



# **Review of Mobile Termination Rate Consultation Document**

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# 1 Background and Purpose

The Telecommunications Commission (the “Commission”) was formed following the enactment of the Telecommunications Ordinance in 2004 (the “Ordinance”), based on the Government’s liberalization agenda pursuant to its Telecommunications Policy published in 2003 (the “Policy”).

With a view to proceeding with its planned liberalization agenda, the Government signed an agreement with Cable & Wireless that resulted, *inter alia*, in the issuance of a new non-exclusive licence to C&W and the subsequent issuance of licences to two new mobile telephone operators, Digicel and Islandcom.

Starting in late 2005, the Government brought into force a series of regulations, including the Interconnection and Access to Telecommunications Facilities Regulations and the Telecommunications (Administrative Procedure) Regulations (respectively, the “Interconnection Regulations” and the “Administrative Regulations”). Together with the Ordinance, these regulations constitute a comprehensive regulatory framework for the telecommunications sector in the Turks and Caicos Islands (“TCI”).

Sections 19(1) and 19(2) of the Interconnection Regulations establish that all mobile carriers are presumed to be dominant with respect to termination on their respective mobile networks and that the mobile termination rate (“MTR”) shall not exceed US \$0.15 per minute.<sup>1</sup>

The C&W and Digicel Interconnection Agreement of June 30, 2006 set the MTR at a level of \$0.19 from June 30, 2006 to December 31, 2007, and at \$0.15 from January 1, 2008 forward. As well, the C&W and Islandcom Interconnection Agreement of March 9, 2007 established an identical MTR schedule. Under these agreements, therefore, the \$0.15 MTR has now been in effect for just over two and half years.

At the time of the issuance of the Interconnection Regulations, in January 2006, the Commission was of the view that, based on its assessment of the regional and international situation, \$0.15 was a reasonable upper limit for the MTR in TCI. However, since that time, significant developments have occurred at the regional and international levels with respect to MTRs. In light of these developments, the Commission is of the preliminary view that a rate of \$0.15 is no longer a reasonable upper limit for the MTR in TCI, and the rate should be decreased.

## 1.1 Consultation

Pursuant to the Interconnection Regulations and the Administrative Regulations, the Commission is initiating the present consultation process to review the continued appropriateness of the current MTR upper limit of \$0.15 and to seek comment on the

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<sup>1</sup> Unless otherwise stated in this document, a) all money amounts are in United States of America (US) dollars and b) all time-based telecommunications prices are expressed on a per minute basis.

Commission's proposal for a 3-step, phased reduction of the MTR in TCI (the "Proposal"), the details of which are set out in Chapter 5.

This Consultation Document identifies the issues to be addressed in reviewing the current MTR upper limit and, as noted, also describes the Proposal to reduce the MTR upper limit over the period 2011 to 2013. The Commission notes that it has engaged the services of Consultants to assist it with the consultation process, the analysis and assessment of the current MTR in TCI, and the design and formulation of the Proposal.

The Commission invites interested parties ("Respondents") to provide their input and comments (the "Responses") with respect to the issues raised in this Consultation Document, including the Proposal and/or any other issues of relevance to the establishment of an appropriate upper limit for the MTR in TCI. As part of the public consultation process, the Commission and/or its Consultants may meet with Respondents that have submitted Responses to review and discuss their Responses in greater detail.

At the conclusion of this consultation process, the Commission will issue a decision either not amending the current MTR arrangements or implementing a new MTR upper limit that could, in the latter case, include the Proposal. In reaching its decision, the Commission shall take Respondents' input and comments into account. The decision would direct the operators to amend their existing or new interconnection agreements and file same for approval with the Commission.

## 1.2 Consultation Process

This Consultation Document, along with all referenced Government and Commission documents, is available on the Commission's website at <http://www.telecommission.tc/>.<sup>2</sup> Respondents who wish to express opinions on this Consultation Document are invited to submit their Responses in writing to the Commission. Responses shall also be submitted in electronic form to facilitate further distribution and posting on the Commission's website.

The Consultation Process is structured in two phases. In the first phase, Respondents may submit Initial Responses to comment on this Consultation Document. In the second phase, Respondents may submit Reply Responses to comment on the Initial Responses of other Respondents in whole or part.

The filing deadlines for Initial Responses and Reply Responses are as follows:

- Initial Responses must be received by the Commission no later than 3:30 p.m. local time on Wednesday **August 25, 2010**.
- Reply Responses must be received by the Commission no later than 3:30 p.m. local time on Friday **September 10, 2010**.

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<sup>2</sup> Note that exceptions in this regard include the C&W Agreement of January 26, 2006 and operator-specific license agreements and inter-carrier interconnection agreements which include confidential information.

## Review of Mobile Termination Rate Consultation Document

Responses filed in relation to this Consultation Document may be submitted to one or more of the following addresses:

- a) E-mail to: [consultations@tcitelecommission.tc](mailto:consultations@tcitelecommission.tc)
- b) Delivery (paper and electronic copy) by hand or by courier to:

Mr. John Williams,  
Director General  
Turks and Caicos Islands Telecommunications Commission  
Business Solutions Complex, Leeward Highway  
Providenciales,  
Turks and Caicos Islands

The Commission welcomes all Responses on the Consultation Document. The Commission invites Respondents to provide responses to the specific numbered questions set out in this Consultation Document (the “Consultation Questions”) and any other issues Respondents consider relevant.

The Commission encourages Respondents to support all Responses with relevant data, analysis, benchmarking studies and information based on the national situation or on the experience of other countries to support their comments. The Commission may give greater weight to Responses supported by appropriate evidence. In providing their comments, Respondents are requested to indicate the number of the Consultation Question(s) to which each comment relates. Respondents are not required to comment on all Consultation Questions. The Commission is under no obligation to adopt the comments of any Respondent.

Copies of all comments submitted by Respondents in relation to this Consultation Document will be published on the Commission’s website at <http://www.telecommission.tc>. With a view to having an open public consultation process as practical, the Commission encourages Respondents to structure their Responses not to include any confidential information.

If necessary, Respondents may submit Responses that include claimed confidential information in the form of two Responses:

- **Redacted Response** - In this document any claimed confidential information would be excluded. The other comments and information, not claimed as confidential, would be included in this version. This is the public version document that would be posted on the Commission website;
- **Confidential Response** – This document would be identical to the Redacted Response. except that this version would also include the claimed confidential information for the use of the Commission. This document would not be posted on the Commission website.

Claims of confidentiality will be determined by the Commission on a case-by-case basis, and in compliance with the requirements set out in Section 19 of the Administrative Regulations.

### 1.3 Overall Timeline

The table below summarizes the timeline for this consultation process and the subsequent decision-making and implementation process.

<b>Event</b>	<b>Date</b>
Commission issues Consultation Document	July 19, 2010
Initial Responses from Respondents	August 25, 2010
Reply Responses from Respondents	September 10, 2010
Commission Decision	October - November, 2010 (estimated)
First day of revised MTR (proposed)	January 1, 2011

## 2 Summary of Legal Framework

This Chapter provides a summary of the relevant legal and regulatory provisions in relation to MTRs in TCI.

### 2.1 The Policy

The Policy includes a number of specific provisions with respect to interconnection. Of significance is the fact that the Policy adopts the regulatory principles set out in the World Trade Organization ("WTO") Reference Paper in relation to interconnection. These principles include ensured interconnection on fair and non-discriminatory terms and conditions, public availability of the procedures for interconnection negotiations, transparency of interconnection arrangements and access to an effective interconnection dispute settlement process.

Further, the Policy also states that

The Government will develop and make available guidelines that should be used in the commercial negotiation of the terms and conditions of interconnection contracts between the entrant and the incumbent PTC [Public Telephone Company].

The Interconnection Regulations, discussed in Section 2.3 below, constitute those guidelines.

### 2.2 The Ordinance

Section 23 of the Ordinance sets out in general terms the type of instructions that the Commission may issue to dominant licensees with respect to interconnection:

23. (1) ... the Commission may issue instructions to the dominant licensee, and without prejudice to that generality may issue instructions to the licensee –
- [...]
- (c) to provide interconnection –
- [...]
- (ii) in a timely fashion on terms and conditions (including technical standards and specifications cost-oriented rates) that are transparent, reasonable, having regard to economic feasibility;
- [...]
- (g) in respect of rates for interconnection;
- [...]
- (2) The terms, conditions and rates referred to in subsection (1) –

- (a) in the case of a licensee's standard interconnection agreement or interconnection offer, shall not be discriminatory and shall be at a quality which is no less favourable than those provided in relation to the dominant licensee's own and an affiliate's services;
- (b) shall be transparent and cost-oriented having regard to economic feasibility; and
- (c) shall provide interconnection in such a manner that the licensee requesting interconnection does not pay for telecommunications network components which it does not require.

Section 24 of the Ordinance sets out the Commission's authority in relation to interconnection disputes:

- 24. (1) The Commission may on its own motion or at the request of an interested party instruct licensees involved in an interconnection dispute to refer the dispute to it.
- (2) The Commission shall take such measures as it deems fit to resolve disputes referred to it under subsection (1) and may issue instructions about the interconnection terms which shall apply.

Section 25 of the Ordinance sets out the cost recovery aspects of interconnection, including in relation to the calling party pays regime applicable for mobile networks:

- 25. (4) For calling party pays calls between networks, the terminating network shall receive a cost-oriented usage based rate based upon costs of the Licensee providing interconnection services.

### 2.3 Interconnection Regulations

Section 4 sets out the main objectives for the Commission to pursue in its administration of interconnection arrangements:

- 4. (1) The Commission shall, consistent with the Ordinance and these Regulations, encourage and, where appropriate, ensure, the adequacy of interconnection between public telecommunications networks and public telecommunications services in such a way as to –
  - (a) promote efficiency;
  - (b) promote sustainable competition;
  - (c) give maximum benefit to end users; and
  - (d) provide that carriers and service providers are compensated for interconnection services.
- (2) The Commission may, to the extent necessary to ensure end-to-end connectivity –  
[...]

- (c) resolve disputes with respect to the establishment of interconnection agreements and disputes regarding the interpretation and implementation of such agreements; and
- (d) act on its own initiative or at the request of either of the parties involved in order to carry out the objectives of the Ordinance and ensure compliance with the Ordinance and these Regulations.

Section 11 deals with disputes regarding interconnection and interconnection agreements:

- 11.** (1) Where one or both of the two parties to the negotiation conclude that a dispute has arisen between themselves with respect to any aspect of interconnection, then, pursuant to section 24 of the Ordinance, either party may request that such dispute be submitted to the Commission, or the Commission may instruct that the parties involved in the dispute refer the dispute to it, for resolution in accordance with the Administrative Procedure Rules or such other procedures as the Commission may adopt specifically for, and given the nature of, the particular dispute.
- (2) A dispute, for purposes of subsection (1), may include, but is not limited to –
- [...]
- (d) a disagreement with respect to the costs of interconnection, whether charges sought to be recovered in an interconnection agreement relate to ongoing costs of inter-operability, within the meaning of section 25(1) of the Ordinance, whether a cost is a non-recurring or recurring cost or a cost that varies with usage, and what constitutes a cost-oriented usage based rate based upon the licensee's costs of providing interconnection, within the meaning of section 25(4) of the Ordinance;
  - (e) a failure by the parties to conclude promptly an interconnection agreement; and
  - (f) a disagreement with respect to the price or any other technical, commercial or other term and condition for any element of interconnection that the parties have not been able to resolve within a commercially reasonable time.

Section 14 provides a framework for the establishment of interconnection charges by dominant operators or service providers, including that dominant operators are required to set interconnection charges that are “cost-oriented”:

- 14.** (3) Every dominant carrier and dominant service provider shall provide interconnection at rates that are cost-oriented and, where expressly authorized by the Commission, that may permit the recovery of the costs of providing access.
- (4) For purposes of these Regulations and for purposes of sections 23 and 24 of the Ordinance, rates are “cost-oriented” if the carrier's or service provider's charges for interconnection do not exceed the stand-alone cost of providing the service and are not lower than the long-run average incremental costs of providing the service, where –
- (a) “stand-alone cost” means the cost of providing a service independently of providing any other service or services; and
  - (b) “long-run average incremental costs” means the costs incurred by providing a service in addition to other service or services already provided.

Sections 15(2) (d) and (e) indicate that the Commission shall determine the methodology to be used in determining “cost-orientation,” including setting out a series of general principles with relation to cost causation and the recovery of non-recurring and usage costs:

15. (d) rates shall permit the recovery of a reasonable rate of return for that carrier or service provider on the capital employed, all attributable operating expenditures, depreciation and a proportionate contribution toward such carrier’s or service provider’s fixed and common costs; and
- (e) the burden of proof that rates are derived from costs shall lie with the carrier or service provider.

Section 19 sets out a number of provisions relating to MTRs. Section 19(1) sets out that all mobile carriers are presumed to be dominant with respect to termination on their respective mobile networks. Section 19(2) establishes that the MTR shall not exceed US \$0.15. Section 19(3) indicates that mobile carriers with more than 33% of market share may be required to provide information, when requested by the Commission, to justify their MTRs. Section 19(4) establishes the right of operators to initiate a dispute if the interconnecting operator is not charging a cost-oriented MTR. And, Section 19(5) establishes the principle that a service provider may establish retail prices based on the costs of the underlying payments to other operators for the corresponding interconnection services.

19. (1) A carrier that is licensed to own and operate a mobile telecommunications network is presumed to be dominant in the market for wholesale mobile voice termination services over such network, except insofar as the Commission, upon demonstration by such carrier, determines otherwise.
- (2) Except as modified by the Commission, a carrier described in subsection (1) may not charge an interconnecting carrier or service provider a rate for terminating voice telephone calls on such carrier’s mobile telecommunications network that exceeds U.S. \$0.15 per minute (adjusted pro rata for units of less than a minute).
- (3) In accordance with section 14, a carrier described in subsection (1) shall submit such information, including with respect to such carrier’s costs, as the Commission may request demonstrating that any rates that such carrier charges for wholesale mobile voice termination services over its own mobile telecommunications network are cost-oriented –
  - (a) if and as such carrier has more than a 33% share of the users in the retail mobile voice services market; and
  - (b) whenever the Commission may otherwise request.

[...]

- (5) Notwithstanding any other requirements of the Ordinance or the Regulations, a service provider may, in establishing rates charged to an end user, take into account the costs of payments made directly or indirectly to other carriers or service providers for interconnection services, including the rates charged by such other carriers or service providers for wholesale mobile voice termination services, and it may vary the rates it charges to an end user to the extent that there are, and in proportion to, differences in the rates that such provider directly or indirectly pays to any carrier described in subsection (1) for interconnection to such carrier’s mobile telecommunications network.

## 2.4 Operator Licences

As indicated in Section 19(1) of the Interconnection Regulations, a carrier that is licensed to own and operate a mobile telecommunications network in TCI is presumed to be dominant in the market for wholesale mobile voice termination services. In other words, C&W, Digicel and Islandcom are all presumed dominant in this respect.

Indeed, in each of these operator's licenses there is an identical provision which states:

The Licensee shall set wholesale termination rates for termination on Licensee's mobile network in accordance with the Interconnection Regulations.<sup>3</sup>

## 2.5 Interconnection Agreements

To date, the Commission has received two interconnection agreements, between C&W and Digicel and between C&W and Islandcom, both of which are discussed below.

### 2.5.1 C&W and Digicel

The C&W and Digicel Interconnection Agreement of June 30, 2006 sets out, among other provisions, a fixed termination charge (for C&W) of US \$0.03 per 60 seconds, and a mobile termination charge (for C&W and Digicel) of:

- US \$0.19 per 60 seconds for the initial 18 month period of June 30, 2006 to December 31, 2007, and
- US \$0.15 per 60 seconds after the initial 18 months, from January 1, 2008 forward.

There are no further provisions for reductions in mobile termination rates after January 1, 2008.

Section 2 of the C&W and Digicel Interconnection Agreement addresses the duration of the Agreement:

- 2.1 This Agreement takes effect on the date it is executed by the Parties, and continues in full force and effect for a period of three (3) years .... At any time within the year prior to the expiration of the then current term, either Party may request that the Parties commence negotiations for an Agreement to replace this Agreement.
- 2.2 The Parties agree that in the event that the period set out in Clause 2.1 expires and the Parties have not concluded an agreement replacing this Agreement, the terms and conditions of this Agreement shall continue in full force and effect until such time as a replacement agreement is negotiated and approved, provided however that, neither Party shall be obliged to continue to provide service if no agreement is reached and approved within six months of the conclusion of the term referenced in Clause 2.1.

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<sup>3</sup> Section 16 of C&W's license and Section 18 of both Digicel's and Islandcom's licences.

As specified, the agreement was due to expire in June 30, 2009. It is the Commission's understanding that the agreement has been extended an additional year – i.e., to June 2010. Therefore, the agreement has now effectively expired and therefore seemingly now falls under the 6-month negotiation extension period provision referred to in Clause 2.2 above.

### **2.5.2 C&W and Islandcom**

The provisions of the March 9, 2007 C&W and Islandcom Interconnection Agreement with regard to MTRs and fixed termination charges are the same as those set out in the C&W and Digicel Interconnection Agreement. In addition, Section 2 of the C&W and Islandcom Interconnection Agreement regarding duration is also the same as the C&W and Digicel Interconnection Agreement; however, in the case of C&W and Islandcom, the term of the agreement is 5 rather than 3 years. Thus, it is due to expire in March 2012.

## **2.6 Discussion and Questions**

In the Commission's view, the Policy, Ordinance and Interconnection Regulations jointly provide it with the authority to regulate interconnection terms, conditions and rates, including MTRs, either through the Commission's own motion or in the context of an interconnection dispute.

The Commission is aware that negotiations have been taking place between C&W and Digicel with a view to renewing their interconnection agreement. As noted, the Commission understands that the existing agreement was extended an additional year; however, even with this extension, the agreement has now apparently expired. The agreement to extend the interconnection agreement, however, was never filed with the Commission.

The extension of the C&W and Digicel Interconnection Agreement to July 1, 2010 presumably leaves the interconnection agreement subject to the 6-month negotiation extension period stipulated in Section 2 of the C&W and Digicel Interconnection Agreement. Thus, while no formal dispute has been filed with the Commission, the parties do not appear to be close to reaching a new agreement “within a commercially reasonable time.” Nor does there appear to be a formal dispute forthcoming from either Digicel or C&W.

The C&W and Islandcom Interconnection Agreement, on the other hand, remains in effect until March 2012.

Regardless of the status of existing interconnection agreements, the Commission is of the preliminary view that, in light of MTR levels and trends in other Caribbean jurisdictions and in European Union countries, which are discussed in Chapter 4 and Annex B, the current MTR upper limit of \$0.15 should be reduced. The Commission would normally expect parties to reach negotiated interconnection agreements of their own accord; however, even if an agreement were reached, the Commission would have to ensure that the resulting negotiated MTRs were set in a manner that would be fully consistent with the Policy, Ordinance and Interconnection Regulations.

As a result, given that it does not seem likely that a new interconnection agreement between C&W and Digicel will be submitted for Commission review and approval and that neither party appears to be likely to file an interconnection dispute with the Commission in the near term, the Commission considers that it must now act on its own motion to review and revise the current upper limit on the MTR in TCI.

Were there reason to question the Commission's authority to act on its own motion to review and modify the MTR, the Commission notes that it could in the alternative recommend to the Minister, with supporting rationale, that Section 19 of the Interconnection Regulations be amended to establish a new upper limit or phased-in maxima for the MTR.

**Question #1:** Please comment on whether the Commission has the authority to establish the maximum allowable level of the MTR that can be charged by licensed mobile operators in TCI on its own motion, without having received an interconnection dispute resolution request.

### 3 Regulatory Analysis of MTRs

This Chapter provides a discussion of the regulatory and economic considerations and analysis that the Commission took into account in preparing the Proposal included in Chapter 5.

At the outset, the Commission notes that pursuant to the Section 4 of the Interconnection Regulations, the Commission has been directed to encourage and, where appropriate, ensure the adequacy of interconnection between public telecommunications networks and public telecommunications services in such a way as

- (a) to promote efficiency;
- (b) to promote sustainable competition;
- (c) to give maximum benefit to end users; and
- (d) to provide that carriers and service providers are compensated for interconnection services.

Each of these four principles and objectives is considered in the following sections, along with alternative approaches to setting MTRs and other related matters.

#### 3.1 Efficiency Considerations

There are several aspects associated with the concept of economic efficiency – these include allocative, technical and dynamic efficiencies. The first of these three – allocative efficiency – is most relevant to the case at hand. Allocative efficiency is maximized when the rate for a product or service is equal to its underlying economic cost (i.e., marginal or incremental cost). Society's consumption of the product or service is optimized when the product or service's price properly reflects its cost of production.

Significant deviations between price and cost, on the other hand, can distort consumer demand by artificially reducing consumption where prices are set above cost, or by artificially stimulating consumption where prices are set below cost. In either case, society's resources would be used inefficiently. National Regulatory Authorities ("NRAs") have long been concerned with the effects of price/cost deviations and have generally sought to rebalance prices where necessary to ensure they are more reflective of underlying costs.

The Policy, Ordinance and Interconnection Regulations indicate that interconnection rates should be "cost-oriented." Section 14 of the Interconnection Regulations places bounds on what would be considered a cost-oriented rate – i.e., with the lower bound being equal to long-run average incremental cost and the upper bound being equal to the stand-alone service cost.

As discussed above, economic efficiency requires that prices be set equal or at least as close to marginal or incremental cost as possible. Thus, to promote economic efficiency, as required under the Interconnection Regulations, the MTR should be reflective of the incremental cost of

providing mobile termination services. Indeed, as discussed in Annex A, this is the approach adopted by many other NRAs when considering setting interconnection rates on a cost-oriented basis.

On the other hand, the contemplated upper bound for the MTR, based on stand-alone cost, is ill-defined. There is no practical or meaningful way of estimating the stand-alone cost of mobile termination service. More importantly, there is no established regulatory practice of setting rates for any interconnection services on the basis of stand-alone costs as far as the Commission is aware. Additionally, even if stand-alone costs could be estimated in the case of mobile call termination, to the extent that such costs significantly exceeded marginal or incremental costs, adopting such a costing approach for setting MTRs would not be consistent with the principle of promoting economic efficiency.

Therefore, it is the Commission's preliminary view that for the purpose of setting the upper limit on the MTR in TCI, a "cost-oriented" MTR should be interpreted as a rate that reflects the underlying marginal or incremental cost incurred by an efficient mobile operator.

**Question #2:** With the objective of promoting efficiency in mind, please comment on whether the MTR should be set a level that is reflective of the marginal or incremental cost of mobile call termination. If not, explain what alternative cost basis should be considered, with supporting rationale.

### **3.2 Competition Considerations**

Call termination to a customer of a specific fixed or mobile operator's network can only be provided by that customer's network operator. In this respect, each operator has an effective monopoly on call termination services to its customers and, therefore, is dominant with respect to the provision of call termination services. This potentially allows an operator to charge call termination rates that are above cost – i.e., at levels that are not cost-oriented.

In view of the market conditions that are specific to call termination services, these services are typically subject to regulatory oversight in most, if not all, jurisdictions, as is the case in TCI. In the Commission's view, ensuring that MTRs are cost-oriented – as defined in the previous subsection – will not only promote efficiency, but will also help promote sustainable competition by preventing the potential exercise of market power in the provision of call termination services. It should also promote and facilitate entry of new operators.

**Question #3:** With the objective of promoting sustainable competition in mind, please comment on whether the MTR should be set a level that is reflective of the marginal or incremental cost of mobile call termination. If not, explain why not, with supporting rationale.

## 3.3 End-User Benefits

### 3.3.1 Potential Benefits of Reduced MTRs

Reducing MTRs over time to more efficient, cost-based levels should, in principle, provide a number of benefits to consumers or end-users.

First, reductions in the MTR would reduce the off-net call termination costs to originating operators and therefore should allow for a reduction in average retail prices or, more specifically, average retail prices for off-net calling. The Commission is aware that there is debate as to whether the savings associated with lower call termination costs will in fact be passed on to end users, since an operator's cost savings are offset to one degree or another by reduced revenues from the call termination services provided on its own network. Thus, the net benefit to end users could be limited or, at the extreme, nonexistent.<sup>4</sup>

Results for the Caribbean, however, which are discussed in the next sub-section and described in detail in Annex C, indicate that mobile-to-mobile off-net retail calling prices are in fact lower in jurisdictions with lower MTRs. This evidence suggests that mobile end-users in the Caribbean have benefited from reduced MTRs, in the form of lower off-net calling prices.

Further, reductions in the MTR should also benefit fixed line subscribers to the extent that retail fixed-to-mobile calling prices were reduced as a result of MTR reductions. Evidence presented in Annex C confirms that fixed-to-mobile retail calling prices are in fact also lower in Caribbean jurisdictions with lower MTRs. In fact, in TCI's case, the existing price cap regime applicable to C&W's fixed line services specifically requires that any reduction in the MTR be reflected in reductions to C&W's fixed-to-mobile calling rates.<sup>5</sup>

Second, to the extent reductions in MTRs translate into lower average retail prices, increased take-up in fixed and mobile wireless services should be expected. Measures that help reduce average mobile calling prices should also help boost mobile penetration in TCI.

Third, again to the extent reductions in MTRs translate into lower average retail calling prices, increased usage of mobile and fixed services by end users should also be expected. If reduced MTRs result in lower mobile-to-mobile retail off-net calling prices, for instance, then increased off-net call volumes would be expected.<sup>6</sup> The reduction in off-net retail prices would result in a

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<sup>4</sup> This effect is referred to in the regulatory economics literature as the "waterbed effect." According to this theory, higher than otherwise prices for mobile call termination allow an operator to maintain other service prices lower than otherwise. If MTRs are reduced, then other prices may increase as a direct result. This is the so-called waterbed effect. The empirical literature which has attempted to confirm the existence and measure the magnitude of this effect, however, is mixed and inconclusive. Indeed, if anything, it appears to suggest that, to the extent it does exist, it is only partial in nature. See, for instance, C. Genakos and T. Valletti, "Mobile regulation and the 'waterbed effect,'" 4 January 2010, Vox (Research-based policy analysis and commentary from leading economists), <http://www.voxeu.org/index.php?q=node/4448>.

<sup>5</sup> Turks and Caicos Islands Telecommunications Commission, Telecommunications Decision 2009 – 4, *Decision on the Second Price Cap Regime*, February 18, 2009, paragraph 80 and footnote 15.

<sup>6</sup> It should also be noted that from the operator's perspective, increased calling would also serve to offset revenue reductions resulting from reductions in the MTR.

decrease in the off-net / on-net differential discussed in Annex C, thus promoting inter-mobile-operator (intra-modal) competition and fixed-mobile competition (inter-modal) competition.

The Commission notes that Ofcom, the NRA for the United Kingdom, recently issued a consultation process to review the level of MTRs in that country. With regards to the benefits of reduced MTRs, Ofcom concluded, among other things, that:<sup>7</sup>

- We expect that, ... reduction in MTRs ... will reduce call prices and promote competition, furthering the interests of consumers.
- Our proposals continue a long term trend during which time MTRs have fallen from more than 23 ppm in 1995 to less than 5 ppm today ... During that time mobile penetration has increased enormously, prices have fallen considerably and MCPs [Mobile Communications Providers] have invested heavily in delivering new services, such as mobile broadband.
- As with previous MTR charge controls, the mobile industry will continue to face steady and sustained reductions in MTRs. We anticipate that the market will be capable of adapting to these changes, which will be implemented over four years and which are broadly in line with previous trends. As the market adapts, we believe that further reductions in termination rates will promote competition, the development of innovative tariff packages and the growth of genuinely converged fixed and mobile services.

Ofcom's conclusions support the Commission's preliminary view that competition would be promoted and end users would benefit from a reduction in the MTR in TCI to more efficient, cost-based levels.

### 3.3.2 Relevant Experience in the Caribbean

As noted above, there is also empirical support for the view that end-users in TCI would benefit from lower MTRs.

As outlined in Annex A and B, MTR levels and trends have been collected for 13 Caribbean jurisdictions: Anguilla, Barbados, British Virgin Islands, Cayman Islands, Dominican Republic, ECTEL Member States (Dominica, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines), French West Indies (Guadeloupe and Martinique) and Trinidad & Tobago.

In addition, information was also collected for average postpaid and prepaid mobile-to-mobile on-net and off-net retail calling prices and fixed-to-fixed and fixed-to-mobile calling prices in each of these same jurisdictions and in TCI. The details of the collected retail calling price information are provided in Annex C.

An analysis of the relationship between MTRs and average retail calling prices in TCI and the 13 selected Caribbean jurisdictions is also provided in Annex C. The results of the analysis indicate the following:

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<sup>7</sup> Ofcom, *Wholesale mobile voice call termination, Market Review* (Volume 1 – Executive summary). Published April 1, 2010, paragraphs 1.11 to 1.13.

### Mobile-to-Mobile

- a) Off-net Postpaid calling prices are correlated with the level of the MTR – i.e., off-net call prices tend to be lower when the underlying MTR is lower. While the statistical relation is not strong, it nevertheless suggests that end users benefit from lower MTRs.
- b) On the other hand, on-net Postpaid calling prices are not correlated with the level of the MTR – i.e., on-net call rates do not appear to be influenced by the level of the underlying MTR.
- c) The ratio of off-net to on-net Postpaid pricing is higher in countries with higher MTRs. This result is consistent with the expectation that allocative efficiency is negatively affected and intra-modal (mobile-mobile) competition hindered by higher MTRs.

### Fixed-to-Mobile

- d) Fixed-to-mobile off-net per minute call prices are correlated with the level of the MTR – i.e., fixed off-net call prices to mobile tend to be lower when the underlying MTR is lower.
- e) The ratio of off-net fixed-to-mobile to on-net fixed-to-fixed pricing is higher in countries with higher MTRs. This result is consistent with the expectation that allocative efficiency is negatively affected and inter-modal (fixed-mobile) competition hindered by higher MTRs.

Thus, in sum, experience in the Caribbean suggests that:

- Mobile subscribers in TCI would benefit from a reduction in the MTR, especially with respect to mobile-to-mobile Postpaid off-net calling prices.
- Fixed subscribers in TCI would benefit from a reduction in the MTR with respect to fixed-to-mobile calling prices.

**Question #4:** Please comment on whether the impact of reducing the MTR in TCI is likely to have a positive, negative or neutral effect on mobile and fixed end-users. To the extent possible, provide any supporting empirical available to support the views expressed in this respect.

## 3.4 Methodologies for Setting MTRs

As discussed, while one of the Commission's objectives is to ensure that interconnection rates are set at efficient, cost-based levels, it also has the objective of ensuring that operators are compensated for interconnection services. There are a number of ways these objectives can be accomplished, including commercial negotiation, costing and benchmarking approaches. Each is discussed below, along with their respective advantages and disadvantages.

### 3.4.1 Commercial Negotiation

One approach to establishing the terms, conditions and rates for interconnection, including the MTR, is to simply allow operators to negotiate all aspects of the agreements, including the MTR – in other words, a pure market-based approach. However, as discussed above, given the nature of the markets for call termination services (i.e., effective monopoly markets for each network operator's customer base), there is no guarantee that rates agreed to through a commercial negotiation process would necessarily yield an efficient, cost-based MTR.

Indeed, as discussed in Section 2.6 above, C&W and Digicel appear to have made little progress in establishing a new interconnection agreement; nor, to the Commission's knowledge, have they shown any interest in reducing the MTR significantly, if at all. As a result, an unnecessarily high MTR has remained in place for some time now. Absent regulatory intervention, the existing MTR could easily remain in place indefinitely.

Thus, at this time, the Commission does not consider an approach based on commercial negotiations to be feasible or effective in achieving the objectives of the Policy, Ordinance and Interconnection Regulations.

### 3.4.2 Costing Approaches

An alternative approach would be to conduct a costing exercise to estimate the cost of providing mobile call termination services and then establish a MTR based on the results of such an exercise. There are a variety of costing approaches that could potentially be used in this respect.

First, a Fully Distributed Cost ("FDC") model approach could be developed and used to set the MTR. Following a FDC costing approach, an operator's total accounting costs are separated by service. While some costs can be readily attributed to individual services, others must be allocated across one or more services, which makes the results of any FDC costing model subjective to one degree or another.

FDC models can be useful for detecting or measuring cross-subsidies between services, but they are less useful for setting prices because the resulting service-specific prices would be based on fully allocated accounting costs (including a share of common costs), not forward-looking incremental costs. Moreover, developing a FDC model is a complex, expensive and time-consuming task, not only for the operator undertaking the exercise, but also for the NRA, which would be required to vet and ultimately approve the results of the model.

Second, an alternative approach would be to rely on a Long Run Incremental Cost ("LRIC") or a Long Run Average Incremental Costs ("LRAIC") approach to set the MTR. Under these approaches, the forward-looking incremental cost of an additional unit or increment of output is measured or, alternatively, the incremental cost of providing a new or total existing service could be measured.

There are numerous LRIC or LRAIC costing approaches that can be used to set MTRs. For instance, consistent with the recent European Commission's ("EC") recommended approach to

the setting of MTRs,<sup>8</sup> Ofcom has recently considered the use of two different LRIC approaches: “LRIC+” and “Pure LRIC”.<sup>9</sup> LRIC+ calculates the cost of providing mobile call termination by considering the costs of an increment of output (often taken to be the total traffic terminated by the operator), irrespective of where it was generated. LRIC+ also includes a mark-up for any common costs. LRAIC could be considered as a variant of LRIC+. Pure LRIC, on the other hand, calculates the cost that could be avoided by the operator by no longer providing termination services to third parties. LRIC+ would tend to lead to higher MTRs than Pure LRIC would because in LRIC+ the increment would tend to include the entire service (of which termination would be one of a number of components), while Pure LRIC measures the avoided costs of the termination service (including no other service components). Further, LRIC+ allows for common cost recovery, whereas pure LRIC does not. The Pure LRIC approach is recommended by the EC.

While a LRIC or a LRAIC based approach to setting the MTR would, in principle, be superior to an FDC approach, there is no established practice for LRIC or LRAIC costing in TCI at this time. As in the case of FDC costing, developing and approving a LRIC or LRAIC model for TCI would be complex, expensive and time consuming for operators and the Commission.

Consequently, the Commission does not consider the development of either a FDC or a LRIC / LRAIC cost model to be a practical or feasible approach for setting the MTR in TCI at this time. The cost and effort required would not be proportionate to the purpose at hand.

Lastly, the notion of stand-alone cost is referred to as an upper limit for a "cost-oriented" interconnection rate in Section 14 of the Interconnection Regulations. However, as noted in Section 3.4 above, such a cost measure is not commonly, if ever, used by NRAs as a method for setting retail or wholesale rates.

### 3.4.3 Benchmarking Approach

A third option is to rely on a benchmarking approach for setting the MTR in TCI. Under this approach, MTR levels and trends in the Caribbean region and/or other jurisdictions could be used to assess the appropriateness of the MTR in TCI and to provide a basis for revising the MTR in TCI.

More specifically, the average level of MTRs in other jurisdictions, especially those observed in other Caribbean jurisdictions (given that they are closely comparable to TCI), could be used to gauge whether the current MTR in TCI continues to be efficient and effectively cost-based.

Moreover, MTR levels in comparable "best practice" jurisdictions – i.e., those with the lowest MTRs – can be expected to be most closely reflective of an efficient operator's underlying costs. Such an approach follows the regulatory practice, first established by the EC, of establishing benchmarks based on an average of “best practice” jurisdictions, that is to say the jurisdictions

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<sup>8</sup> European Commission Recommendation of May 7, 2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU.

<sup>9</sup> Ofcom, *Wholesale mobile voice call termination, Market Review* (Volume 2 – Main consultation), published April 1, 2010, Annex 12.

with the lowest MTRs – rather than on an average of the entire sample. Best practice MTR averages, therefore, could be also be used to establish current as well as short- to medium-term target MTRs for TCI.

While a benchmarking approach does not provide a direct measure of underlying mobile call termination costs specific to TCI, it can nonetheless provide a means to set MTRs in line with established rates charged in comparable jurisdictions, which are likely to be close to underlying costs especially when relying on "best practice" comparable jurisdictions. An added benefit of this approach is that it is far less onerous to implement compared to the costing approaches discussed above.

The Commission is of the preliminary view, therefore, that given the size of the TCI market, it would not be practical, cost effective or proportionate to the purpose at hand for the Commission to initiate an FDC or LRIC / LRAIC based costing approach for establishing MTRs. Instead, the Commission is of the preliminary view that it would be more practical and cost-effective to rely on a benchmarking approach to set the MTR in TCI and that a comprehensive and detailed benchmarking approach would provide a valid basis for setting an efficient, cost-based MTR.

**Question #5:** Please comment on the Commission's preliminary view that the most cost-effective, timely and proportionate approach to set the MTR is a detailed and comprehensive benchmarking study, rather than FDC or LRIC/LRAIC-based costing approaches. If parties consider that a benchmarking approach is not appropriate for setting the MTR, please describe their preferred alternative approach, with supporting rationale.

### **3.5 Symmetry**

In TCI, there are currently three licensed mobile operators serving the market. C&W and Digicel have been operational for some time and have approximately comparable numbers of subscribers. Islandcom is currently in the initial stages of launching its mobile services. All three mobile operators are using similar wireless technologies and also generally operate on a national basis in TCI. Given that Islandcom is new to the market, it likely does not currently enjoy the same degree of scale economies as C&W and Digicel. Nevertheless, the provision of mobile call termination service is effectively a homogenous service that must be provided by all three operators. In a competitive market, the price of such a service would be expected to gravitate to a uniform cost-based level. Existing competitors and new entrants would normally be expected to charge a similar price.

Thus, it is the Commission's preliminary view that an MTR set on the basis of a benchmarking analysis, as described above, would represent an efficient, cost-based price which should in turn apply uniformly or symmetrically to all three mobile operators in TCI.

The Commission also notes that all three operators already charge a uniform MTR of \$0.15; thus, this approach would be consistent with existing pricing practices for call termination services.

**Question #6:** Please comment on whether the upper limit on the MTR should be set on a uniform or symmetric basis for all mobile operators. If not, explain why not, and also describe and justify the basis for differentiating rates among mobile network operators.

### 3.6 Glide Path

In many foreign jurisdictions, including within the Caribbean region (as documented in Annex A), NRAs have in many instances adopted transitional arrangements or "glide paths" when reducing MTRs. In this manner, MTR reductions have generally been phased in over multi-year time periods, at least in cases where significant MTR reductions have been implemented. The glide path approach minimizes any potential market disruptions that could arise from significant changes in the MTR. As set out in Annex A, however, a number of NRAs in the Caribbean have not implemented or have rejected glide paths, arguing that they only serve to delay the benefits associated with lower MTRs, including increased competition.

As described in Section 5 below, the Proposal includes a three-year transition or glide path plan in order to allow the proposed changes in the MTR to be phased-in gradually over a reasonable period of time. This aspect of the Proposal results, in part, from the fact that many of the benchmarked MTRs drawn from other Caribbean jurisdictions are currently subject to ongoing transitional arrangements. Thus, it is to be expected that the benchmarking approach to setting MTRs would yield a similar pattern of MTR reductions over time.

**Question #7:** Please comment on whether reductions in the MTR in TCI should be implemented on a flash cut basis or phased-in over the course of a multi-year period. Please describe and justify any alternative glide path or transitional arrangements that Respondents may consider appropriate to the case at hand.

## 4 Caribbean and European Trends in MTRs

This Chapter provides a summary of recent MTR levels and trends in the Caribbean region and in the European Union, focussing on the period from January 2008 forward. Details of the jurisdiction selection process, methodology used and sources relied on for all Caribbean region MTR data discussed in this section are provided in Annexes A and B.

### 4.1 MTR Levels and Trends in the Caribbean

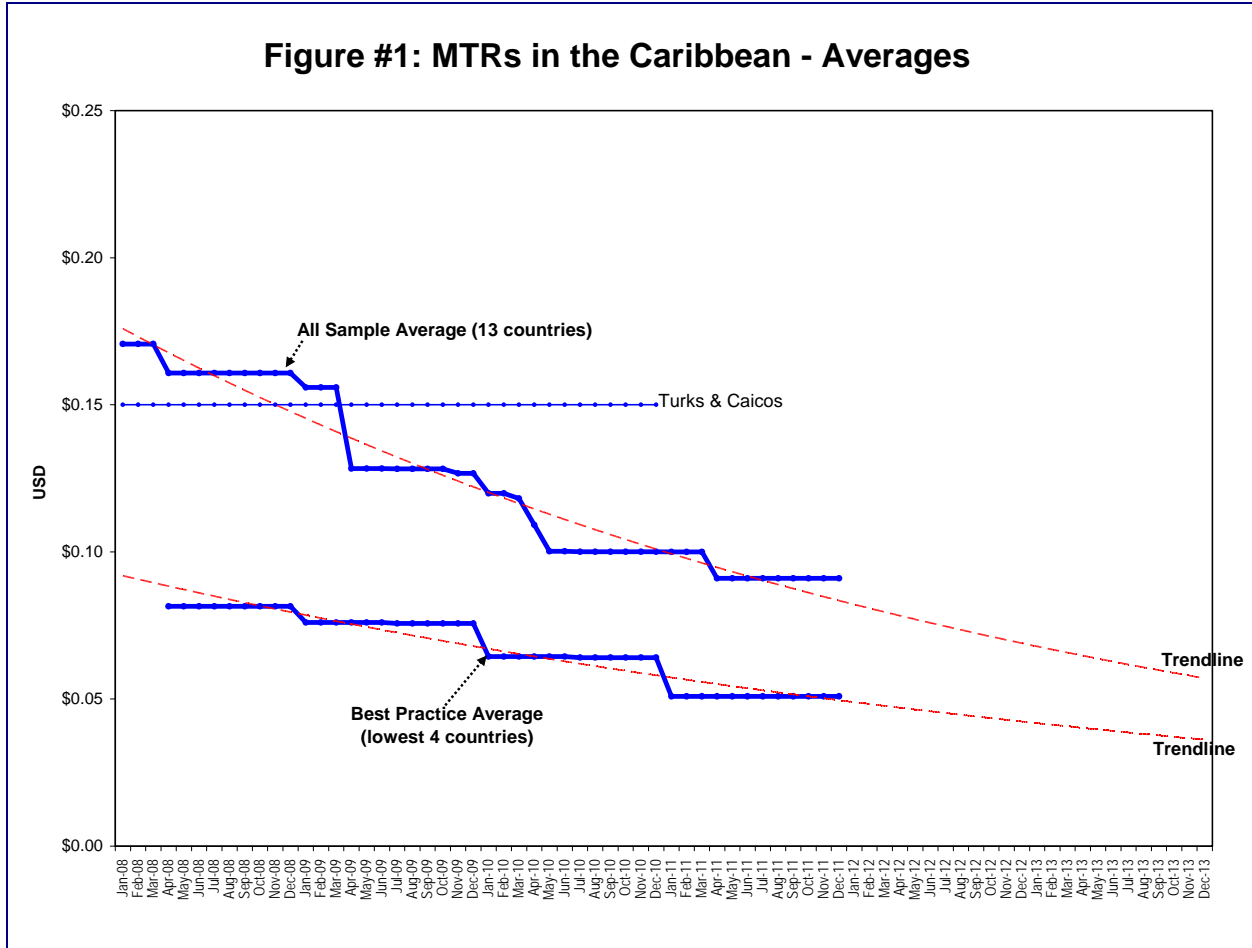
MTR levels and trends have been collected for 13 Caribbean jurisdictions: Anguilla, Barbados, British Virgin Islands, Cayman Islands, Dominican Republic, ECTEL Member States (Dominica, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines), French West Indies (Guadeloupe and Martinique) and Trinidad & Tobago (together, the “13 Caribbean Jurisdictions”). The collected MTR data includes current and recent historical MTRs (starting in January 2008) and, where available, projected MTRs based on glide paths or other transitional arrangements stipulated by each NRA through to December 2011. In cases where no future glide path or transitional arrangements apply, it is assumed that the MTRs in effect as of June 2010 will hold at least until December 2011. Jurisdiction-specific MTR levels and trends are discussed in Annex A.

Figure 1 below summarizes the average MTR levels and trends for all 13 jurisdictions included in the study as well as the four "best practice" jurisdictions (i.e., the four sampled jurisdictions with the lowest MTRs), covering the period to January 2008 to December 2011. Note that fitted trendlines are also included in Figure 1 covering the period January 2008 to December 2013. Each of the variables shown in the Figure is calculated as follows:

- The "**All Sample Average (13 countries)**" is calculated as the unweighted average of the MTRs in the 13 Caribbean Jurisdictions, including projected MTRs to December 2011 that are based on NRA-established glide paths or other transitional arrangements.
- The "**Best Practice Average (4 lowest countries)**" is calculated as the unweighted average of the four lowest MTRs for any particular month. The Best Practice Average includes projected MTRs to December 2011, again based on applicable NRA-established glide paths and other transition arrangements.
- The **trendlines** for each of the two time series above are based on the best fit regression for each time series, with the regression results extrapolated to December 2013.

Figure 1 shows that the average MTR for the 13 Caribbean Jurisdictions has fallen from about \$0.17 in January 2008 to about \$0.10 as of June 2010 (a decline of over 40%).

Based on applicable NRA-established glide paths and other transition arrangements, the All Sample Average is expected to decline to \$0.0932 for 2011. Trend line projections suggest that the average MTR for the 13 Caribbean Jurisdictions will likely further decrease to \$0.0622 by 2013.



In the case of the Best Practice Jurisdictions with the lowest MTRs, the average MTR has fallen from roughly US \$0.08 in 2008 to about US \$0.064 between April 2008 and June 2010 (a decline of 20%). The average MTR for the Best Practice Jurisdictions is expected to fall further still to \$0.0509 for 2011. Trend line projections suggest that the average MTR for the Best Practice Jurisdictions will likely further decrease to \$0.0390 by 2013.

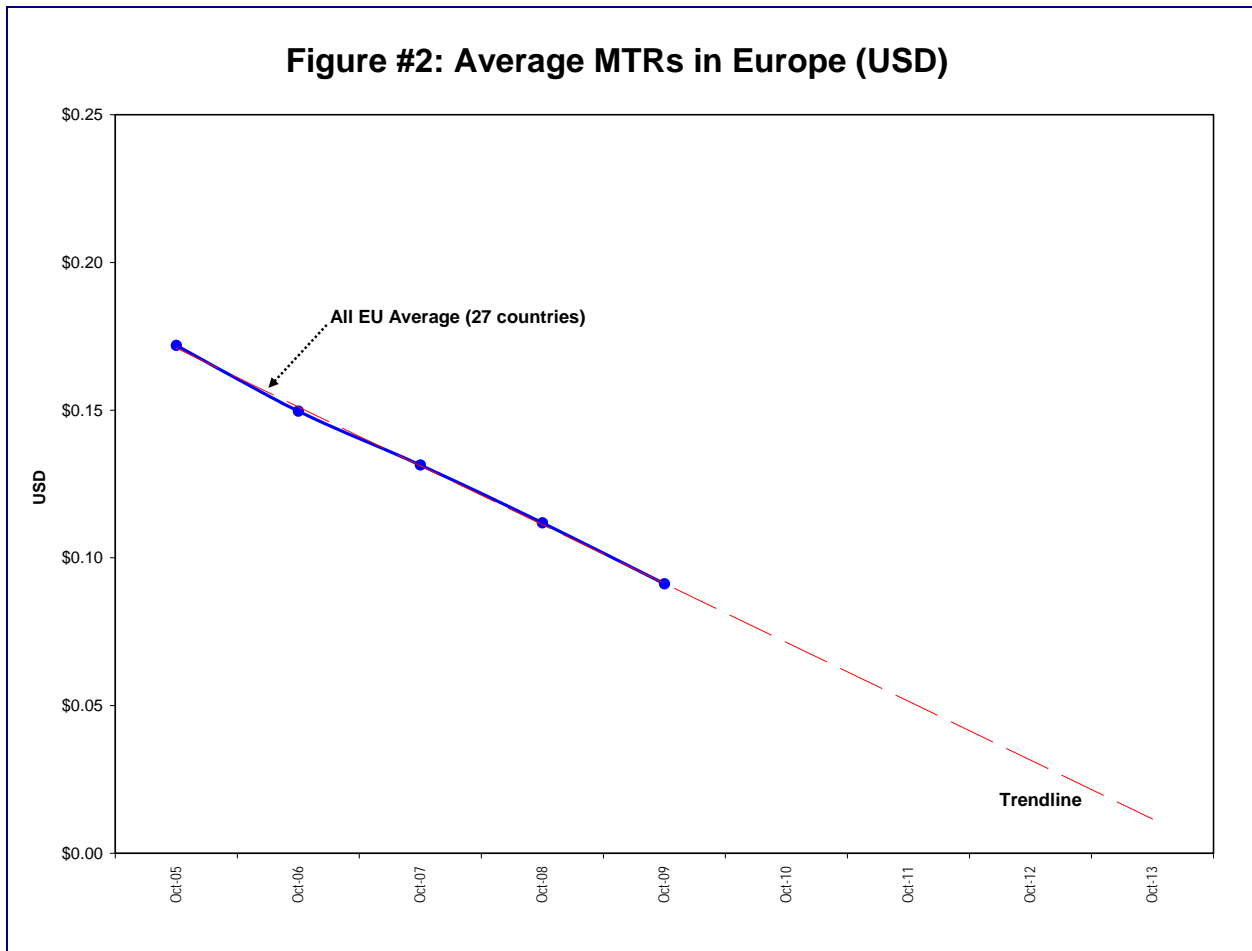
Figure 1 also shows that while TCI's MTR of US \$0.15 was slightly below the All Sample Average until April of 2009, since that time the TCI has increasingly been out of step with the 13 Caribbean Jurisdictions, given the current static nature of the MTR in TCI. As a result, as of mid-2010, TCI has become the country with the highest MTR among the 13 Caribbean Jurisdictions. As of June 2010, TCI's MTR is about 50% higher than the All Sample Average and almost three times higher than the Best Practice Jurisdiction average MTR.

Without any reductions in MTR in TCI, the gap between the MTR in TCI and the rest of the Caribbean can be expected to grow significantly.

## 4.2 MTR levels and Trends in European Union Countries

The observed reductions in MTRs in the Caribbean region are consistent with the reductions in MTRs in other regions.

Figure 2 below provides the average MTR for all 27 countries of the EU from October 2005 to October 2009.<sup>10</sup> Over that period the average MTR in the EU fell from roughly \$0.17 to \$0.09 a reduction of close to 50%. A trend line projection of the EU MTR suggests that the average EU MTR may further decline to below US \$0.05 by 2013, a level consistent with the projections for the Caribbean noted above.



## 4.3 Discussion and Questions

In the Commission's view, observed MTR levels and trends in other Caribbean jurisdictions, as well as in the EU, strongly suggest that the current MTR in TCI of US \$0.15 is significantly out of line with underlying costs and should be reduced.

<sup>10</sup> Commission Staff Working Document: Progress Report on the Single European Electronic Communications Market (15<sup>th</sup> Report), Volume 1 (May 25, 2010)

While the observed MTR levels and trends in other jurisdictions do not provide direct evidence of the underlying cost of mobile call termination in TCI, they nevertheless suggest that an efficient, cost-based MTR should fall at least below \$0.10 and, in the medium-term, a rate in the order of \$0.05 would appear to be appropriate.

The Commission notes that that MTRs of \$0.050 to \$0.075 are or will soon be in effect in several Caribbean jurisdictions (including the British Virgin Islands, Trinidad & Tobago, the Dominican Republic, Martinique and Guadeloupe). Thus, MTRs in the order of \$0.05 appear to be reflective of efficient, cost-based rates in a wide range of jurisdictions, including those directly comparable to TCI.

**Question #8:** Please comment on whether the observed levels and downward trends in average or best practice MTRs in the Caribbean are generally indicative of the underlying costs of terminating mobile calls by mobile network operators in TCI. If not, explain why not. In responding to this question, please provide any additional benchmarking information that may be available that is of relevance to this Consultation (fully explaining all data sources, assumptions and calculations).

## 5 MTR Proposal

This Chapter sets out the Proposal.

### 5.1 Basis for Proposal

The evidence on MTR levels and trends in the Caribbean jurisdictions and the EU countries discussed in the previous Chapter suggests that the current upper limit of \$0.15 for the MTR in TCI should be reduced as soon as possible. The current MTR of \$0.15 can no longer be viewed as efficient or cost-based in view of the fact that it is about 50% higher than current average MTR currently observed in the 13 Caribbean Jurisdictions (about \$0.10). Similarly, average MTRs in all 27 EU countries are even lower still (about \$0.09).

Table 1 below provides a summary of the current and projected All Sample Average and Best Practice Average benchmark MTRs discussed in the previous Chapter and described in more detail in Annex B. The Commission notes that it took a conservative approach in calculating the annual averages for 2011 shown in Table 1. As noted in Annex A, the NRAs of a number of countries<sup>11</sup> that have not otherwise included glide paths for 2011 have indicated that they shall review MTRs in the immediate term.<sup>12</sup> Such reviews will result in MTR averages for 2011 (and beyond) below those calculated in Table 1.

	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>All Sample Average</b>	\$0.1057	\$0.0932	\$0.0752	\$0.0622
<b>Best Practice Average</b>	\$0.0642	\$0.0509	\$0.0456	\$0.0390

Based on these benchmarking results, the Commission's preliminary view is that, as a starting point, the 2011 All Sample Average MTR of \$0.0932 should be used as an upper bound for the immediate term benchmark or target MTR for TCI for 2011.

The evidence for the 13 Caribbean Jurisdictions and 27 EU countries discussed in the previous section further suggests that a medium-term benchmark or target rate for TCI could be set as low as US \$0.05 per minute. The 2011 Best Practice Average MTR of \$0.0509 should be used as an upper bound for the medium-term benchmark or target MTR for TCI for 2013. The Commission notes that the target of \$0.05 falls between the 2013 All Sample Average benchmark (\$0.0622) and the 2013 Best Practice Average benchmark (\$0.0390).

<sup>11</sup> These include Barbados, Guadeloupe, Martinique, and Trinidad and Tobago.

<sup>12</sup> This is particularly the case of Martinique and Guadeloupe where the NRA (ARCEP) intends to continue to review (and reduce) MTRs on an annual basis. ARCEP has indicated that based on an approved LRIC model the costs for providing mobile termination in Guadeloupe and Martinique is currently in the range Euros \$0.01 to \$0.02 per minute and that it intends to continue to reduce MTRs in a step-wise manner until reaching that level by the end of 2012 (consistent with EC recommendations - see Annex A). ARCEP further indicated that the costs for providing mobile termination in Guadeloupe and Martinique are in the same range as those in Metropolitan France (i.e., Euros \$0.01 to \$0.02 per minute).

Note that in light of possible cost differences across Caribbean jurisdictions, the Commission considers that reducing the MTR in TCI to the 2013 Best Practice Average benchmark rate of \$0.0390 may not be appropriate and could risk setting the MTR at a level that may not provide adequate compensation for mobile operators in TCI.

The Commission is of the preliminary view, therefore, that transitioning the upper limit for the MTR in TCI from the above-noted immediate term to medium-term benchmark rate levels would ensure that MTRs in TCI are gradually reduced to more efficient, cost-based levels, consistent with the principles and objectives set out in the Interconnection Regulations (as discussed in Chapter 3 above).

The proposed MTRs are consistent with current MTRs in a number of best practice Caribbean jurisdictions and are bounded by All Sample and Best Practice MTR averages that were conservatively calculated for 2011. The resulting glide path for 2011, 2012 and 2013 is consistent with the experience of glide paths in other jurisdictions and constitute year-over-year absolute and relative reductions in MTRs that are in line with the recent experience with glide paths in other jurisdictions.

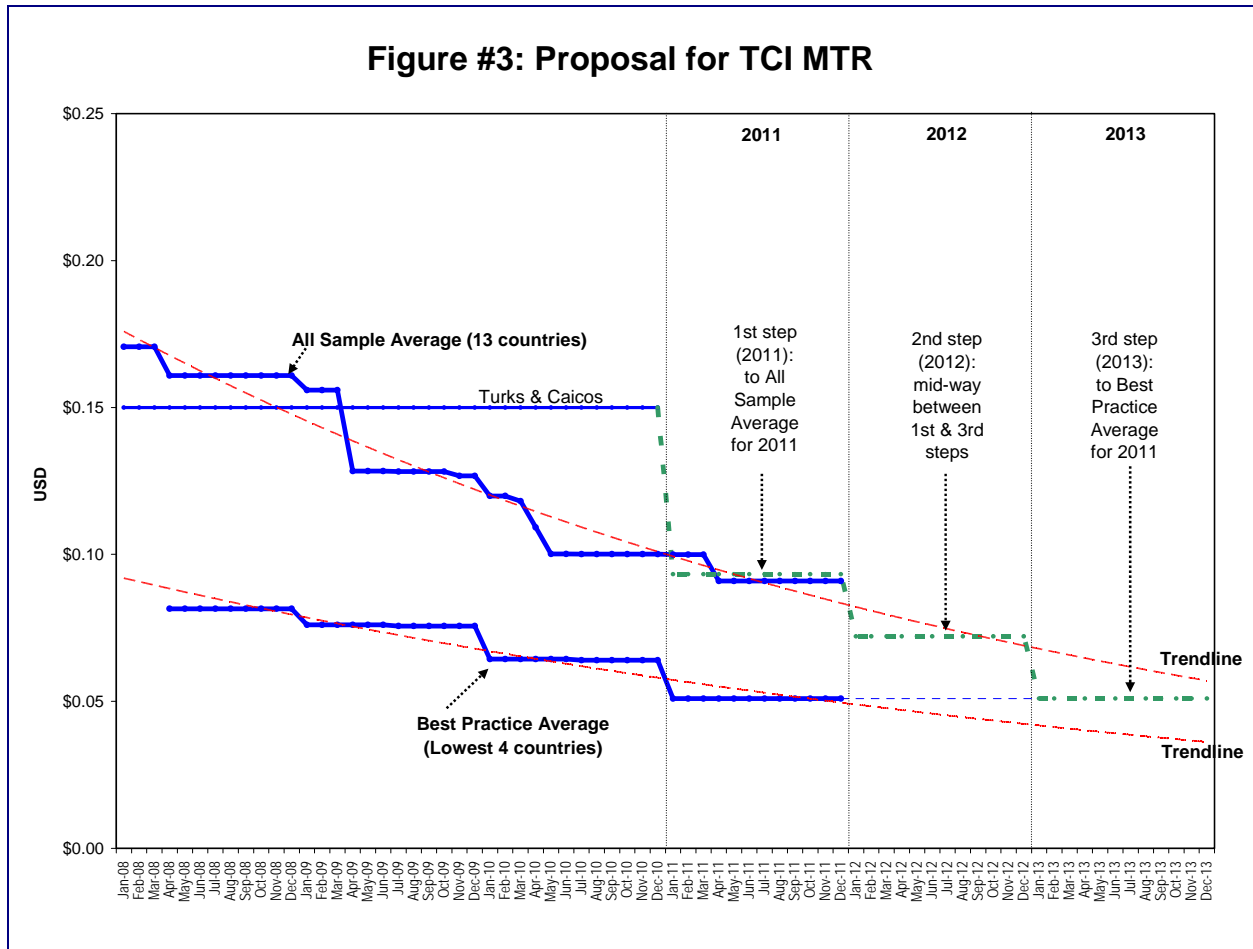
## **5.2 Summary of Proposal**

Following practice in other Caribbean and foreign jurisdictions, the Commission proposes that reductions in the MTR be phased in over the course of several years – i.e., that a glide path be established to transition the current MTR of \$0.15 to a more efficient, cost-based MTR of \$0.05.

Specifically, the Commission's MTR proposal involves the following three-step phased reduction in the MTR:

- i) Effective January 1, 2011, the upper limit on the MTR would be reduced to **\$0.09**.
- ii) Effective January 1, 2012, the upper limit on the MTR would be further reduced to **\$0.07**.
- iii) Effective January 1, 2013, the upper limit on the MTR would be further reduced to **\$0.05**.

Figure 3 below provides a graphical depiction of the proposed glide path for the upper limit MTR in TCI over the course of the next three years. All mobile carriers in TCI would be required to set their respective MTRs at or below the annual MTR rate caps.



**Question 9:** Please comment on of the Commission's preliminary MTR Proposal that would reduce the upper limit of the MTR in TCI to USD \$0.09, USD \$0.07 and USD \$0.05 over the course of the next three years, starting in January of 2011. To the extent parties believe an alternative MTR proposal would be more appropriate, please describe any such proposals in detail and include supporting rationale and data as may be relevant.

### 5.3 Proposed Directive

Assuming the Proposal or modified version of the Proposal is adopted at the conclusion of this proceeding, the Commission would issue the following Directive to C&W, Digicel and Islandcom:

The Commission directs C&W, Digicel and Islandcom to amend the Tariff Schedule in their respective interconnection agreements to reflect the prices hereby approved. The respective changes should be effective on the date proposed.

Therefore the parties to the current interconnection agreements are hereby directed to file for approval by the Commission an amendment to the Tariff Schedule of their current interconnection agreement that reflects the interconnection prices approved herein.

## Review of Mobile Termination Rate Consultation Document

The parties are directed to file the amended Tariff Schedule on or before [2 weeks after the issuance of this Decision].

In the event the Commission decides to make no specific changes to the current upper limit on the MTR, no Directive would be issued.

**Question 10:** Please provide comments on the Commission's proposed Directive assuming on the Proposal or a modified version of the Proposal is adopted. Also, please provide any changes to the Directive parties consider appropriate based on the Proposal or, if applicable, Respondents' own MTR proposals.

### 5.4 Future Review

The Commission expects to again review MTRs in TCI in mid-2013. This would provide the opportunity, if appropriate, to establish new MTRs beginning January 2014.

**Question 11:** Please provide comments on the Commission's proposed future review of MTRs.

**Question 12:** Please provide comments on any other issues relevant to the Commission's review of the MTR in TCI.

## Annex A: Caribbean MTR Developments

### Introduction

This Annex includes a review of the regulatory framework and development of MTRs in the Caribbean, focussing on the period after January 1, 2008. The MTR-specific data gathered in this review was used in the benchmarking study presented in Annex B.

### Methodology

All countries and jurisdictions in the Caribbean were considered. However, in some jurisdictions the MTR was considered commercially-confidential and not publicly available, so these are not included in the review. Further, jurisdictions in which the Receiving Party Pays (“RPP”) regime is in effect are also not included in the review because conceptually the resulting MTRs are not comparable to those that result from a Calling Party Pays (“CPP”) regime, as exists in the case of TCI<sup>13</sup>. Lastly, jurisdictions that have a monopoly integrated fixed-mobile operator are excluded because the concept of the MTR for our purposes relates to competitive scenarios. The following 13 jurisdictions met the above criteria and are discussed in the rest of this Annex:

- **Anguilla**
- **Barbados**
- **British Virgin Islands**
- **Cayman Islands**
- **Dominican Republic**
- **ECTEL Member States (Dominica, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines)**
- **French West Indies (Guadeloupe and Martinique)**
- **Trinidad & Tobago**

The following countries and jurisdictions did not meet one or both of the publicly-available MTR / CPP criteria and were not included in the review below:

- **Antigua and Barbuda** (MTR commercially confidential and not publicly available)

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<sup>13</sup> Note that if the RPP results were to be included, the MTR benchmarks would be lower than those resulting by including CPP countries only.

- **Aruba** (MTR commercially confidential and not publicly available)
- **Bahamas** (Monopoly provision of integrated fixed-mobile service; hence no operational MTR)
- **Bermuda** (RPP regime and MTR commercially confidential and not publicly available)
- **Cuba** (MTR not publicly available)
- **Haiti** (MTR not publicly available)
- **Jamaica** (MTR commercially confidential and not publicly available)
- **Puerto Rico** (RPP regime)
- **US Virgin Islands** (RPP regime)

Based on a review of the two lists above, the number of jurisdictions included in the review (13) constitutes a majority of all the countries in which the CPP regime holds and there is a competitive mobile sector (18). As such, the benchmarking results based on this group of jurisdictions can be considered representative of the whole of the Caribbean.

## **Anguilla**

There are currently two licenced mobile operators that are operational in Anguilla: C&W and Digicel.

In 2005, the Anguilla NRA, the Public Utilities Commission (“PUC”), approved the interconnection agreement between C&W and Digicel, including the respective MTR, established at \$0.40 Eastern Caribbean Dollars (“XCD”).

In June 2007, the PUC commenced a review of MTRs. Following a review of the submissions and reply comments filed by interested parties, the Commission issued a decision on December 2007 recommending an initial reduction in MTR effective April 1, 2008 from \$0.40 to \$0.35 XCD and a second reduction effective April 1, 2010 from \$0.35 to \$0.30 XCD. In making these recommendations, the PUC noted that

In the absence of an acceptable costing methodology and related interconnection prices, the Commission remains obliged to make determinations on the level of interconnection rates by considering the views of interested parties in such proceedings and taking into account any other relevant information as well as having regard to the requirements of the relevant sections of the Act and regulations governing the Commission’s responsibilities in such matters.

The recommendations were approved by another PUC decision on March 2008, which also noted that

In the absence of suitable costing results, and having regard to the time and effort generally associated with developing, implementing, applying and analyzing costing methodologies and

their subsequent results, the Commission concurs with Digicel's submission regarding the benefits of benchmarking studies for gauging the appropriate level for MTRs. The Commission also recognizes the challenges in finding and selecting a suitable set of benchmarks.

[...]

A suitable benchmark should reflect as much as possible the "efficient" level of cost to provide the related termination service in the national environment in which it is provided. Incongruent networks due to significant differences in network topology or irrelevant comparisons due to wide variations in exchange rates should be avoided when selecting a suitable benchmark.

In July 2009, the PUC issued another public notice proposing that “in order to adjust the mobile termination rates to a more cost-oriented level in a more timely manner, the Commission proposes to amend the effective date ... for the next adjustment ... from 1 April 2010 to 1 November 2009.” The PUC confirmed this initial proposal on October 30, 2009.

### **Barbados**

There are currently two licenced mobile operators that are operational in Barbados: C&W and Digicel.

Much of the interconnection process in Barbados, including the level of the MTR, is regulated by Reference Interconnection Offers ("RIOs") imposed on C&W by the Barbados NRA, the Fair Trading Commission ("FTC").

From the 2003-2004 period to February 2010, the MTR was set at \$0.30 Barbados Dollars ("BBD") in the context of three separate RIOs: Mobile, Domestic Fixed Wireless and International.

On September 2008, the FTC requested that C&W file a consolidated RIO to replace and update the three separate RIOs noted above. The FTC undertook a public consultation process based on the C&W-proposed consolidated RIO of December 2008. That proposal included a 5% reduction in the MTR for each of the next three years, amounting to a 15% reduction in total over the three years.

The FTC noted that in the consultation process all service providers had raised the issue of high interconnection charges. It also confirmed its earlier policy “that ultimately the interconnection rates should be based on Total Service Long Run Incremental Cost (TSLRIC), which is a forward-looking cost methodology, rather than a historical approach such as Fully Distributed Costs (FDC)”.

Based on the consultation process, the FTC advised C&W that it was not satisfied with some aspects of the proposed consolidated RIO (including the proposed MTR) and requested C&W to revise its submission. Specifically, pending a regulatory process to review LRIC, FTC concluded that a one-time 15% reduction in the MTR should be implemented, “as these rates had not changed since 2004 and there was general information that the cost of telecommunications had decreased.”

Based on this, C&W proposed a revised consolidated RIO on December 2009, which included an MTR of \$0.255 BBD. Further revisions were required to the Tariff Schedule, and the whole consolidated RIO was approved by FTC decision of February 22, 2010. The approved RIO states that the MTR is reciprocal for other mobile operators interconnecting with C&W, including Digicel.

The first full month that the new MTR was effective was March 2010. The FTC has indicated that it intends to initiate a process to implement an LRIC-based costing methodology and model for future revisions of the MTR.

## **British Virgin Islands**

There are currently three licenced mobile operators that are operational in BVI: C&W, Digicel and CCT Global.

The current MTR in BVI is the result of commercial negotiations between the operators. The current level of the MTR is US \$0.05 per minute for two of the three operators that have agreed that this information is non-confidential and therefore available from the NRA of the BVI, the Telecommunications Regulatory Commission of the Virgin Islands (UK). The MTR has been in effect since November 2007. The MTR for the third mobile operator is confidential.

## **Cayman Islands**

There are currently two licenced mobile operators that are operational in the Cayman Islands: C&W and Digicel.

In 2004, the interconnection agreement between C&W and Digicel, including the respective MTR, established at \$0.1845 Cayman Islands Dollars ("KYD"), was approved by the Cayman Island NRA, the Information and Communication Technology Authority ("ICTA").

The interconnection agreement also included transitional provisions for a 30-month phasing-in process of any reduction in MTRs as established by ICTA in the context of on-going process to determine prices based on Forward-Looking Long Run Incremental Cost ("FL-LRIC") costing methodology.

The first phase of the FL-LRIC development process was initiated by a public consultation on May 2004. The second phase of the process began in October 2005. The current third phase of the FL-LRIC process was initiated by a public consultation in January 2009, which among other matters required C&W to file revised versions of the FL-LRIC model and MTR studies. Preliminary results provided by C&W as part of this process in May 2009, but not approved by ICTA, indicate an FL-LRIC of \$0.072 KYD for 3G network and \$0.091 for a 2G network, but recommended a rate of \$0.0864 in the context of its proposal to Digicel in the context of the renewal of the 2004 Interconnection Agreement. The third phase is not concluded; however, one of the expect results is an ICTA determination on the FL-LRIC-based MTR.

On December 2009, Digicel requested the ICTA to issue a determination to settle a series of interconnection disputes associated with the renewal of the Interconnection agreement with C&W. While the parties had agreed to a MTR of \$0.08965 KYD, there was disagreement as to whether the 30-month transition process should apply from the then existing rate of \$0.1845 KYD to the new rate. On April 29, 2010, the ICTA issued a decision that among other matters ruled that the new agreed rate should be implemented immediately, with no glide path.

The first full month that the new MTR was effective was April 2010. It is possible that the MTR could be further reviewed in the context of the finalization for the third and final phase of the FL-LRIC development process,

## **Dominican Republic**

There are currently three licenced mobile operators that are operational in Dominican Republic: Claro, Orange and Tricom.

Based on an initial process to resolve a series of interconnection disputes, in 2003 the Dominican Republic NRA, the *Instituto Dominicano de las Telecomunicaciones* (“INDOTEL”) approved a series of interconnection agreements between the operators, including the respective MTR established at US \$0.075, or its national currency equivalent of \$1.79 Dominican Republic Pesos (“DOP”).

The Interconnection Regulation requires that operators re-submit their interconnection agreements for approval by INDOTEL at least every two years. In 2005, INDOTEL rejected a draft interconnection agreement that included an increase in the MTR, noting, among other arguments, that such an increase was not consistent with international trends. In 2007, INDOTEL rejected a series of draft interconnection agreements that maintained the MTR at US \$0.075, because there was no evidence that the proposed MTR was cost based, as required by the legal provisions, including the Costs and Tariffs Regulation.

Based on further negotiations, the operators submitted to INDOTEL draft interconnection agreements that included a one-off 5% reduction in MTRs. INDOTEL did not approve these drafts, noting that in the absence of costing information, the benchmarking trend information suggested that deeper reductions would be appropriate. Based on this, the operators undertook further negotiations and submitted revised interconnection agreements in July 2008, setting out phased-in reductions totalling 10%, based on 2% reductions every six months, as set out in Table 2. This draft agreement was approved by INDOTEL on August 15, 2008.

	<b>To December 31, 2008</b>	<b>From January 1, 2009</b>	<b>From July 1, 2009</b>	<b>From January 1, 2010</b>	<b>From July 1, 2010</b>	<b>From December 31, 2010</b>
<b>MTR</b>	0.07500	0.0735	0.0720	0.0705	0.0690	0.0675

INDOTEL has indicated that it intends to initiate a process to implement an LRIC-based costing methodology and model for future revisions of the MTR, based on the provisions of the Costs and Tariffs Regulation.

## ECTEL Member States

Generally, there are currently two licenced mobile operators that are operational in each of the ECTEL Member-States (Dominica, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines): C&W and Digicel.

The Eastern Caribbean Telecommunications Authority (“ECTEL”) provides overall non-binding policy and regulatory advice in the form of recommendations to the five Member-States. Each Member-State has its own corresponding NRA, the National Telecommunications Regulatory Commission (“NTRCs”), that reviews and otherwise approves ECTEL recommendations and other national-level matters.

The revised Interconnection Regulations of each of the Member-States establish the following:

11. (1) The Commission shall, acting on the recommendation of ECTEL, determine upon its own motion or upon an application by any person, the interconnection rate of any person who provides or offers to provide interconnection.
- (2) Interconnection rates shall be cost-oriented and imposed in a transparent manner ...
- (4) Notwithstanding sub-regulation (2), the Commission may impose cost-oriented rates in a phased manner and on such terms and conditions as may be determined by the Commission, acting on the recommendation of ECTEL.

The revised Interconnection Regulations include the following definitions

“cost-oriented” means those charges equal to the long-run incremental cost of an efficient provider plus an appropriate portion of shared and common costs;

“phased manner” means to reduce or increase gradually or in stages;

ECTEL began the process of developing LRIC models to calculate the cost of MTRs in November 2005. In January 2007, ECTEL recommended that the NTRCs initiate a public consultation process to review and comment on the draft LRIC models, results and manual. Based on a number of significant comments received, ECTEL undertook a substantial revision of the models, which were included as part of a new public consultation of July 2008 that set out the draft MTRs and proposed a three-year transition to cost-oriented prices.

In its decision of March 31, 2009, ECTEL implemented a three-step reduction process from the existing MTRs of \$0.55 Eastern Caribbean Dollars (“XCD”) to reach the calculated LRIC cost-oriented MTRs effective April 1, 2011, as set out in Table 3.

	<b>To March 31, 2009</b>	<b>From April 1, 2009</b>	<b>From April 1, 2010</b>	<b>From April 1, 2011</b>
<b>Dominica</b>	0.5500	0.3690	0.3135	0.2580
<b>Grenada</b>	0.5500	0.3690	0.3100	0.2510
<b>St. Kitts and Nevis</b>	0.5500	0.3690	0.3253	0.2817
<b>St. Lucia</b>	0.5500	0.3690	0.2965	0.2240
<b>St. Vincent and the Grenadines</b>	0.5500	0.3690	0.3051	0.2413

## French West Indies

There are currently three licenced mobile operators that are operational in each of Guadeloupe and Martinique: Only, Orange and Digicel.

Guadeloupe and Martinique are overseas territories of the French Republic and therefore under regulation of the French NRA, the Autorité de régulation des communications électroniques et des postes (“ARCEP”) and subject to EC oversight and directions.

Consistent with the EC framework, ARCEP has through a series of decisions established a series of SMP-related ex ante obligations related to interconnection, including with respect to cost-oriented MTRs. In the meantime, however, ARCEP has required the following evolution of MTRs for those that are subject to the cost-orientation obligation, as set out in Table 4.

	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>MTR</b>	0.1100	0.0870	0.0550

ARCEP has indicated that they will comply with the EU Recommendation with respect to MTRs in Guadeloupe and Martinique. This means the continuation of MTR reductions, this time in a phased application of the “Pure LRIC” approach.

ARCEP has consulted on and thoroughly reviewed a LRIC model consistent with EU recommendations, which was made public in May 2009. The 2010 MTR, which is based on a form of glide path, was set based on the results of that model. ARCEP has further indicated that based on the same model, the incremental cost of providing mobile termination in Guadeloupe and Martinique is in the range Euros \$0.01 to \$0.02 per minute. ARCEP noted that this result is similar to that calculated in metropolitan France. However, because the MTRs in Guadeloupe and Martinique have been historically higher than in Metropolitan France, the transition process to the range Euros \$0.01 to \$0.02 per minute for the beginning of 2013 is more advance in Metropolitan France, and hence current MTRs are lower in Metropolitan France (Euros \$0.03 for the period July-December, 2010).

ARCEP has indicated that based on an approved LRIC model the costs for providing mobile termination in Guadeloupe and Martinique is currently in the range Euros \$0.01 to \$0.02 per minute and that it intends to continue to reduce MTRs in a step-wise manner until reaching that level by the end of 2012, consistent with EC recommendations.

## Trinidad & Tobago

There are currently two licenced mobile operators that are operational in Trinidad & Tobago: TSTT and Digicel.

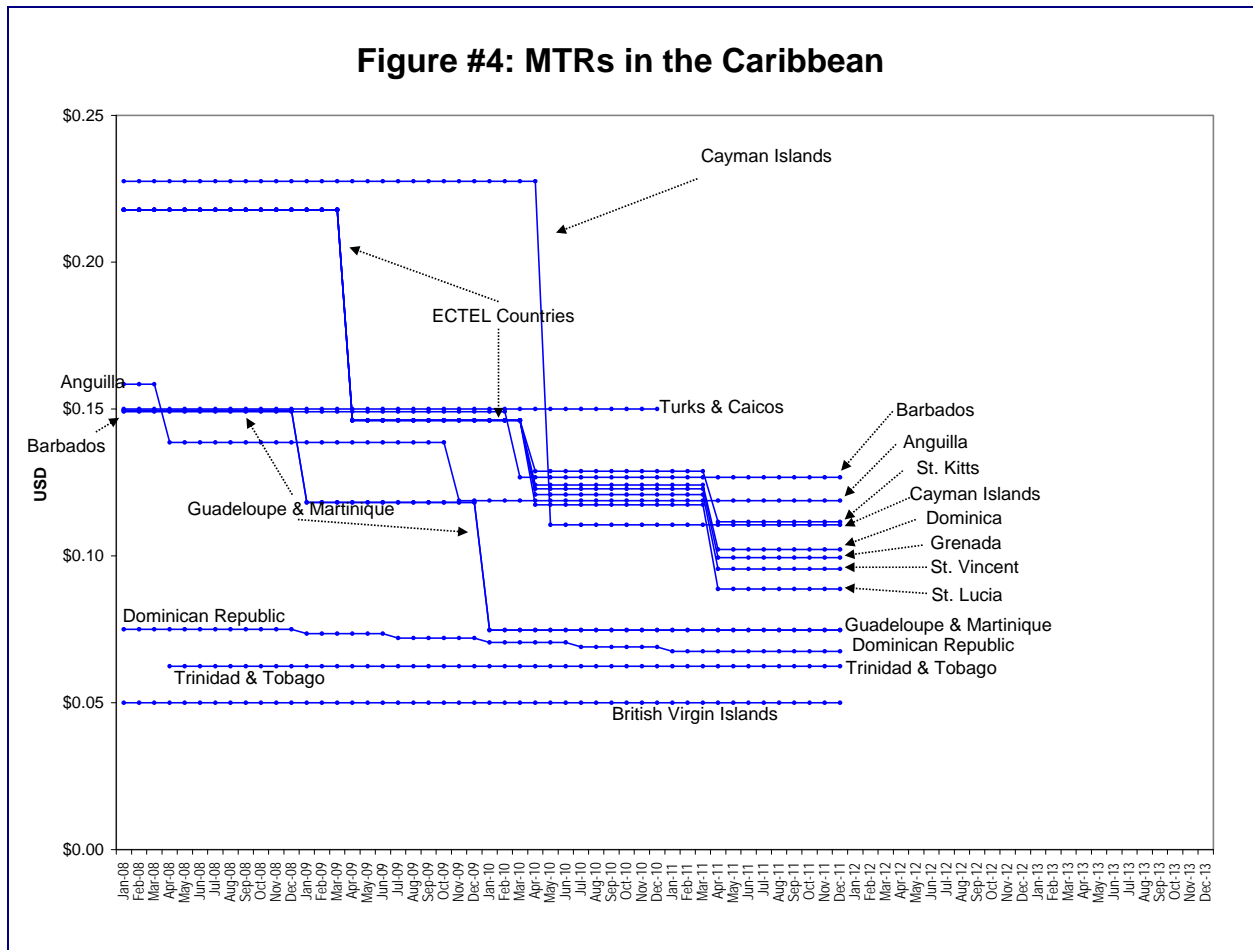
Based on a declared interconnection dispute, in August 2006 a panel convened by the NRA, the Telecommunications Authority of Trinidad & Tobago (“TATT”), issued a report, that resulted in the parties exchanging traffic under a “bill and keep” arrangement until the March 2008.

At that time, a second Arbitration Panel ruled on the interconnection dispute between the parties. It examined benchmarking data and costs data (not based on LRIC studies) submitted by both parties and ruled that the MTR should be set at \$0.40 Trinidad & Tobago dollars (“TTD”). That MTR has been effective from April 2008.

The TATT has initiated a process to review and approve a LRIC model for the establishment of MTRs in the future.

## Summary of MTRs

Figure 4 provides a graphical presentation of the evolution of the MTRs in each of the 13 jurisdictions discussed above and TCI expressed in a common currency (i.e., U.S. dollars). Figure 1 in Chapter 3, which provides the All Sample Average and the Best Practice Averages, is based on this Figure 4.



## Annex B: MTR Benchmark

### Introduction

This Annex describes the methodology and results of the MTR benchmarking exercise, which was based on the information included in Annex A.

### Methodology

Information on MTR levels and trends was collected for the 13 Caribbean Jurisdictions discussed in Annex A and for TCI. All prices were converted from their domestic currencies into U.S. dollars, where relevant, based on the prevailing exchange rate on June 1, 2010 (obtained from the XE Universal Currency Converter, <http://www.xe.com/ucc>).

### MTR Values

- Actual MTRs were tracked and recorded from January 2008 to June 2010.
- From July 2010 to December 2011, MTRs were “Forward Projected” as follows:
  - Using NRA specified forward-looking MTRs, where the NRA has stipulated specific and time-bound plan for changes in MTRs during that period.
  - If the NRA has not stipulated such changes, the MTRs that were current on June 2010 were used<sup>14</sup>.

These MTRs (Actual and Forward Projected) for the 14 jurisdictions are presented in Figure 4 in Annex A.

### MTR Averages

Two different averages were constructed based on the 13 jurisdictions (TCI was not included in either average):

- The "All Sample Average (13 countries)" is calculated as the unweighted average of the MTRs in the 13 Caribbean jurisdictions, including projected MTRs. These are available from January 2008 to December 2011.
- The "Best Practice Average (4 lowest countries)" is calculated as the unweighted average of the four lowest MTRs for any particular month. These are available from April 2008 to December 2011.<sup>15</sup>

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<sup>14</sup> In Annex A, some NRAs indicated that they would review MTRs in the near term. Hence, MTRs in those countries are likely to be lower than the “status quo.”

Figure 1 in Chapter 4 shows the All Sample Average, the Best Practice Average and the trend lines for each of averages. The trend lines are calculated as the best-fit regression for each of the average (time series), with the regression results extrapolated to December 2013. Both regressions are based on the exponential formulation:

$$MTR = C * e^{D * Time}, \text{ where } C \text{ and } D \text{ are calculated parameters.}$$

The regression results are presented in Table 5.

	C	D	Adjusted R <sup>2</sup>
All Sample Average	0.1787	-0.0159	0.9486
Best Practice Average	0.0931	-0.0131	0.09044

## MTR levels and trends in Caribbean

Table 6 shows the Actual and Forward Projected values for the All Sample Average and Best Practice Average by six-month periods. TCI is shown as well, for comparison.

For the period from January 2012 to December 2013, Table 6 also shows the predicted values for each of the two averages, based on an extrapolation of the regression results presented above. Table 6 also shows that MTRs are expected to continue to decline in the mid-term.

		April 2008 to Dec 2008	Jan 2009 to Jun 2009	July 2009 to Dec 2009	Jan 2010 to June 2010	July 2010 to Dec 2010	Jan 2011 to June 2011	July 2011 to Dec 2011	Jan 2012 to June 2012	July 2012 to Dec 2012	Jan 2013 to June 2013	July 2013 to Dec 2013
All Sample Average	Actual Values	0.1608	0.1421	0.1277	0.1113							
	Forward Projection					0.1001	0.0955	0.0910				
	Trend line Extrapolated								0.0788	0.0717	0.0651	0.0592
Best Practice Average	Actual Values	0.0815	0.0760	0.0757	0.0644							
	Forward Projection					0.0640	0.0509	0.0509				
	Trend line Extrapolated								0.0474	0.0438	0.0405	0.0375
TCI		0.1500	0.1500	0.1500	0.1500	0.1500						

<sup>15</sup> Note that because Trinidad & Tobago had a Sender Keep All (“SKA”) (also known as “Bill and Keep”) regime until March 2008, but afterwards was one of the lowest 4 MTRs, the Best Practice Average is available from April 2008 onwards.

Table 1, which is replicated from Chapter 5, summarizes the results provided in Table 6 by providing annual results for each of the two averages.

<b>Table 1: Annual Benchmark MTR Results (\$USD)</b>				
	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>All Sample Average</b>	0.1057	0.0932	0.0752	0.0622
<b>Best Practice Average</b>	0.0642	0.0509	0.0456	0.0390

## Annex C: Retail Prices and MTRs in Caribbean

### Introduction

This Annex describes the methodology and results of the analysis of off-net and on-net mobile-to-mobile and fixed-to-mobile calling prices and how they relate to MTRs.

### Mobile-to-Mobile

#### Methodology

Information on mobile prices was collected for the 13 Caribbean Jurisdictions included in Annex A and for TCI. The mobile operators providing service in each jurisdiction were identified from GSMA coverage maps, obtained from the GSMA website. Information on mobile prices and plan details was collected from the websites of the operators and through follow-up phone calls or e-mails (when websites did not offer complete information).

Data was collected on mobile prices offered by the operators for Prepaid and Postpaid plans for peak calling periods. The Prepaid calling price per minute was based on the retail price per minute for prepaid calling indicated on the company website. In a few cases, subscribers were offered volume discounts for purchasing larger quantities of prepaid minutes; in this case, the price per minute was calculated using the highest number of minutes the consumer could purchase at one time. The Postpaid calling price was based on the retail price per minute<sup>16</sup>, assuming subscribers use their maximum allotment of minutes without going over (“on-plan” calling). To ensure comparability among countries and operators, the plan offering most minutes to subscribers were chosen for Postpaid calling. Further, calling prices for Prepaid and Postpaid were calculated for on-net and mobile-to-mobile off-net<sup>17</sup> calls.

All prices were converted from their quoted currencies into U.S. dollars, based on the prevailing exchange rate on June 1, 2010 (obtained from the XE Universal Currency Converter, <http://www.xe.com/ucc>).

#### Retail Results

Table 7 presents the base information and the results in USD of the mobile-to-mobile retail prices in each of the 13 Caribbean Jurisdictions included in Annex A as well as TCI.

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<sup>16</sup> The price per minute used in the analysis is calculated by dividing the monthly subscription price by the number of minutes available to the subscriber in that plan.

<sup>17</sup> In some instances, no off-net calling was included in postpaid plans, in which case the “off-plan” (that is, the price for minutes not included in the price for off-net calls) was used, to best reflect the pricing conditions faced by the subscribers.

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<b>Table 7: Mobile-to-Mobile calling prices (Peak, USD/minute)</b>							
<b>Country</b>	<b>Operator</b>	<b>Web Address</b>	<b>Post Paid Plan Name</b>	<b>Post Paid Calling Price</b>		<b>Pre Paid Calling Price</b>	
				<b>On-Net</b>	<b>Off-Net</b>	<b>On-Net</b>	<b>Off-Net</b>
Anguilla	Digicel	http://www.digicel-anguilla.com/en/plans/digiselect/select_tariffs	Select 3000	0.079	0.079	0.198	0.356
	Lime	http://www.time4lime.com/ai/personal/mobile/plans.jsp	950	0.083	0.083	0.238	0.297
	<b>Average</b>			<b>0.081</b>	<b>0.081</b>	<b>0.218</b>	<b>0.327</b>
Barbados	Digicel	http://www.digicelbarbados.com/en/plans/digiselect/digi-talk-unlimited-tariffs-rates	Digi Talk Unlimited	0.124	0.124	0.248	0.348
	Lime	http://www.time4lime.com/bb/personal/mobile/plans.jsp	Connected	0.099	0.099	0.149	0.348
	<b>Average</b>			<b>0.112</b>	<b>0.112</b>	<b>0.199</b>	<b>0.348</b>
British Virgin Islands	Digicel	http://www.digicelbvi.com/en/plans/digiselect/select_tariffs	Select 675				
	CCT Gbl	http://www.cctwireless.com/plans/postpaid/	1000R	0.100	0.100	0.190	0.350
	Lime	http://www.time4lime.com/vg/personal/mobile/plans.jsp	5000	0.080	0.080	0.200	0.350
	<b>Average</b>			<b>0.090</b>	<b>0.090</b>	<b>0.190</b>	<b>0.350</b>
Cayman Islands	Digicel	http://www.digicelcayman.com/en/plans/digiselect/select_tariffs	Select 900	0.123	0.123	0.247	0.493
	Lime	http://www.time4lime.com/ky/personal/mobile/plans.jsp	850	0.121	0.121	0.308	0.432
	<b>Average</b>			<b>0.122</b>	<b>0.122</b>	<b>0.278</b>	<b>0.463</b>
Dominica	Digicel	http://www.digiceldominica.com/en/plans/digiselect/select_tariffs	Select 900	0.110	0.110	0.198	0.337
	Lime	http://www.time4lime.com/dm/personal/mobile/plans.jsp	2000	0.099	0.297	0.238	0.317
	<b>Average</b>			<b>0.104</b>	<b>0.203</b>	<b>0.218</b>	<b>0.327</b>
Dominican Republic	Claro	http://www.claro.com.do/contenido.aspx?id=50	Habla Claro Favorito 1250	0.090	0.090	0.164	0.213
	Orange	http://www.orange.com.do/web/guest/orange-max	Max 1200	0.069	0.069	0.164	0.213
	Tricom	http://www.tricom.net/m%C3%B3vil+pospago.aspx	Pospago 1000	0.069	0.069		0.278
	<b>Average</b>			<b>0.076</b>	<b>0.076</b>	<b>0.164</b>	<b>0.235</b>
Grenada	Digicel	http://www.digicelgrenada.com/en/plans/digiselect/select_tariffs	Select 1000	0.118	0.118	0.150	0.337
	Lime	http://www.time4lime.com/gd/personal/mobile/plans.jsp	1000	0.107	0.329	0.190	0.376
	<b>Average</b>			<b>0.112</b>	<b>0.223</b>	<b>0.170</b>	<b>0.356</b>
Guadelupe & Martinique (terms & conditions identical)	Digicel	http://www.digicel.fr/fr/offres/forfaits-no-limit/forfaits-no-limit-antilles	Forfait No Limit	0.163	0.163	0.489	0.761
	Only	http://www.only.fr/boutique-en-ligne/telephonie-mobile/trio2.cfm	trio2	0.190	0.190	0.476	0.476
	Orange Caraibe	http://www.orangecaraibe.com/offres/index.html	Forfait Max 20h	0.155	0.155	0.544	0.612
	<b>Average</b>			<b>0.169</b>	<b>0.169</b>	<b>0.503</b>	<b>0.616</b>
St. Kitts & Nevis	Digicel	http://www.digicelstkittsandnevis.com/en/plans/digiselect/select_tariffs	Select 900	0.125	0.125	0.198	0.352
	Lime	http://www.time4lime.com/kn/personal/mobile/plans.jsp	700	0.090	0.273	0.257	0.352
	<b>Average</b>			<b>0.108</b>	<b>0.199</b>	<b>0.228</b>	<b>0.352</b>
St. Lucia	Digicel	http://www.digicelstlucia.com/en/plans/digiselect/select_tariffs	Select 1000	0.118	0.118	0.297	0.337
	Lime	http://www.time4lime.com/lc/personal/mobile/plans.jsp	600	0.089	0.297	0.273	0.313
	<b>Average</b>			<b>0.104</b>	<b>0.208</b>	<b>0.285</b>	<b>0.325</b>
St. Vincent	Digicel	http://www.digicelsvg.com/en/plans/digiselect/select_tariffs	Select 900	0.125	0.125	0.341	0.388
	Lime	http://www.time4lime.com/vc/personal/mobile/plans.jsp	1000	0.149	0.273	0.250	0.364
	<b>Average</b>			<b>0.137</b>	<b>0.199</b>	<b>0.295</b>	<b>0.376</b>
Trinidad & Tobago	B-mobile	http://www.bmobile.co.tt/personal	beyond	0.101	0.101	0.203	0.203
	Digicel	http://www.digiceltt.com/en/postpaid/digi_postpaid/postpaid_tariffs	360	0.111	0.111	0.179	0.250
	<b>Average</b>			<b>0.106</b>	<b>0.106</b>	<b>0.191</b>	<b>0.226</b>
Turks and Caicos	Digicel	http://www.digicelctci.com/en/plans/digiselect/select_tariffs	Select 900	0.110	0.110	0.330	0.380
	Islandcom	http://www.islandcom.tc/postpaid.php	1000	0.180	0.180	0.250	0.300
	Lime	http://www.time4lime.com/tc/personal/mobile/plans.jsp	1250	0.120	0.120	0.300	0.400
	<b>Average</b>			<b>0.137</b>	<b>0.137</b>	<b>0.293</b>	<b>0.360</b>

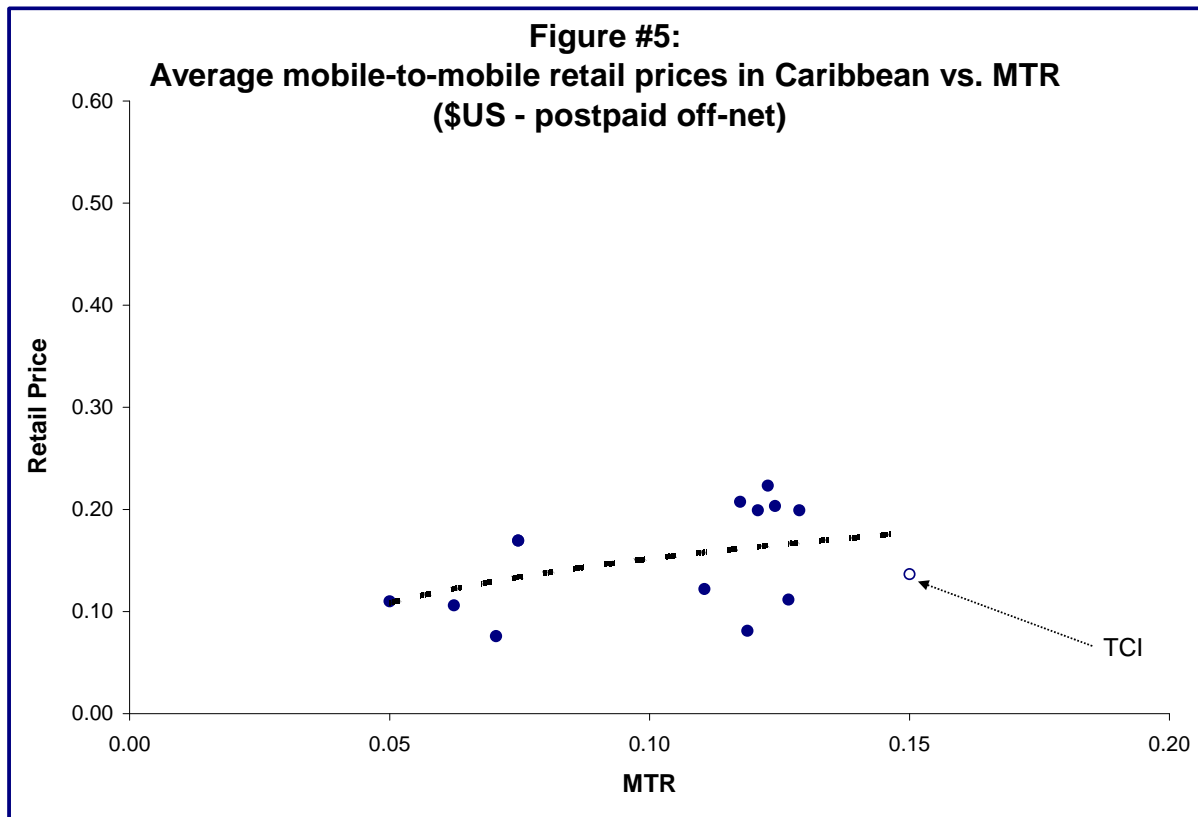
### Retail Calling and MTR Analysis

Figures 5 to 7 show the relationship between Postpaid retail mobile-to-mobile calling prices and MTRs for the 13 Caribbean Jurisdictions plus TCI<sup>18</sup>.

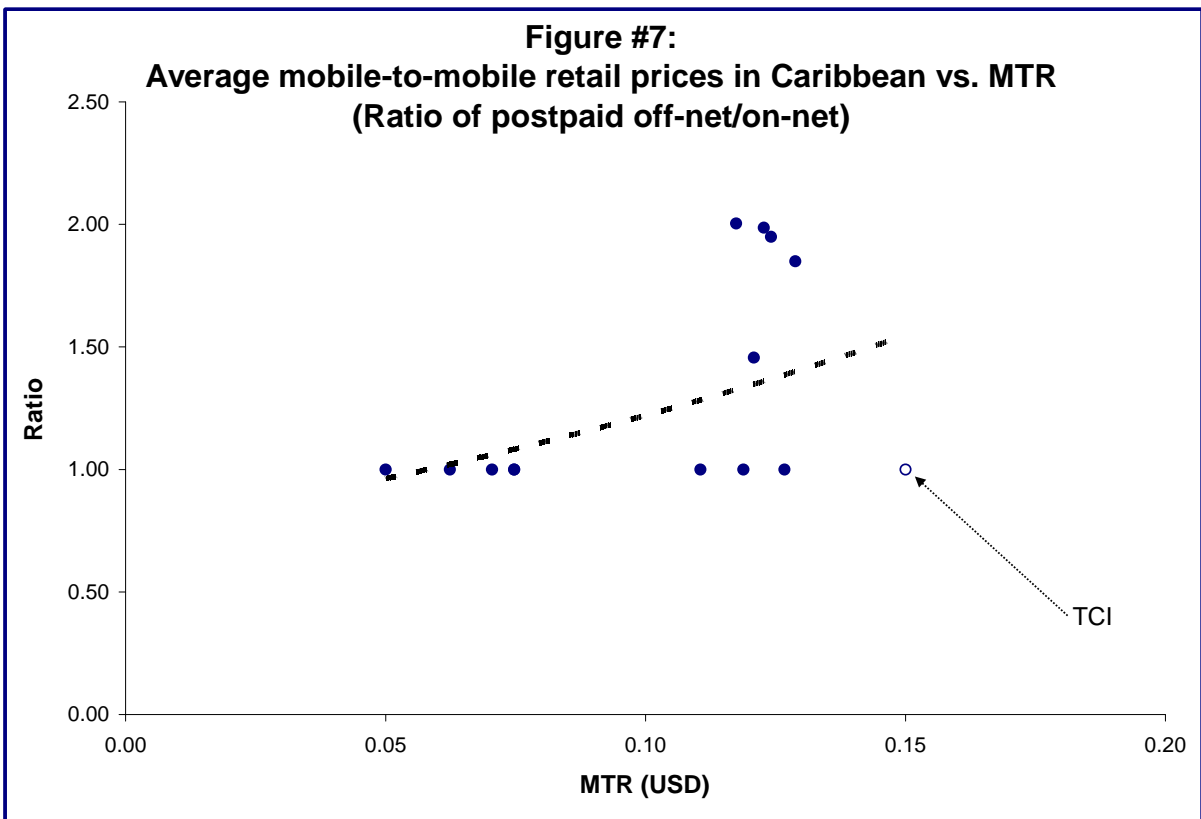
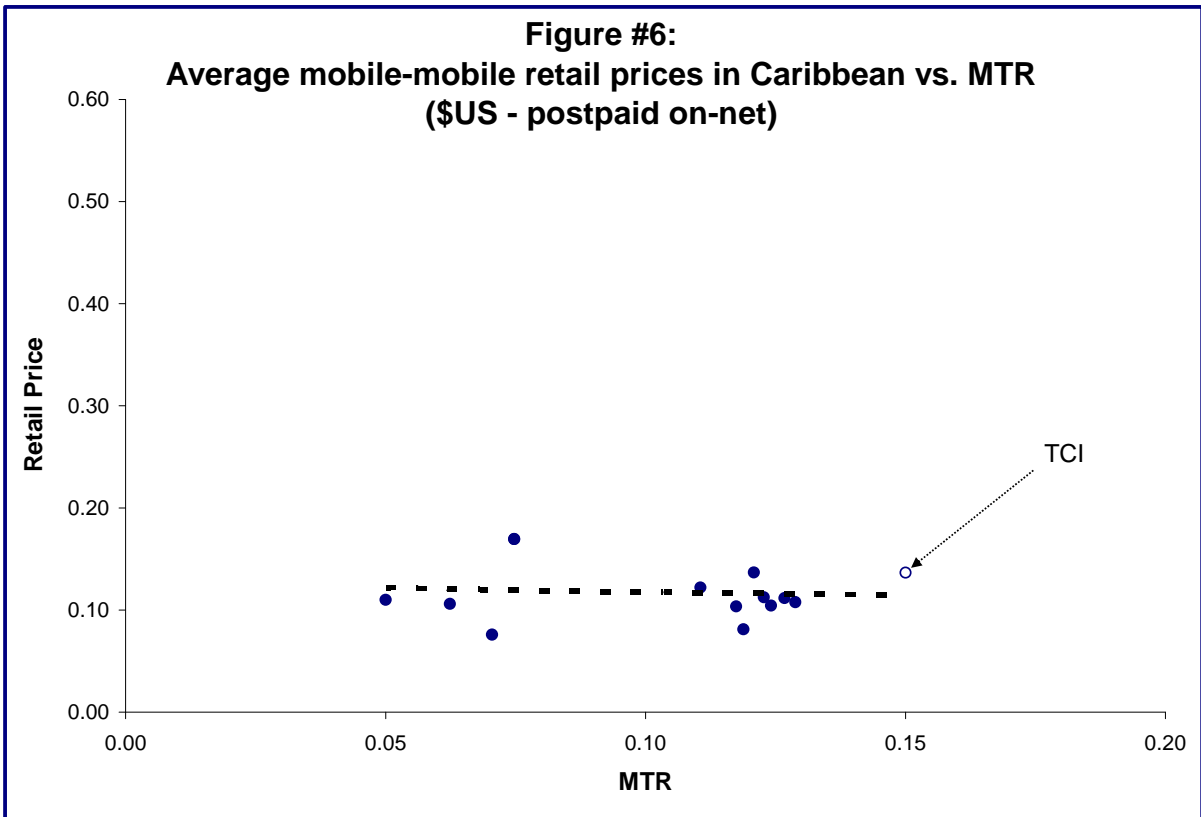
Figure 5 shows that Postpaid off-net calling prices tend to be lower when the underlying MTR is lower. While the statistical relation is not strong, the results clearly do not support the contention that mobile prices increase as MTRs decrease.

Figure 6 suggests that the level of MTRs do not tend to influence on-net retail prices for Postpaid calling.

Figure 7 shows that the ratio of off-net to on-net Postpaid calling pricing is higher for higher MTRs. This is consistent with the expectation that allocative efficiency and competition are promoted by lowering MTRs.



<sup>18</sup> The analysis also included a review of the relationship between Prepaid retail mobile-to-mobile calling prices (off-net, on-net and the ratio of same) and MTRs. The results, however, were inconclusive.



## Fixed-to-Mobile

### Methodology

Information on fixed prices was collected for the 13 Caribbean Jurisdictions included in Annex A and for TCI. The incumbent fixed operators operating in each country were identified through prior knowledge and Internet research. Information on fixed prices and plan details was collected from the websites of the operators and through follow-up phone calls or e-mails (when websites did not offer complete information).

Data was collected on retail fixed prices for peak calling periods based on on-net<sup>19</sup> off-plan<sup>20</sup> calling<sup>21</sup> and off-net (fixed to mobile) off-plan calling<sup>22</sup>.

All prices were converted from their quoted currencies into U.S. dollars, based on the prevailing exchange rate on June 1, 2010 (obtained from the XE Universal Currency Converter, <http://www.xe.com/ucc>).

### Retail Results

Table 8 presents the base information and the results in USD of the mobile-to-mobile retail prices in each of the 13 Caribbean Jurisdictions included in Annex A, as well as TCI.

Country	Operator	Web Address	Name of Post Paid Plan	Fixed-Fixed	Fixed-Mobile
Anguilla	Lime	<a href="http://www.time4lime.com/ai/personal/landline/plans.jsp">http://www.time4lime.com/ai/personal/landline/plans.jsp</a>	Residential Telephone line rental	0.036	0.238
Barbados	Lime	<a href="http://www.time4lime.com/bb/personal/landline/plans.jsp">http://www.time4lime.com/bb/personal/landline/plans.jsp</a>	Residential Telephone line rental	0.000	0.000
British Virgin Islands	Lime	<a href="http://www.time4lime.com/vg/personal/landline/plans.jsp">http://www.time4lime.com/vg/personal/landline/plans.jsp</a>	Basic Home Plan	0.150	0.150
Cayman Islands	Lime	<a href="http://www.time4lime.com/ky/personal/landline/plans.jsp">http://www.time4lime.com/ky/personal/landline/plans.jsp</a>	Residential Telephone line rental	0.053	0.333
Dominica	Lime	<a href="http://www.time4lime.com/dm/personal/landline/plans.jsp">http://www.time4lime.com/dm/personal/landline/plans.jsp</a>	Residential Telephone line rental	0.028	0.226
Dominican Republic	Codetel	<a href="http://www.codetel.com.do/detalle.aspx?id=138">http://www.codetel.com.do/detalle.aspx?id=138</a>	Plan Hogar Inalámbrico	0.030	0.030
Grenada	Lime	<a href="http://www.time4lime.com/gd/personal/landline/plans.jsp">http://www.time4lime.com/gd/personal/landline/plans.jsp</a>	Residential Telephone line rental	0.032	0.261
Guadeloupe & Martinique (terms & conditions)	France Telecom	<a href="http://boutique.orange.fr/mx/?tp=HTM&amp;id=&amp;donnee_appel=&amp;IDCible=&amp;pagesuivante=php/vf/accueil/aide/prix_communications/domtom.php#dom2">http://boutique.orange.fr/mx/?tp=HTM&amp;id=&amp;donnee_appel=&amp;IDCible=&amp;pagesuivante=php/vf/accueil/aide/prix_communications/domtom.php#dom2</a>	Tarif general	0.124	0.124

<sup>19</sup> Where there were two fixed operators, the On-Net price (i.e., the price for calling within the same network) was used for benchmarking purposes.

<sup>20</sup> Where operators offered additional services through premium plans (e.g., unlimited fixed-to-mobile calling, unlimited long-distance, three-way calling, call-waiting, etc.), the most basic plan was used for benchmarking purposes.

<sup>21</sup> In two cases (Cayman Islands and TCI), fixed service providers charge one price for the first minute, then a lower per-minute price for subsequent minutes; in these cases, an average per minute price for the first three minutes was used for benchmarking purposes.

<sup>22</sup> In cases where different prices are charged for making calls to a mobile network outside the ownership of the fixed network, the price for calls to the third-party mobile network was used for benchmarking purposes.

Table 8: Fixed-to-Fixed and Fixed-to-Mobile calling prices (Peak, USD/minute)					
Country	Operator	Web Address	Name of Post Paid Plan	Fixed-Fixed	Fixed-Mobile
identical)					
St. Kitts & Nevis	Lime	<a href="http://www.time4lime.com/kn/personal/landline/plans.jsp">http://www.time4lime.com/kn/personal/landline/plans.jsp</a>	Residential Telephone line rental	0.028	0.226
St. Lucia	Lime	<a href="http://www.time4lime.com/lc/personal/landline/plans.jsp">http://www.time4lime.com/lc/personal/landline/plans.jsp</a>	Residential Telephone line rental	0.028	0.226
St. Vincent	Lime	<a href="http://www.time4lime.com/vc/personal/landline/plans.jsp">http://www.time4lime.com/vc/personal/landline/plans.jsp</a>	Residential Telephone line rental	0.032	0.261
Trinidad & Tobago	TSTT	<a href="http://www.tstt.co.tt/">http://www.tstt.co.tt/</a>	Residential local rates	0.062	0.125
Turks & Caicos	Lime	<a href="http://www.time4lime.com/tc/personal/landline/plans.jsp">http://www.time4lime.com/tc/personal/landline/plans.jsp</a>	Residential Telephone line rental	0.063	0.460

**Retail Calling and MTR Analysis**

Figures 8 and 9 show the relationship between retail fixed-to-fixed and mobile calling prices and MTRs for the 13 Caribbean Jurisdictions plus TCI.

Figure 8 shows that fixed-to-mobile “off-net” call prices are correlated with the level of the MTR – i.e., off-net call prices tend to be lower when the underlying MTR is lower.

Figure 9 shows that the ratio of “off-net” fixed-to-mobile to fixed-to-fixed pricing is higher in countries with higher MTRs. This is consistent with the expectation that allocative efficiency and competition are promoted by lowering MTRs.

