BTC proposed to adopt an interim SMS termination rate of 1.40/SMS. Similar to the termination rates for mobile calls (See Section 4.1 above), this interim rate would then need to be followed by a follow-up consultation by URCA on the proposed long term approach for and level of cost-based SMS termination rates.

CBL's comments

CBL argued that both SMS and MMS termination services should be added to BTC's RAIO as both services represent bottlenecks on BTC's mobile network, in line with those of mobile call termination.

In line with its response to Question 1 above, CBL proposed to set the SMS/MMS termination rate equal to zero until BTC and CBL have completed their bilateral negotiations on the appropriate charging regime and URCA has determined the appropriate cost based charge for these services.

CBL further notes that due to a continued decline in total SMS traffic volumes and the underlying incremental costs of providing SMS termination services, CBL would expect a cost based termination rate for these services to be close to zero (i.e., in line with its proposed interim value). This was due to negligible traffic volumes and declining prices for the dedicated mobile messaging equipment, resulting in near zero network costs for SMS services.

<u>URCA's responses to comments received/Final Decision</u>

URCA notes both operators' support for the inclusion of SMS termination service in BTC's RAIO. It further notes the difference in opinion on the appropriate level of the SMS termination rate and the need for also including MMS termination services in BTC's RAIO.

<u>MMS termination services</u>

While the underlying bottleneck characteristics equally apply across all termination services, including MMS termination services on BTC's mobile network, URCA wishes to ensure the proportionality of any regulatory obligations imposed on SMP licensees.

Based on its assessment to date, URCA does not consider the inclusion of MMS termination services in BTC's RAIO at this point in time to be proportionate. This is due to the following considerations.

- It remains uncertain whether there is a demand for MMS services in The Bahamas, as BTC does not currently offer these services at the retail level and NewCo has indicated to URCA it would offer MMS services either. URCA understands that in other jurisdictions the demand for MMS services is limited, relative to SMS.[23] [24]
- Including MMS termination services in BTC's RAIO requires defining separate termination services and charges for MMS picture and MMS video services.[25] This requires additional time and resources. Given the prevailing uncertainty on the demand for MMS termination services there seems no reason to undergo the required work to develop a MMS termination service description and charges for its RAIO. URCA is further not aware of many jurisdictions in the region or elsewhere that actively regulated MMS termination services.
- As indicated by BTC, in case CBL requires MMS termination services in future, it could request this via Clause 11 of BTC's RAIO.

<u>Interim rates for SMS termination on BTC's mobile network</u>

---

[23] According to a 2013 ACCC report on mobile termination services, the demand for MMS services in Australia represented about 2% of the demand for SMS services. Available at: https://www.accc.gov.au/system/files/Report%20of%20the%20draft%20decision_0.pdf

[24] It is important to note that MMS services differ to smartphone messaging applications (such as WhatsApp). MMS messages are transmitted over a mobile network using capacity set aside for data. While these messages are sent using packet switching technology, they differ from smartphone messaging applications as they are not sent over the Internet.

[25] MMS messages vary in size (in terms of megabytes) because, unlike SMS which are limited to 160 characters of text, MMS messages can be in any multimedia form, including text, pictures, music and video.

As stated in Section 4.1 above, URCA remains of the view that termination rates should be reflective of the efficient (incremental) cost of providing these services. This is in line with the requirements of the Comms Act and the principles set out in the Access and Interconnection Guidelines. However, determining efficient cost oriented wholesale charges is a time and resource intensive exercise which cannot be completed within the given timeframe for this RAIO review.

Based on its review of BTC's latest available separated accounts, URCA agrees with BTC's statement that these are not suitable to inform a SMS termination rate, as this service is currently not specified within the accounts. It further considers the cost information in BTC's separated accounts not suitable to inform a SMS termination rate based on a "retail minus" approach.

Given this, URCA considers it necessary to determine an interim SMS termination rate based on benchmarking. URCA notes that there is less precedent on SMS termination rates than for mobile call termination rates. This is due to not all jurisdictions setting a regulated SMS termination rate, including several within the regional benchmarking set out in Table 3. Table 3 sets out the current SMS termination rates in countries across the region which have developed LRIC-based SMS termination rates and across Europe. This indicates that BTC's proposed interim SMS termination rate of 1.40 cents/SMS would be above the regional average LRIC based SMS termination rate of 1.10 cents/SMS. However, URCA further notes that the regional rates are below the average rate observed across Europe of 2.49 cents/SMS. Given this, URCA considers BTC's proposal represents an appropriate interim SMS termination rate.

Table 3: LRIC based SMS Termination Rates for across the Region and Europe

Country	Implementation Year	Costing Approach	MTR (BAH cents/SMS)
ECTEL member states[26] - average	2009	LRIC+	1.37
French Caribbean	2010	Pure LRIC	1.11
Regional average			*1.24*
European (weighted) average			*2.49*

Based on the above, BTC is required to amend its RAIO to include a SMS termination service. The interim charge for this service will be 1.40 cents/SMS, applicable to all SMS terminating on BTC's network independent of their origination. This interim rate remains in place until URCA has undertaken its comprehensive review of termination rates.

[26]Dominica, Grenada, St Kitts, St Lucia and St Vincent and the Grenadines.

Table 4: Interim Rate for SMS Termination Services on BTC's Mobile Network

Termination service	MTR (BAH cents/SMS)
SMS termination on BTC's mobile network	1.40

URCA's Final Determination – Interim MTR for SMS on BTC's Mobile Network

BTC is required to amend its RAIO to:

Include service specifications/parameters for SMS termination service; and

Include interim charge for SMS termination of 1.40 cents per SMS, applicable to all SMS messages terminating on BTC's cellular mobile network independent of their origination. This will be followed by a comprehensive review of termination rates. This review will seek to determine both the appropriate approach for determining cost based termination rates in the context of the Bahamian communications sector and the required process for implementing these. URCA's preliminary findings will be subject to consultation.

3.5 Other Comments Received

URCA received other comments from BTC and CBL which are relevant to the matters in this consultation, but which were not tied to the specific questions addressed above. URCA summarises these comments and provides responses below.

BTC's other comments

While BTC stated that it appreciated URCA's commitment to providing an environment conducive to competition, it considered URCA had recently published a large number of consultations, with proposed deadlines unrealistic for BTC to meet. Therefore, in its initial submission, BTC recommended that the deadline to provide second round responses to the consultation should be postponed to 10 July 2016 in order to allow the sector an opportunity to thoroughly consider all aspects of the proposed changes and associated ramifications. BTC also suggested that it should be granted ninety (90) days to then submit the amendments to its RAIO, rather than the forty-five (45) days proposed in the consultation paper.

BTC further suggested that URCA should establish a task force consisting of representatives of each party so that each party can understand the expectations of the other. This is because BTC believes that URCA is anticipating the requirements of a two-operator model without being aware of the realistic needs and limitations for an interconnection arrangement between the licensees.

CBL's other comments

Regardless of whether IP/SIP interconnection or a direct point of interconnection to BTC's mobile network is established, CBL maintained in its initial response that BTC should be obligated to provide interconnection to NewCo within thirty (30) days of NewCo submitting an initial request. In its second response, CBL noted that URCA has not yet set any timescales for the negotiation and completion of interconnection agreements between BTC and other operators. However, in this response and in contrast to its final submission, CBL pointed out that URCA's Infrastructure Sharing Regulations require BTC to conclude an Access Agreement within forty-two (42) calendar days and therefore recommended that URCA introduce the same requirement for interconnection agreements to avoid delays.

URCA's responses to comments received/Final Decision

In consideration of BTC's suggestion, the deadline for reply comments on initial responses to the consultation document was extended from June 10, 2016 to June 24, 2016. URCA deems this extension was reasonable and thanks the respondents for their timely submissions.

As regards the number of requests for responses to public consultations and related timelines, URCA notes that these are driven by the statutory framework of the Comms Act and Government's objectives. In the case of the latter, these include the obligation for NewCo to launch service within three (3) months from the date of its licences, and that URCA put in place *"…all regulatory measures necessary for cellular liberalisation, … in accordance with the timetable set for such liberalisation."* In the meantime, URCA continues to review the response timeframes associated with its various consultations on mobile liberalisation and will notify the industry of any revisions thereto.

With respect to the timeframe for preparing and submitting the amended RAIO, URCA finds BTC's ninety (90) day timeframe is unnecessary and excessive. This is because of the limited scope of the required changes to BTC's RAIO and NewCo's obligation to launch services within three (3) months of its licence award (June 30, 2016). Furthermore, the forty-five (days) timeframe proposed in the consultation document was on the assumption that NewCo would launch service within six (6) months from the issuance date of its licences. URCA also notes that under its April 22, 2010 Final Decision – *"Obligations Imposed on Operators with SMP"*[27] BTC was required to submit its draft RAIO to URCA for review on or before May 31, 2010. In spite of the extensive drafting and review required, BTC was still able to meet this deadline. In the circumstances, URCA considers that it is feasible for BTC to prepare and submit copies of the

[27] http://www.urcabahamas.bs/download/013376800.pdf

amended RAIO (in tracked changes) to URCA and NewCo within fourteen (14) calendar days of this determination rather than the forty-five (45) days contemplated in the consultation document.

Lastly, URCA notes the opposing views of the parties in respect of the timelines for negotiating agreements and establishing physical interconnection between BTC's and NewCo's networks. While the timelines specified in ECS 08/2015[28] are still relevant to interconnection generally, for the purpose of NewCo's market entry, URCA now directs:

- BTC to provide physical interconnection (IP/SIP and at least one (1) direct POI to its mobile switch), within thirty (30) calendar days of NewCo's initial request; and

- BTC and NewCo shall conclude a full interconnection agreement within forty-two (42) calendar days following BTC receiving a valid request from NewCo to negotiate an interconnection agreement.

URCA's Final Determination – Timeframes

It is URCA's final determination that:

BTC submit copies of its amended RAIO (in tracked changes) to URCA and NewCo within twenty-one (21) calendar days of this determination

BTC provide physical interconnection (IP/SIP and at least one (1) direct POI to its mobile switch), within thirty (30) calendar days of NewCo's initial request; and

BTC and NewCo shall conclude a full interconnection agreement within forty-two (42) calendar days following BTC receiving a valid request from NewCo to negotiate an interconnection agreement

[28] http://www.urcabahamas.bs/download/067476700.pdf

4 Conclusion and Next Steps

This Final Determination presents the required changes to BTC’s RAIO due to mobile liberalisation. The document builds on the recently concluded Government process to identify the successful bidder for the second cellular mobile licence and is intended to satisfy the requirements of the Government, as set out in the ECS Policy. Furthermore, URCA is also satisfied that the required changes to BTC’s RAIO are consistent with the statutory framework of the Comms Act, relevant licence conditions and with URCA's general powers to safeguard the interests of persons in The Bahamas in relation to electronic communications services.

BTC is required to amend its RAIO as set out at Section 2 above. Upon receipt of BTC’s submission, URCA proposes to consult with interested parties on the proposed amendments to ensure that BTC has satisfactorily implemented all of the changes mandated in this Final Determination. See Section 2 above for timelines for review and final approval of the amendments to BTC RAIO.