



**Reference Offer Orders on Bahrain Telecommunications
Company B.S.C., Viva Bahrain B.S.C, and Zain Bahrain B.S.C.
setting the regulated call termination rates**

***Regulation of Wholesale International Inbound Call Services and Review of Call
Termination Rates***

**Final Document
issued by
the Telecommunications Regulatory Authority**

17 September 2015

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Public Version

(Confidential information has been replaced by [X])

Purpose: To set the regulated call termination rates in the Reference Offers of Batelco, Zain and Viva.

Regulation of WIICS and Review of Call Termination Rates
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REFERENCE OFFER ORDER ON BAHRAIN TELECOMMUNICATIONS COMPANY B.S.C. (the “Batelco Order”)

1. Pursuant to:
 - a. The exercise of its powers under Articles 3(b), 3(c)(1) and 57(b) of Legislative Decree No. 48 for the year 2002 promulgating the Telecommunications Law (the ‘Law’);
 - b. The Dominance in Interconnection Markets determination issued on 9 August 2003 (ref: ERU/D E/005); and the Dominance designation for termination services on individual mobile networks issued on 1 February 2010 (ref: MCD/02/10/010); and
 - c. The reasoning set out in Annex A to this Batelco Order which Annex A forms an integral part of this Batelco Order.
2. The Telecommunications Regulatory Authority (‘the Authority’) hereby orders the charges as detailed in the following table to be implemented by Bahrain Telecommunications Company B.S.C. (‘Batelco’). The Authority’s decisions regarding the charges must be reflected in Batelco’s Reference Offer (‘RO’) within 10 working days following the date of issuance of this Batelco Order. Batelco shall duly notify all its wholesale customers and the Authority of the new charges and their associated implementation dates within 2 working days following the date of issuance of this Batelco Order.

	From: 1 October 2015 To: 30 September 2016	From: 1 October 2016 To: 30 September 2017	From: 1 October 2017 onwards
Mobile termination rate for domestically originated calls i.e. with Bahrain CLI (in fils per minute, chargeable per second)			
Mobile termination rate	4.50	3.30	2.40
Mobile termination rate for internationally originated calls or for originated calls with absent or unclear CLI (in fils per minute, chargeable per second)			
Mobile termination rate	37.68		
Fixed termination rate for domestically originated calls i.e. with Bahrain CLI (in fils per minute, chargeable per second)			
Fixed termination rate	1.92	1.38	1.02
Fixed termination rate for internationally originated calls (in fils per minute, chargeable per second) or for originated calls with absent or unclear CLI			
Fixed termination rate	30.12		

Compliance

3. Batelco shall comply with the terms of this Batelco Order. Failure to comply with the terms of this Batelco Order may constitute a material breach of the Law and may consequently be subject to enforcement action pursuant to the relevant provisions of the Law.

Entry into force

4. This Batelco Order is effective on the date of its issuance.
5. The charges shall apply from 1 October 2015 and subsequent years as indicated in the above table.
6. This Batelco Order is without prejudice to any further orders, regulations and determinations that the Authority may consider necessary pursuant to its powers and duties under the Law.

Signed on 17 September 2015



Mohammed Bubashait

General Director

Telecommunications Regulatory Authority

Manama, Kingdom of Bahrain

REFERENCE OFFER ORDER ON VIVA BAHRAIN B.S.C. (the “Viva Order”)

1. Pursuant to:
 - a. The exercise of its powers under Articles 3(b), 3(c)(1) and 57(b) of Legislative Decree No. 48 for the year 2002 promulgating the Telecommunications Law (the ‘Law’);
 - b. The Dominance designation for termination services on VIVA’s mobile network issued by the Authority on 16 May 2013 (ref: MCD/05/13/044); and
 - c. The reasoning set out in Annex A to this Viva Order which Annex A forms an integral part of this Viva Order.
2. The Telecommunications Regulatory Authority (‘the Authority’) hereby orders the charges as detailed in the following table to be implemented by Viva Bahrain B.S.C. (‘Viva’). The Authority’s decisions regarding the charges must be reflected in Viva’s Reference Offer (‘RO’) within 10 working days following the date of issuance of this Viva Order. Viva shall duly notify all its wholesale customers and the Authority of the new charges and their associated implementation dates within 2 working days following the date of issuance of this Viva Order.

	From: 1 October 2015 To: 30 September 2016	From: 1 October 2016 To: 30 September 2017	From: 1 October 2017 onwards
Mobile termination rate for domestically originated calls i.e. with Bahrain CLI (in fils per minute, chargeable per second)			
Mobile termination rate	4.50	3.30	2.40
Mobile termination rate for internationally originated calls or for originated calls with absent or unclear CLI (in fils per minute, chargeable per second)			
Mobile termination rate	37.68		

Compliance

3. Viva shall comply with the terms of this Viva Order. Failure to comply with the terms of this Viva Order may constitute a material breach of the Law and may consequently be subject to enforcement action pursuant to the relevant provisions of the Law.

Entry into force

4. This Viva Order is effective on the date of its issuance.
5. The charges shall apply from 1 October 2015 and subsequent years as indicated in the above table.
6. This Viva Order is without prejudice to any further orders, regulations and determinations that the Authority may consider necessary pursuant to its powers and duties under the Law.

Signed on 17 September 2015



Mohammed Bubashait

General Director

Telecommunications Regulatory Authority

Manama, Kingdom of Bahrain

REFERENCE OFFER ORDER ON ZAIN BAHRAIN B.S.C. (the “Zain Order”)

1. Pursuant to:
 - a. The exercise of its powers under Articles 3(b), 3(c)(1) and 57(b) of Legislative Decree No. 48 for the year 2002 promulgating the Telecommunications Law (the ‘Law’);
 - b. The Dominance designation for termination services on individual mobile networks issued on 1 February 2010 (ref: MCD/02/10/010); and
 - c. The reasoning set out in Annex A to this Zain Order which Annex A forms an integral part of this Zain Order.
2. The Telecommunications Regulatory Authority (‘the Authority’) hereby orders the charges as detailed in the following table to be implemented by Zain Bahrain B.S.C. (‘Zain’). The Authority’s decisions regarding the charges must be reflected in Zain’s Reference Offer (‘RO’) within 10 working days following the date of issuance of this Zain Order. Zain shall duly notify all its wholesale customers and the Authority of the new charges and their associated implementation dates within 2 working days following the date of issuance of this Zain Order.

	From: 1 October 2015 To: 30 September 2016	From: 1 October 2016 To: 30 September 2017	From: 1 October 2017 onwards
Mobile termination rate for domestically originated calls i.e. with Bahrain CLI (in fils per minute, chargeable per second)			
Mobile termination rate	4.50	3.30	2.40
Mobile termination rate for internationally originated calls or for originated calls with absent or unclear CLI (in fils per minute, chargeable per second)			
Mobile termination rate	37.68		

Compliance

3. Zain shall comply with the terms of this Zain Order. Failure to comply with the terms of this Zain Order may constitute a material breach of the Law and may consequently be subject to enforcement action pursuant to the relevant provisions of the Law.

Entry into force

4. This Zain Order is effective on the date of its issuance.
5. The charges shall apply from 1 October 2015 and subsequent years as indicated in the above table.
6. This Zain Order is without prejudice to any further orders, regulations and determinations that the Authority may consider necessary pursuant to its powers and duties under the Law.

Signed on 17 September 2015



Mohammed Bubashait

General Director

Telecommunications Regulatory Authority

Manama, Kingdom of Bahrain

Regulation of WIICS and Review of Call Termination Rates
ANNEX A – Reasoning



هيئة تنظيم الاتصالات
Telecommunications Regulatory Authority
Kingdom of Bahrain – مملكة البحرين

**Reference Offer Orders on Bahrain Telecommunications
Company B.S.C., Viva Bahrain B.S.C, and Zain Bahrain B.S.C.**

*Regulation of Wholesale International Inbound Call Services and Review of Call
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ANNEX A – Reasoning

Regulation of WIICS and Review of Call Termination Rates

ANNEX A – Reasoning

List of acronyms and definitions

Batelco	Bahrain Telecommunications Company B.S.C.
BD	Bahraini Dinar
BU	Bottom-Up
Cpm	cents per minute (United States Dollar)
CLI	Calling Line Identification
CPP	Calling Party Pays
fpm	files per minute
GCC	Gulf Cooperation Council
IDD	International Direct Dialling
IOT	Inter-Operator Tariff
ISC	Interconnect Specific Cost
ISL	International Services Licence
ISR	International Settlement Rate
LRIC	Long Run Incremental Cost
MNO	Mobile Network Operator
MTR	Mobile Termination Rate
OLO	Other Licensed Operator
PSTN	Public Switched Telephone Network
RAO	Reference Access Offer
RIO	Reference Interconnection Offer
RO	Reference Offer
RPP	Receiver Party Pays
SDR	Special Drawing Right
TD	Top Down
USD	United States Dollar
Viva	Viva Bahrain B.S.C.
WIICS	Wholesale International Inbound Call Services
Zain	Zain Bahrain B.S.C.

Regulation of WIICS and Review of Call Termination Rates

ANNEX A – Reasoning

1 Introduction

1. In September 2012, the Telecommunications Regulatory Authority (“the Authority”) issued a Regulation on Wholesale International Inbound Telecommunications Services¹ on 18 September 2012 (the “Regulation”).² According to Article 3 of the Regulation:
 - a. All Licensed Operators providing Wholesale International Inbound Call Services (“WIICS”) to foreign operators are subject to a price floor in article 3(b) of this Regulation.
 - b. The price floors for WIICS supplied by Licensed Operators to foreign operators is set at the following:
 - i. 12 fils per minute for calls to Fixed Subscribers; and
 - ii. 22 fils per minute for calls to Mobile Subscribers
 - c. The price floors may be subject to review and subsequent adjustment.
2. The Regulation set above-cost price floors for wholesale international conveyance and termination services which are supplied by Bahrain Licensed Operators to foreign operators. Such price floors were introduced to enable Bahrain Licensed Operators to retain profits on such services within Bahrain, as the reductions in wholesale prices that had been observed had not been passed through by foreign operators into lower retail prices for calling Bahrain.³ The Authority therefore concluded that foreign operators had been able to retain the increased margins arising from lower wholesale costs, resulting in minimal benefit to end-users in Bahrain.
3. On 11 September 2014, the Authority informed those licensees holding an International Services Licence issued by the Authority, stating that it had commenced a review of the Regulation in order to ascertain whether it has been effective in terms of retaining economic profit within Bahrain. The Authority sought the views of ISL holders on the effectiveness of the Regulation, and requested specific information under Article 53 on the supply of WIICS. The information and views received were summarised taken into consideration by the Authority in the consultation document.
4. The consultation document was subsequently published on 23 April 2015 and opened to responses from the operators. The Authority received responses from Batelco, Etisalmc, Kalaam, Mena, Viacloud and Viva.
5. The Authority has considered these responses and now presents its analysis and final conclusions on the questions posed in the consultation document. This final version of the

¹ “Resolution No. (3) of 2012 Promulgating the Regulation on Wholesale International Inbound Telecommunications Services”, issued on 18 September 2012.

² The Regulation defines a Wholesale Inbound Service as “an international conveyance and termination Telecommunications service provided by a Licensed Operator for the purpose of the conveyance and termination of an international telephone call originating from a country outside of the Kingdom of Bahrain to a Fixed Subscriber or Mobile Subscriber in the Kingdom of Bahrain.”

³ See paragraphs 92 and 93 of the Explanatory Note to the Wholesale Inbound Services Regulation (ref: MCD/09/12/126, 27 September 2012), see also Table 1 below for the current situation.

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reasoning therefore presents the Authority's decisions on the regulation of the WIICS market and the setting of domestic call termination rates in Bahrain.

6. This document is structured in two parts as follows:

a. **Part A – Regulatory treatment of international inbound calls:**

- i. **section 2.1** provides the relevant background on the supply of WIICS to foreign operators, specifically describing the relevant services and summarises the existing Regulation applying to WIICS;
- ii. **section 2.2** provides an overview of the WIICS market, including information on the traffic, revenues and wholesale rates relating to the supply of WIICS (based on operator responses to the Authority's Article 53 information request);
- iii. The Authority then summarises operators' comments on the overview provided in **section 2.2** and provides its analysis and final conclusions on the description of the WIICS market;
- iv. **section 2.3** contains the Authority's analysis of the key issues with the current Regulation, and discusses a number of alternative options for generating an economic benefit for Bahrain;
- v. **section 2.4** sets out the Authority's preliminary conclusions on the implications of potential regulatory treatment of the WIICS; and
- vi. The Authority then summarises operators' comments on the options presented in **sections 2.3 and 2.4**, and provides its analysis and final decision on the regulatory treatment of the WIICS.

b. **Part B – Reduction of domestic call termination rates:**

- i. **section 3.1** provides the relevant background on the price regulation of call termination services;
- ii. **section 3.2** provides the Authority's justifications for using the bottom-up cost models for the purpose of setting call termination rates
- iii. **section 3.3** sets out the approach followed by the Authority to derive the proposed glide path for the reduction of mobile termination rate that will apply to domestic traffic;
- iv. **section 3.4** covers the proposed glide path for the reduction of Batelco's fixed termination rate with respect to domestically originated calls; and
- v. The Authority then summarises operators' comments on the options presented in **Part B** and provides its analysis and final decision on the fixed and mobile termination rates as well as the means of their implementation.

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2 Part A – Regulatory treatment of international inbound calls

2.1 Background

7. WIICS are supplied by fixed and mobile network operators in Bahrain to terminate calls that are made from subscribers in foreign countries to subscribers in Bahrain. The international inbound calls are originated on the foreign network, with the foreign network operator handing the call over to a Bahraini Licensed Operator, who then conveys the call into Bahrain using international facilities and links into Bahrain. The call is then terminated by the network operator (fixed or mobile) of the call recipient in Bahrain.
8. Figure 1 below is a generic representation of the supply of WIICS and international call termination services in respect of a call from a foreign operator to a fixed or mobile subscriber in Bahrain. The retail international outgoing call is initiated by a subscriber of the foreign operator, for example, BT in the United Kingdom. In order to provide the retail call service (Service 3 shown in Figure 1 below), BT purchases WIICS (“Service 2 shown in Figure 1 below) from a Bahrain Licensed Operator, and hands the call over at an agreed international handover point.⁴ The Bahraini Licensed Operator carries the call into Bahrain, and terminates the call on the network to which the call recipient subscribes.
9. Where the operator supplying the wholesale inbound service differs from the operator terminating the call, the former will purchase call termination service (Service 1” shown in Figure 1 below) from the latter.⁵

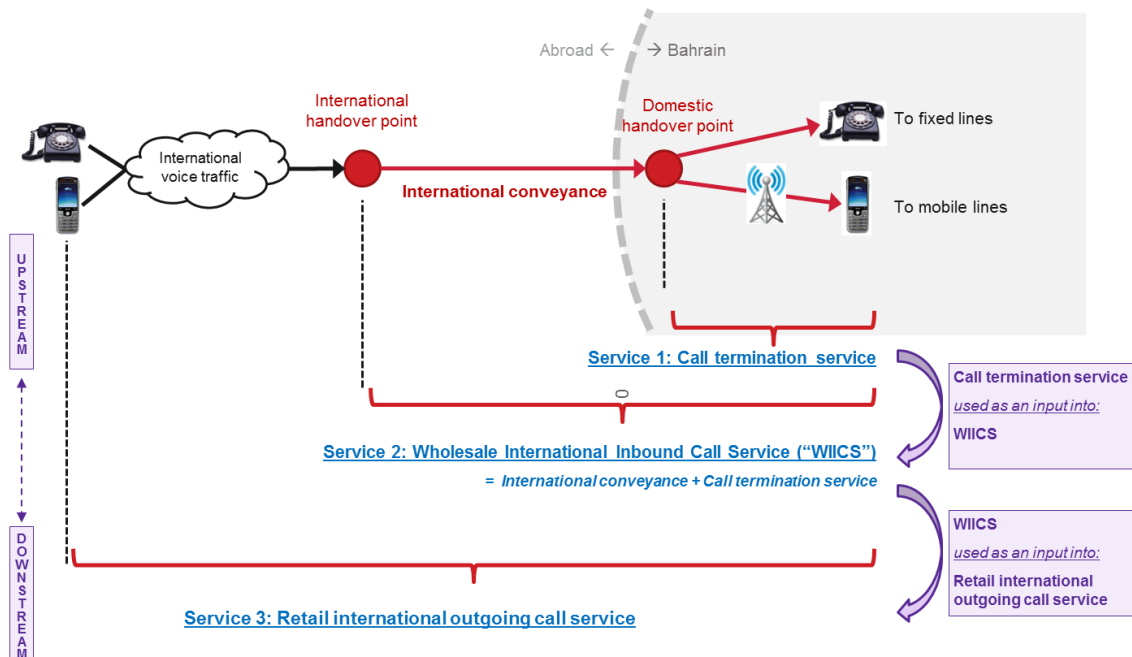
⁴ The international handover point is often the notional mid-point of an international facility.

⁵ Where the operator supplying the wholesale inbound service also terminates the call, a wholesale Call Termination Service is not explicitly involved, although the underlying network elements involved in terminating the call will be similar.

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Figure 1: International inbound call supply chain



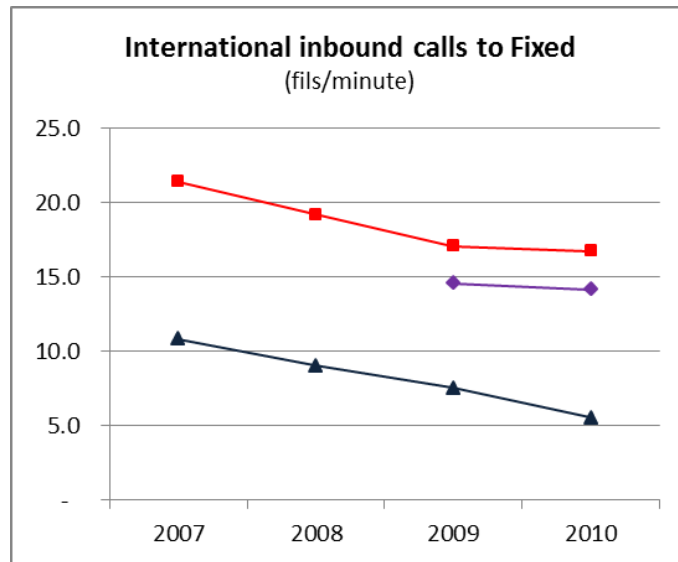
Source: the Authority

10. Call termination is a bottleneck input and is currently subject to cost-based regulation in Bahrain. Call termination is supplied by a network operator to other operators that compete in the supply of downstream wholesale inbound services to foreign operators. Such competitors rely on the call termination service in order to be able to complete incoming calls, and combine call termination with the international facilities across which such calls are brought into Bahrain.
11. Prior to 2010, Batelco's regulated termination rate that applied to international inbound traffic was higher than Batelco's regulated termination rate that applied to domestic traffic. This 'buffer' had been gradually diminishing over time. In July 2010, the regulated rates for international inbound call termination on Batelco's fixed and mobile networks were set at the same level as Batelco's domestic termination rates (i.e. the buffer was removed). This reflects the fact that the international inbound termination service is the same as the domestic call termination service, with the same network elements involved.
12. During 2012, the Authority investigated whether the benefits from lowering the termination rate on international inbound traffic had accrued to Bahrain or had been retained by the foreign operator. The reduction in termination rates applying to international calls to Bahrain had resulted in lower wholesale inbound rates paid by foreign operators – in other words, the reduction in the wholesale price for the "Service 1: Call termination service" shown in Figure 1 above had flowed through into a lower wholesale price for the "Wholesale International Inbound Call Service". This can be seen from Figure 2 and Figure 3, which summarise the reductions in the wholesale prices charged by a number of Bahrain Licensed Operators for the WIICS in respect of international calls to fixed and mobile subscribers during the period from 2007 to 2010 (based on information gathered as part of the Authority's previous investigation).

Regulation of WIICS and Review of Call Termination Rates

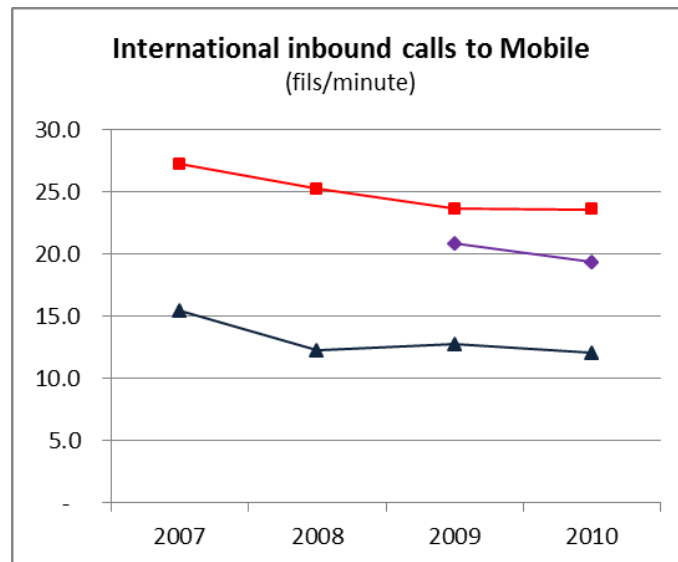
ANNEX A – Reasoning

Figure 2: Prices for WIICS – Calls to Fixed



Source: the Authority

Figure 3: Prices for WIICS – Calls to Mobile



Source: the Authority

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13. The wholesale inbound rates received by Bahraini licensed operators for calls to Bahrain are now considerably lower than the wholesale outbound rates paid by Bahraini licensed operators for calls to the other GCC countries. This is summarised in Figure 4 and Figure 5 in respect of calls to fixed and calls to mobile respectively.⁶

Figure 4: Wholesale Outbound and Inbound Rates – Calls to Fixed – November 2014

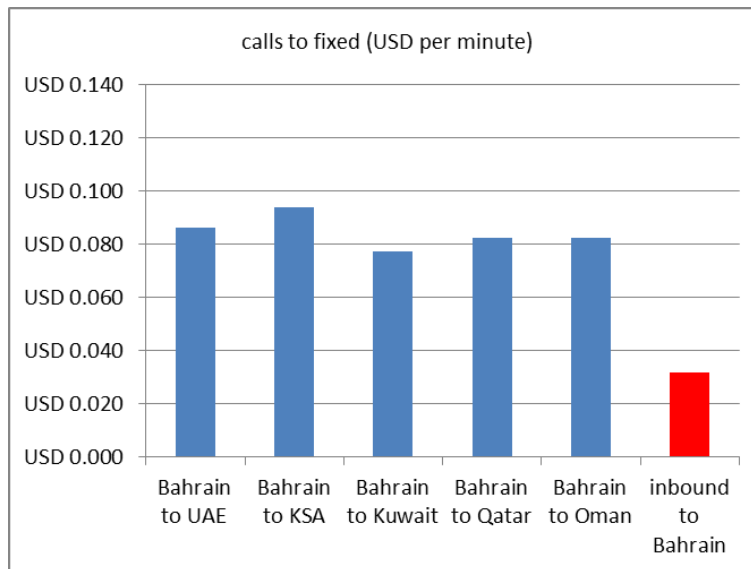
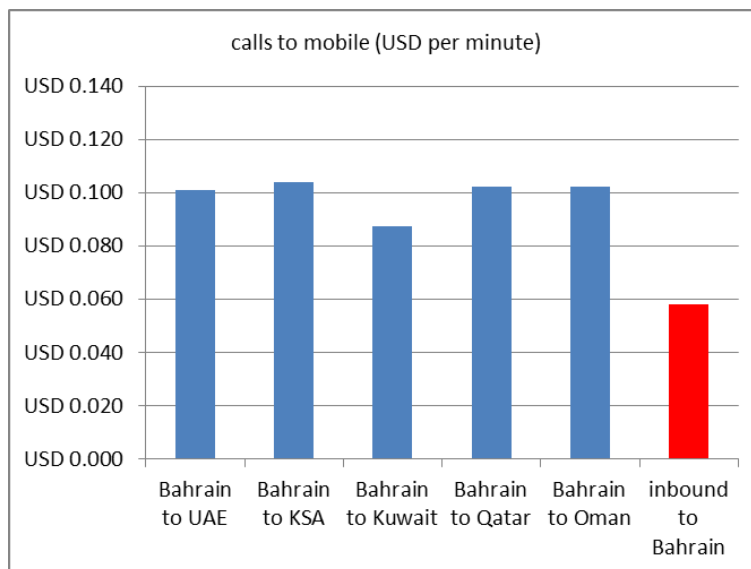


Figure 5: Wholesale Outbound and Inbound Rates – Calls to Mobile – November 2014



Source: average rates based on operators data (as of 17 November 2014)

⁶ The outpayment rates shown in the figures for calls from Bahrain to the other GCC destinations are based on an average of the outpayment rates provided to the Authority.

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14. However, while there is some evidence that non-GCC operators have passed these lower wholesale rates through into lower retail prices for calling Bahrain (and in so doing have created some benefit for end users in Bahrain), the lack of retail price differentiation by GCC operators (who account for the majority of international inbound traffic into Bahrain) indicated that the GCC operators have retained the resulting margins earned on calls to Bahrain. This continues to be the case today, with GCC operators typically charging uniform retail prices to other GCC countries, despite the lower wholesale costs for calls to Bahrain (see Table 1).

Table 1: Retail Intra-GCC Call Prices (local currency, as of end of 2014)

		Bahrain	Kuwait	Oman	Qatar	KSA	UAE	
calls from	Kuwait	Ooredoo postpaid	0.150		0.150	0.150	0.150	0.150
		Ooredoo prepay	0.155		0.155	0.155	0.155	0.155
		Viva postpaid	0.140		0.140	0.140	0.140	0.140
		Viva prepaid	0.145		0.145	0.145	0.145	0.145
	Oman	Omantel	0.150/0.085	0.150/0.085		0.150/0.085	0.150/0.085	0.150/0.085
		Nawras	0.119/0.069	0.119/0.069		0.119/0.069	0.119/0.069	0.119/0.069
	Qatar	Ooredoo (std)	0.99	0.99	0.99		0.99	0.99
		Ooredoo (lowest)	0.45	0.45	0.45		0.45	0.45
		Vodafone postpaid	0.66	0.66	0.66		0.66	0.66
		Vodafone prepaid	0.99	0.99	0.99		0.99	0.99
	KSA	Mobily	1.1	1.1	1.1	1.1		1.1
		STC	1.3/1.1	1.3/1.1	1.3/1.1	1.3/1.1		1.3/1.1
	UAE	Etisalat	2.12/1.37	2.12/1.37	2.12/1.0	2.12/1.37	2.12/1.37	
		Du	2.4	2.4	2.4	2.4	2.4	

Source: Operator websites

15. In these circumstances, the Authority concluded that it would be appropriate to introduce a price floor for wholesale inbound services supplied to all foreign operators. The Authority considered that such a price floor, combined with cost-based call termination, would ensure that some economic surplus would be retained within Bahrain, and that Bahrain Licensed Operators would be able to compete for such surpluses by having cost-based access to the essential call termination input.
16. In light of the above reasoning, the Authority concluded in 2012 that the following would best satisfy the duties to promote effective and fair competition and protect the interests of end users in Bahrain:
- a. cost-based termination rates for international inbound traffic (i.e. cost-based rates for the “Call access termination service” shown in Figure 1 above);

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- b. price floors applying to all Bahraini Licensed Operators for wholesale inbound services (i.e. price floors for the WIICS shown in Figure 1):
 - i. 12 fils per minute for calls to fixed subscribers in Bahrain; and
 - ii. 22 fils per minute for calls to mobile subscribers in Bahrain.
17. The price floors in paragraph 16.b above were introduced by way of Regulation.
18. The current Regulation allows Bahraini Licensed Operators to earn and retain profit margins on the supply of WIICS to foreign operators. The Authority estimates that the profit margins available from supplying WIICS, given the existing price floors (12 fils/minute for calls to fixed and 22 fils/minute for calls to mobile), are approximately 45%-55% (i.e. the margin expressed as a percentage of the WIICS price floors).⁷
19. The purpose of the price floors in the existing Regulation is to limit the extent to which competition between Bahraini Licensed Operators in the supply of WIICS erodes the above profit margins. The price floors are designed to protect those margins and allow them to be retained within Bahrain, rather than 'exported' to the foreign operators who acquire WIICS in order to complete their retail calls into Bahrain.

2.2 Market overview of WIICS

20. On 11 September 2014, the Authority issued an Article 53 request to ISL holders, in which the following information was sought:
 - a. specific data relating to the supply of WIICS into Bahrain over the period 2010-2013, including inbound traffic, wholesale revenues, wholesale inbound rates, and wholesale termination rates applying to international inbound traffic; and
 - b. views on the effectiveness of the current Regulation in achieving the objective of retaining economic profit within Bahrain.

2.2.1 International inbound traffic

21. Based on the responses, seven ISL holders conveyed a total of 281,061,368 international inbound minutes into Bahrain and terminating on fixed and mobile networks during 2013. This represented a reduction of -7.8% compared to the volume of international inbound minutes terminated in Bahrain in 2012.
22. Batelco was the main supplier of wholesale inbound services in 2013, carrying [X]% of total wholesale inbound minutes. Viva and Zain were the next main suppliers, accounting for [X]% and [X]% respectively. The other ISL holders collectively accounted for less than 10% of the total, with Etisalcom and Kalaam being the main smaller suppliers.

⁷ These margins are based on the respective termination rates for fixed and mobile calls, plus the cost of the international network elements that are used by the international inbound services.

Regulation of WIICS and Review of Call Termination Rates

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23. A significant proportion of the minutes conveyed into Bahrain by Batelco are terminated on Batelco's own fixed and mobile networks, but Batelco also conveys substantial volumes for termination on the other 2 mobile networks. For example, of the total volume of wholesale inbound minutes carried into Bahrain by Batelco in 2013, more than [X]% terminated on the mobile networks of Viva and Zain. By comparison, less than [X]% of Etisalcom's inbound traffic terminated on Viva or Zain in 2013.
24. In terms of terminating international inbound traffic, of the 281 million international minutes terminating in Bahrain in 2013,
- a. 250.0 million minutes i.e. the majority of international inbound minutes conveyed into Bahrain during 2013 terminated on mobile networks (90%):
 - i. [X] million minutes ([X]%) terminated on Viva's mobile network;
 - ii. [X] million minutes ([X]%) terminated on Batelco's mobile network;
 - iii. [X] million minutes ([X]%) terminated on Zain's mobile network;
 - b. 27.9 million minutes (10%) terminated on fixed networks (mainly Batelco).
25. Of the total international inbound minutes terminating on each of Viva's and Zain's networks, Batelco accounts for a relatively high proportion. For example, during 2013, Viva terminated [X] million international inbound minutes from other Bahraini ISL holders, of which in excess of [X]% were from Batelco. A similar proportion was evident in respect of international minutes terminating on Zain's networks. This is likely to reflect the relatively high termination rates charged by both Viva and Zain in respect of international minutes handed over by non-Batelco ISL holders.⁸

2.2.2 Wholesale revenues

26. Total revenues earned from WIICS in 2013 amounted to BD5.79 million, an increase of 36% compared to 2012 (BD4.25 million). Of the 2013 total revenue, BD5.46 million (94%) was from calls to mobile and BD0.33 million was from calls to fixed.
27. The introduction of the WIICS price floors in Q4 2012 appears to have increased quarterly revenues for the licensed operators in Bahrain, as shown in Figure 6.⁹ Although the total volume of international minutes terminating in Bahrain declined by -7.8% between 2012 and 2013, wholesale revenues increased by 36%. Between Q3 2012 and Q4 2012, when the price floors were introduced, quarterly revenues earned by ISL holders from wholesale inbound services increased by 73%, while international inbound volumes increased by 9%.

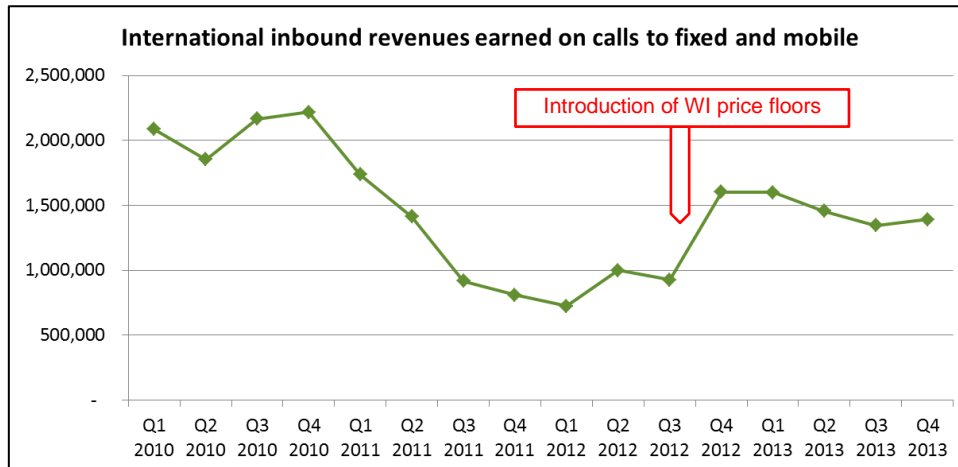
⁸ As discussed below, this was one issue raised by the smaller ISL holders in their response to the Authority's Article 53 request.

⁹ The Authority acknowledges that the wholesale inbound revenue figures are based on responses to the Article 53 request. The Authority notes the claims made by several operators that the price floors have not been complied with. To the extent that this is correct, the reported revenue figures may overstate actual revenues earned from the supply of wholesale inbound services.

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ANNEX A – Reasoning

Figure 6: WIICS revenues (quarterly)



Source: data from Bahrain operators

2.2.3 WIICS rates and call termination rates

28. In terms of average revenue per minute earned from conveying calls into Bahrain:
- The average wholesale inbound revenue per minute for calls to fixed was 12.0 fils per minute (fpm) in 2013 (compared to the price floor of 12 fpm);
 - The average wholesale inbound revenue per minute for calls to mobile was 21.8 fpm in 2013 (compared to the price floor of 22 fpm).
29. As a preliminary check, this indicates that the price floors have generally been complied with, although some operators have alleged that the price floors are not always observed.¹⁰
30. According to the responses to the Authority's Article 53 request, Viva and Zain both charge relatively high rates to non-Batelco operators for terminating international inbound calls. Batelco is the only operator who has been charging the cost-based rate for terminating all international inbound traffic. This is 2.7 fpm for calls to fixed, and 6.4 fpm for calls to mobile in 2013.
31. By contrast, Zain charges Batelco [X] fpm for terminating international inbound traffic on its mobile network (which was the regulated mobile termination rate ('MTR') in 2010 when Zain was found to be dominant), but charges other ISL holders between [X] fpm and [X] fpm. Viva charges Batelco [X] fpm ([X]) for terminating international inbound traffic on its mobile network, but charges other ISL holders between [X] fpm and [X] fpm.
32. As a result, non-Batelco ISL holders have been unable to directly terminate much international inbound traffic destined for Zain or Viva's subscribers.

¹⁰ See later summary of views on the effectiveness of the current Regulation.

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2.2.4 Views of ISL holders on the effectiveness of the current Regulation

33. The following section summarises the main points raised by respondents to the Article 53 request, in relation to the effectiveness of the current Regulation.
34. Several respondents claimed that other operators had not been complying with the price floors. These claims were based on feedback received from their international partners, which indicated that the price floors were too high compared to rates offered by other operators. According to one of the mobile network operators¹¹, other operators have been able to convey international traffic into Bahrain at below the price floors, as they only have to pay the cost-based domestic termination rate on such traffic. Another mobile operator claimed that the non-complying operators appear to be ISL holders who do not hold a national fixed/fixed wireless or mobile licence.
35. One respondent alleged that the mobile network operators have been able to leverage their high outbound IDD volumes in order to strike ‘swap’ deals with international carriers. Under such deals, the mobile network operators can offer to pay high outbound rates on their IDD traffic, subsidizing these rates through above-cost termination of inbound traffic.
36. According to one operator, Batelco is the only operator who offers international termination at the rate set in the Reference Offer. While Viva and Zain each have reciprocal rates with Batelco, they charge OLOs high termination rates for international inbound traffic. Viva and Zain ask Batelco to separate OLO transit traffic so that they can apply the higher termination rates to that traffic.
37. The smaller OLOs generally support price floors which, according to them, if properly enforced, would be the most effective means of retaining economic profit within Bahrain.
38. One of the larger operators submitted that the price floors paid by foreign operators should be increased to match the other GCC countries (USD0.08 per minute for fixed and USD0.10 per minute for mobile); and that the termination rates applying to international traffic into Bahrain should be set at a higher rate than the local termination rates (specifically, at USD0.07 per minute for fixed and USD0.09 per minute for mobile).
39. Another mobile operator claimed that the gap between the price floors (12 fils for fixed and 22 fils for mobile) and the domestic termination rate (6.378 fils for mobile) has resulted in illegal ‘refilling’ by local operators, whereby the international Calling Line Identification (“CLI”) number is being replaced with local CLI in order to disguise the call, which has implications for security and customer experience. To address this, the operator submitted that the termination rate for international inbound traffic should be increased to the same level as the regulated rates into Bahrain, as this will eliminate the arbitrage opportunities and be more effective in retaining economic benefit within Bahrain. This will also address national security concerns associated with masking/missing CLI and rerouting calls into other networks.

¹¹ In this document, the terms “mobile network operators” and “mobile operators” are used interchangeably and mean those licensees holding an Individual Mobile Telecommunications Licence.

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40. One respondent proposed to set a margin between the rate for the wholesale inbound service and the termination rate for international inbound calls of no more than 20%. According to the respondent, such an approach would eliminate the incentive to circumvent the price floor, and would repatriate more economic surplus back to Bahrain licensed operators.

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Summary of submissions on the description of the WIICS market

Description of the WIICS market

Q1. Do you have any comments with regard to the Authority’s description of the WIICS market? What about the views of ISL holders on the effectiveness of the current Regulation? Please elaborate.

Summary of stakeholders’ submissions

General comments

Batelco, Viva and Zain

Batelco, Viva and Zain do not have any major comments on this section of the Consultation.

Kalaam

Kalaam questions how smaller ISL operators, which generate 10% of the overall traffic into Bahrain, can have caused a “massive swing” in the Bahraini economic market.

Kalaam does not believe that the Bahraini market should be compared to other GCC markets given the Bahraini market’s competitive nature.

Mena

Mena agrees with the Authority’s description of the WIICS market. However, Mena urges the Authority to introduce measures that would allow it to verify the effectiveness of regulation.

Viacloud

Viacloud questions how smaller WIICS operators could cause a “massive swing” in economic profit given they have a collective termination market share of less than 10%.

Viacloud suggests that increasing international termination rates will increase the

The Authority’ analysis and responses

General comments

The Authority notes that Batelco, Viva and Zain do not make any major comments on this section of the consultation.

Kalaam and Viacloud both question how smaller WIICS operators could cause a “massive swing” in profits given that they have a share of less than 10%.

It is unclear to the Authority what specific swing in profits Kalaam and Viacloud are referring to. Nevertheless, it interprets this as a comment about the increase in profits under Option 1. If this is the case, the Authority believes that Kalaam and Viacloud have misunderstood the proposed change. The so-called “swing” is not the result of a reallocation of profits between operators.

Rather, it is the increase in termination rate which increases revenues disproportionately compared to costs. This is because operators terminating most traffic on their own network also carry those minutes on the WI link. Thus, although the higher termination rate increases the revenues earned on every minute carried, the costs incurred remain largely the same as before for operators terminating traffic on their own network. The higher revenues and unchanged costs therefore result in the “swing” in profits.

However, as mentioned earlier, Kalaam and Viacloud’s comment was not entirely clear to the Authority and cannot therefore be addressed beyond the explanation above.

Regarding Mena’s point on enforcement, the Authority will endeavour to ensure that

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price to end users, and thus encourage outbound calling, further reducing the international termination volume to Bahrain in the long term.

the all regulation is enforced and implemented by all operators.

The Authority does not see how increasing the international termination rate would affect outbound calls because this change would have no impact on the pricing structure of outgoing international calls. Furthermore, the Authority expects that increasing the termination rate should not have a large impact on inbound termination traffic from other GCC countries, because the GCC operators typically charge uniform retail prices to other GCC countries, despite the wholesale costs for calls to Bahrain being lower. Thus, given that these operators are already above the costs they actually incur, the risk of increasing the retail prices to reflect increases in cost resulting from higher international termination rates is lower. In any case, the Authority will continue to monitor developments in the market and intervene as necessary if there appears to be a distorting effect due to the change in regulation.

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Comments on the existing regulation

Etisalcom

Etisalcom notes that the current regulation promotes business with international operators by presenting Bahrain as a telecoms-friendly country rather than as a market controlled only by the three mobile operators. Etisalcom believes that the pricing floor should be closely monitored rather than increasing international termination rates.

Kalaam

Kalaam highlights what it believes to be a number of positive aspects of the current WIICS market such as creating favourable circumstances for both MNOs and small ISL players and promoting international wholesale relationships. Kalaam note that the existing regulation of inbound pricing has helped achieve these.

Viacloud

[X]

Below floor pricing and termination rates

Etisalcom

Etisalcom notes that ISL holders other than the three mobile operators collectively accounted for less than 10% of the total international inbound traffic. Etisalcom believes that this is due to termination rates for some mobile networks being equivalent to the pricing floor, making it impossible to sell services.

Kalaam

Kalaam claims that MNOs are quoting prices to them that are higher than the

Comments on the existing regulation

The Authority notes that Etisalcom, Viacloud and Kalaam are in favour of the current regulation. However, the Authority finds that the current regulation does not achieve the objective of retaining maximum economic profit in Bahrain and therefore does not allow these benefits to be passed on to Bahraini consumers. Instead, the profits are being retained by foreign operators. It is for this reason that the Authority is proposing a change to the current regulation and not considering Option 4 as the best means to achieve this.

It would be difficult to ensure compliance with the price floor under Option 4 as there would be an incentive for ISLs to undercut the price floor and this would be difficult for the Authority to monitor and investigate any alleged cases of non-compliance. It would therefore be difficult to achieve the objective of retaining additional profits in Bahrain.

Below floor pricing and termination rates

Etisalcom, Kalaam and Viacloud make a number of claims regarding the pricing of Mobile Network Operators ('MNOs') in relation to the price-floor.

Etisalcom, Kalaam and Viacloud provide no convincing evidence as justification of these claims. Consequently, although the Authority acknowledges these comments, it is unable address them appropriately in the absence of supporting evidence. In any case, the Authority will strive to properly enforce the new regulation, including ensuring that prices are levied in a non-discriminatory manner.

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wholesale price floor. Kalaam believes this means it is clear that the smaller operators could not have sold below the floor price.

Viacloud

Viacloud questions how smaller WIICS operators could operate below the regulated floor price when Viva and Zain charge higher termination rates to the smaller WIICS operators. Viacloud note that the data supplied by ISL license holders in response to Article 53 does not suggest prices below the floor.

[X]

Changes in the last 18 months

Kalaam

Kalaam notes that the consultation is based on data up to 2013. Kalaam believes that pricing and demand have changed significantly in the last 18 months due to OTT players and an MNO price war.

Viacloud

Viacloud notes that the consultation only covers the years up to 2013 and that there has been a significant growth in OTT and VoIP calls in the last 18 months. Viacloud believes that increased termination prices will increase the incentive to use OTT services thus further reducing termination volumes.

Changes in the last 18 months

Kalaam and Viacloud suggest that there have been significant increase in the take-up of OTT services in the last 18 months, as a result of which an increase in termination rates would lead to a further decrease in volumes. However, no evidence has been provided of this change. Moreover, as explained in paragraphs 93 to 95 below, the Authority anticipates that the increase in termination rates would unlikely cause a significant drop of international inbound traffic.

In any case, the Authority has been monitoring and will continue to monitor developments in the market and intervene if it appears that competition is being unfairly distorted.

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The Authority's conclusions on the description of the WIICS market

41. The operator's responses to the consultation have been addressed in the summary table above. For the reasons set out in the table, the Authority does not believe that the responses affect any of the findings it presented in the consultation. Therefore, the Authority's findings and description of the WIICS market remain as per the consultation document.

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2.3 Analysis of issues and identification of options

42. The legislative duties of the Authority include the protection of the interests of end-users of telecommunications services in Bahrain, and the promotion of effective and fair competition among new and existing licensed operators, as effective and fair competition ultimately benefits end-users.¹² The objective is to protect fair competition but not individual competitors *per se*. These duties, together with the pricing principles set out in Article 57 of the Telecommunications Law, are generally mutually consistent.
43. Under an orthodox regulatory decision-making framework, upon which the Telecommunications Law is based, markets are identified in which there is significant market power or dominance, and appropriate regulatory remedies are applied to ensure that the prices of key access and interconnection services are cost-based. Such cost-based prices should facilitate competition in the relevant downstream markets, which in turn will protect the interests of end users. Competitive markets deliver better outcomes for consumers than markets characterised by market power, in the form of lower prices, greater choice and quality, and more innovative services.
44. In the Explanatory Note to the current Regulation, the Authority noted that the termination rates for international inbound traffic into Bahrain had declined from 2007 to reach a cost-based level by 2010. This was a result of the Authority's decision to remove the 'buffer' which had previously applied between international and domestic termination rates. As the international inbound termination rate had fallen, competing ISL holders were able to offer lower wholesale rates to foreign operators for conveying inbound calls into Bahrain (see Figure 2 and Figure 3 above). As a consequence of this competition, the profit margins that had been earned by Batelco and other Bahraini ISL operators supplying wholesale inbound services to foreign operators had been gradually eroded.
45. The reduction in wholesale inbound rates into Bahrain has led to a situation where such wholesale rates have been lower than the corresponding inbound rates into other GCC countries (which are paid by Bahrain operators supplying outbound international calls). This is shown in Figure 4 and Figure 5 above, which compare the wholesale outpayment rates paid by Bahrain operators for outbound calls to the other GCC countries with the current wholesale inbound price floors for calls into Bahrain.
46. However, the promotion of fair and effective competition is not an end in itself, but rather a means to achieve efficient outcomes for end-users within Bahrain. In considering how Bahraini end users might have benefited from reductions in termination rates applying to international inbound calls, it is important to note that the wholesale inbound services are purchased by foreign operators. Any benefit to users in Bahrain will therefore depend on the response of these foreign operators to the reduction in wholesale inbound rates, and in

¹² Telecommunications Law, Article 3.

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particular the response of the GCC operators as most calls to Bahrain originate from the GCC countries.¹³

47. To the extent that such reductions have resulted in lower prices for making calls to Bahrain, users in Bahrain (i.e. the recipients of such calls) are likely to have received a benefit in the form of receiving a higher volume of calls than would otherwise have occurred. The provision of cheaper calls into Bahrain may be an important consideration in terms of Bahrain's attractiveness as a regional business centre.
48. However, in the case of international inbound services, the beneficiaries of the greater competition and lower wholesale inbound rates appear to have been principally the foreign operators themselves. As shown in Table 1 above, GCC operators typically set their retail prices for calls to other GCC countries at a uniform level, despite the wholesale inbound rates being lower in Bahrain than in the other GCC countries.
49. Rather than passing through the wholesale rate reductions into their retail prices for calls to Bahrain, foreign operators (particularly those in other GCC countries) have retained the wholesale rate reductions in the form of higher margins earned on calls to Bahrain. The beneficiaries of competition between Bahrain ISL holders driving down wholesale rates for inbound services have therefore been foreign operators, who are able to enjoy higher margins on retail calls into Bahrain. End-users in Bahrain have not received any benefit from competition in the supply of wholesale inbound services.
50. A trade-off therefore exists between taking steps to promote competition for inbound services (which has delivered benefits largely to foreign operators), and generating an economic benefit to Bahrain from such services. In addition, it is also important to ensure that the regulation of WIICS can be supervised and enforced.
51. Five broad regulatory options are available with respect to WIICS:
 - a. **Option 1:** removing the price floors for WIICS (i.e. repealing the current Regulation) and increasing the termination rates for international inbound traffic to the GCC caps;
 - b. **Option 2:** removing the price floors for WIICS (i.e. repealing the current Regulation) and increasing the termination rates for international inbound traffic to less than the GCC caps; and:
 - c. **Option 3:** removing the price floors for WIICS (i.e. repealing the current Regulation) and removing *ex-ante* price control on termination services in respect of calls originating internationally
 - d. **Option 4:** maintaining or increasing the price floors for wholesale inbound services, but maintaining cost-based termination rates for international inbound traffic;

¹³ According to the market statistics collected by the Authority for which a geographic breakdown of international inbound volumes is available, the majority of international inbound traffic terminating in Bahrain during 2013 was from GCC countries.

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- e. **Option 5:** removing the price floors for wholesale inbound services and maintaining cost-based termination rates for international inbound traffic.

Justifications for not considering Option 5 further

- 52. Option 5 would revert to the situation that existed in Bahrain between 2010 and 2012. Under such circumstances, competition would likely drive wholesale rates down further, which could be expected to benefit foreign operators. For this reason, this option is not considered further.

Justifications for not considering Option 4 further

- 53. The purpose of the existing Regulation was to set above-cost price floors for conveying international calls into Bahrain in order to retain profits on such calls within Bahrain. As shown in Figure 6 earlier, the introduction of the price floors in the last quarter of 2012 led to an increase in the wholesale revenues earned by Bahraini ISL operators.
- 54. The level of the existing price floors (12 fils for fixed and 22 fils for mobile) was based on average wholesale rates charged by Bahrain licensed operators in 2010, and are significantly below the price caps in the other GCC countries for international inbound calls (US8cpm (~30.15 fils) for fixed, US10cpm (~37.69 fils) for mobile).
- 55. A drawback of relying solely on price floors in order to retain economic surplus within Bahrain is that competition between ISL holders is likely to increase pressure to undercut the floors in order to gain inbound traffic. Most responses to the Article 53 request alleged that other operators were not complying with the price floors, but no evidence could be provided:
 - a. the allegations are based on feedback from international carriers, who are typically not licensed in Bahrain;
 - b. detection of any non-compliance is likely to be difficult, as ISL holders could offer additional value to foreign operators in a number of ways, such as 'swap' deals (paying a premium for outbound services) or rebates on services supplied.
- 56. Due to the inherent difficulties of ensuring strict compliance of ISL holders to the WIICS price floors, the Authority found that a price floor approach is no longer appropriate to retain additional profits in Bahrain. For this reason, Option 4 is not considered further.

Brief sum-up on the three options considered

- 57. Economic surplus might be retained within Bahrain if Bahrain network operators were allowed to charge a higher termination rate for international inbound traffic. This is considered under Option 1, Option 2 and Option 3, which are summarized in the below table:

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Table 2: Summary of the 3 options considered for the regulatory treatment of international inbound traffic

	Option 1	Option 2	Option 3
Regulatory treatment of WIICS	WIICS rates no longer subject to price floors (i.e. current Regulation is repealed)		
Regulatory treatment of call termination service	Increase call termination rates for terminating international calls to GCC Caps (30.12/37.68 fils*). Maintain cost-based termination rates for domestically originated calls	Increase call termination rates for terminating international calls to less than GCC Caps (20.10/27.60 fils* i.e. ~10 fils less). Maintain cost-based termination rates for domestically originated calls	Remove price control on call termination rates for international inbound calls. Maintain cost-based termination rates for domestically originated calls.

* Based on the exchange rate 1 USD = 0.37691 BD, USD0.08 and USD0.10 correspond to respectively 30.1528 fils and 37.691 fils. The Authority chose the nearest values that could easily be divided by 60 (i.e. chargeable per second). The same applies for the rates proposed under Option 2.
Source: the Authority

58. The Authority considers the merits of each of the three options in the following sections.

2.3.1 Increasing the termination rate for international inbound traffic to the GCC caps (Option 1)

59. From a costing and functional perspective, the termination of an international inbound call is no different from the termination of a domestic call. Consistently, the Authority has to date taken the view that the same termination rate should apply to both international inbound and domestic calls
60. In their responses to the Authority’s Article 53 request, the MNOs argued for a higher termination rate to be applied to international inbound traffic.
61. In pure principle, under an economic perspective, increasing the termination rate applying to international inbound traffic would potentially be the most effective way of retaining economic surplus within Bahrain (specifically, such surpluses would accrue to the terminating operator). This is because originating or transiting operators would have no choice but to pay the termination rate in order to have the call completed, provided that full compliance with the applicable legal and regulatory framework is ensured.¹⁴
62. Increasing the termination rate applying to international inbound traffic would also give the terminating network operator an advantage in supplying WIICS. This is because the terminating operator would incur the actual costs of termination when completing a call (which would be approximately 6 fils/minute based on the current cost-based MTR in

¹⁴ As discussed later, setting a different (higher) termination rate for international traffic compared to domestic traffic may give rise to arbitrage behaviour, whereby OLOs may try to disguise international traffic as domestic traffic in order to take advantage of the lower termination rate applying to domestic traffic. The terminating operator may be able to take steps to limit such behaviour, such as requiring CLI for terminated traffic.

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Bahrain), whereas the cost incurred by another operator for terminating the call would be the inflated termination rate. This distortion may result in the terminating operator capturing most of the international traffic bound for its network.

63. An increase in termination rates for international calls, in so far as carried out in full compliance with the existing legal and regulatory framework, would unlikely be to the detriment of Bahraini end-users:
- a. The existing evidence suggests that the proposed increase in WIICS prices would unlikely result in a significant drop in demand for international calls to Bahrain.
 - b. The increase in WIICS revenues and profits would be more likely (at least partially) passed-on to Bahraini consumers in terms of lower retail prices or through additional network investment, as long as the market for domestic telecommunications services is competitive.
 - c. Setting prices for WIICS at (or close to) the GCC cap could be argued to be a rational response to operators in the GCC countries charging similar rates to Bahraini operators for terminating international calls in their networks.
64. The potential revenue and profit impact of allowing network operators to charge higher termination rates for international inbound traffic can be estimated. In Table 3, the Authority has summarized the 2013 termination minutes and revenues earned by licensed operators in Bahrain in respect of international traffic, along with the revenues and profits that would have been earned if the termination rates had been set at the GCC caps (30.12 fils/minute for calls to fixed and 37.68 fils/minute for calls to mobile).

Table 3: Estimated revenue and profit from increasing international termination rates to GCC caps (in million BD)

	Revenues (WIICS and termination)	Termination outpayments	Termination cost	Profit
Actual (based on 2013 traffic and based on current WIICS price floors)	6.5	0.7	3.0	2.8
Option 1: increase of international termination rates to GCC caps (30.12/37.68 fils)	15.1	4.2	3.0	7.8
Incremental revenues and profit under Option 1	8.5			5.0

Source: Authority estimate, based on operator data

65. An increase in the termination rates for international inbound traffic could potentially increase revenues earned by the fixed and mobile network operators in Bahrain by up to BD8.5 million per annum and profit by up to BD5.0 million (based on 2013 traffic).
66. However, some of this revenue increase for the terminating network operators is likely to come at the expense of ISL holders who may no longer be able to compete for international inbound traffic, and would therefore lose wholesale inbound revenues. This effect would be particularly severe on the smaller ISL holders who currently supply

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international inbound services to foreign operators, but who do not terminate much international traffic on their own networks.

67. For example, during 2013, a total of 10.8 million minutes to fixed lines were conveyed into Bahrain by ISL holders for termination on another operator's fixed network; and 103.4 million minutes were conveyed into Bahrain by ISL holders for termination on another operator's mobile network. The wholesale revenues earned on these inbound minutes would potentially be at risk if the wholesale termination rate applying to these minutes were to increase significantly.
68. One implication of introducing a higher termination rate for international inbound traffic (and a lower termination rate for domestic traffic) is that the differential termination rates could give rise to the 'refiling' behaviour referred to some operators in their responses to the Authority's Article 53 request. If an international inbound call to mobile is terminated at 37.5 fils/minute and a local call to mobile can be terminated at 6 fils/minute, there will be an incentive for ISL holders conveying international traffic into Bahrain to try to disguise the calls (for example, by replacing the international CLI with local CLI).
69. Such attempts to disguise international traffic as domestic traffic (to take advantage of the lower termination rate for domestic traffic) would erode the revenue gains from higher termination rates for international inbound traffic.
70. However the Authority recognises that it would be easier to detect an operator that would 'refile' international traffic into domestic traffic than to detect an operator that offers the wholesale inbound service at prices below the set floors.

2.3.2 Increasing the termination rate for international inbound traffic to less than the GCC caps (Option 2)

71. One further scenario to consider would be to allow termination rates for international inbound traffic to increase, but not all the way to the GCC level. Once the costs of the international facilities used to convey traffic into Bahrain are allowed for, the increased termination rate would effectively create a price floor for the wholesale inbound services supplied by ISL holders.
72. In principle, this would be consistent with the proposals of several of the mobile network operators outlined in their responses to the Authority's Article 53 request, which proposed a margin between the upstream termination rate and the downstream wholesale inbound rate. Such an option would increase the termination revenues earned by the terminating network operators in Bahrain, and may also allow other ISL operators to continue to compete. The Authority notes that the network operators would be subject to the ex-post provision of the Telecoms Law (Article 65), which prohibits any anti-competitive conduct such as anti-competitive margin squeezes. As a result, the terminating operator should be in the position to maintain a sufficient margin between the upstream termination rate and

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the downstream wholesale inbound rate to recover the downstream costs (of international links) of supplying the wholesale inbound service.¹⁵

73. In considering how far to raise the termination rate for international traffic into Bahrain, the Authority has had regard to the costs of the international links. By taking the GCC caps as the maximum rate to be charged for wholesale inbound services, and deducting the costs of international links, the following 'upper bound' termination rates could be set, which would allow ISL holders to replicate the GCC caps.

Table 4: International Termination Rates based on GCC Caps (fils/minute)

	GCC Cap	International Link costs *	Termination Rate
International calls to fixed	30.12	5.0	25.12
International calls to mobile	37.68	5.0	32.68

* International Link costs based on Authority estimate
Source: the Authority

74. Setting a termination rate for international calls at slightly below these maximum rates may maintain some scope for smaller ISL holders while still delivering a significant increase in termination revenues for the network operators in Bahrain. For example, setting termination rates at 20.10 fils/min for fixed and 27.6 fils/min for mobile would increase revenues by BD5.3 million and BD2.9 million respectively (based on 2013 inbound traffic) as can be seen in Table 5 below.

Table 5: Estimated revenue from increasing international termination rates to GCC caps (in million BD)

	Revenues (WIICS and termination)	Termination outpayments	Termination cost	Profit
Actual (based on 2013 traffic and based on current WIICS price floors)	6.5	0.7	3.0	2.8
Option 2: increase of international termination rates to less than GCC caps (20.10/27.60 fils i.e. 10 fils less).	11.8	3.1	3.0	5.8
Incremental revenue and profit under Option 2	5.3			2.9

Source: Authority estimate, based on operator data

75. Figure 7 below summarises the various elements involved in conveying international inbound calls and terminating those calls on the fixed and mobile networks in Bahrain,

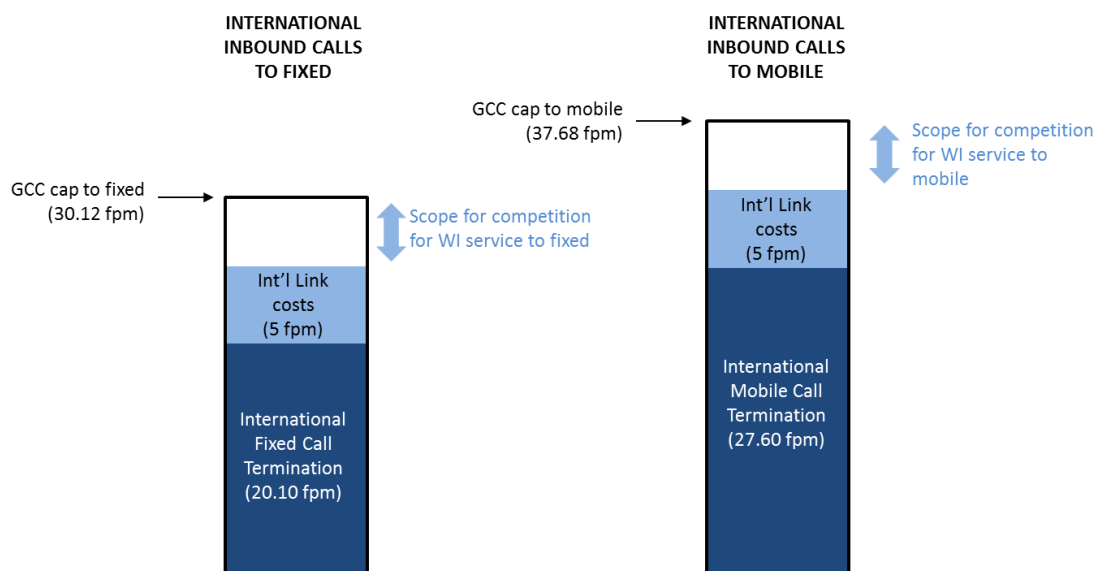
¹⁵ Specifically, when setting its wholesale inbound rate offered to foreign operators, the terminating network operator should base this rate on the actual termination rate charged to other ISL holders.

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based on a termination rate of 20.10 fils/minute for calls to fixed and 27.60 fils/minute for calls to mobile. For example, for an international call to a fixed network in Bahrain, an ISL operator would pay a termination rate of 20.10 fils/minute to the fixed network operator of the call recipient. The ISL operator will also incur some costs associated with the international links over which the call is conveyed into Bahrain. Based on an international cost of 5 fils/minute, the ISL holder would incur total costs of approximately 25.10 fils/minute when supplying wholesale inbound service (to fixed). This is likely to represent the minimum price at which such wholesale inbound services would be supplied. The GCC cap (of 30.12 fils/minute for calls to fixed) provides an upper bound for the wholesale inbound services.

Figure 7: Wholesale Rates and Costs of Supplying Wholesale Inbound Services



Source: the Authority

76. In comparing the above rates with those proposed by licensed operators in response to the Authority's Article 53 request, the Authority notes that the margin between the fixed termination rate (20.10 fils/minute) and the minimum wholesale rate for the wholesale inbound service to fixed (25.10 fils/minute) is 25%, while the corresponding margin for calls to mobile is 18% (i.e. 27.6 fils/minute for termination, and 32.6 fils/minute once the international links are included). These margins between the downstream wholesale inbound price and the upstream termination rate are similar to the margin proposed by one of the mobile network operators of "no more than 20%". Another of the mobile network operators proposed a margin of US1cpm, which is equivalent to 3.75 fils/minute. As explained above, the Authority considers that a slightly higher margin would be warranted

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under this option in order to cover the international link costs (of approximately 5 fils/minute).¹⁶

2.3.3 Remove price control on call termination rates for international inbound calls (Option 3)

77. Under this third option, operators in a Dominant position in the market for termination services on their own network would be free to set the applicable call termination rates for terminating international inbound calls.
78. Although the Authority is not in a position to fully appreciate to what level the dominant operators would choose to set the termination rates for international inbound traffic, it can be assumed that they will seek to maximise revenues and profit. As such, this scenario would be very likely to produce the same outcome as under Option 2.
79. Under this scenario, operators terminating international inbound traffic would remain under the obligation to interconnect, albeit they would be free to set the level of termination rates applicable to such traffic, subject to obligations stemming from international treaties and other resolutions adopted within international bodies of which Bahrain is a member.
80. In any event, the Authority will make sure that undertakings stemming from international treaties or other resolutions adopted within international bodies of which Bahrain is a member are respected.

2.4 Preliminary conclusion on the regulatory treatment of international inbound calls

81. The Authority has reviewed the current Regulation relating to the supply of Wholesale Inbound Services in Bahrain, and in particular the effectiveness of the Regulation in achieving the purpose of delivering benefits to Bahrain. As part of this review, the Authority has considered who has benefited from maintaining a relatively low price floor for wholesale inbound services compared to the other GCC countries. There is little evidence to indicate that Bahrain has benefited from the lower wholesale inbound rates into Bahrain (compared to the wholesale rates paid by Bahrain operators for calls to the other GCC countries), given the uniformity observed in intra-GCC retail call rates.
82. The Authority has also taken into account the initial views received from ISL holders in response to the Authority's Article 53 request issued as part of this review. In particular, the Authority has considered the concerns raised by operators regarding compliance with the current price floors.
83. The Authority identified three options with the view to generate benefits for Bahraini end-users, particularly through the generation of additional surplus for licensed operators that could be used for additional investments in infrastructure and services within Bahrain.

¹⁶ The third mobile network operator proposed setting the termination rate for international inbound traffic at the same level as the wholesale inbound rate, thus eliminating any margin altogether.

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84. In light of the above, the Authority proposes the options that could potentially promote effective and fair competition while protecting the interests of end users in Bahrain:
- a. **Option 1:** the termination rate applying to international originated calls to mobile and fixed subscribers in Bahrain should respectively be 37.68 fils per minute and 30.12 fils per minute; or
 - b. **Option 2:** the termination rate applying to international originated calls to mobile and fixed subscribers in Bahrain should respectively be 27.60 fils per minute and 20.10 fils per minute; or
 - c. **Option 3:** the termination rate applying to international originated calls to mobile and fixed subscribers in Bahrain should no longer be subject to a price control.
85. If any of the above-mentioned options was adopted by the Authority, the current Regulation relating to Wholesale Inbound Services would be repealed.
86. In the event that market conditions change, the Authority may consider reviewing its position on WIICS and call termination rates for internationally originated calls as appropriate. In that respect, the Authority will closely follow any potential development taking place at GCC level with respect to inter-GGC termination rates.

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Summary of submissions on the proposed regulatory treatment of the WIICS

General comments on the three proposed options

Q2. Please indicate what would be the likely impact of each of the three options (i.e. Option 1, Option 2, and Option 3) on:

- A. your business (i.e. revenues, costs, and profits);
- B. the overall competitive landscape in Bahrain;
- C. your ability to enter into bi-lateral negotiations with GCC operators for International Settlement Rate ('ISR') and other international services (e.g. Inter-Operator Tariff ('IOT') for roaming, international connectivity etc.); and
- D. your ability to enter into bi-lateral negotiations with non-GCC operators for International Settlement Rate ('ISR') and other international services.

Q3. In light of the above, please indicate what would be your preferred option. Please justify your response.

Summary of stakeholders' submissions	The Authority' analysis and response
<p><u>Preferred options</u></p> <p>Batelco, Mena, Viva and Zain all prefer Option 1.</p> <p>Etisalcom, Kalaam and Viacloud all prefer Option 4.</p> <p><u>Comments on the choice of option</u></p> <p><u>Batelco</u></p> <p>Batelco believe that Option 1 would be the most beneficial option for itself as well as other major licensed mobile and fixed operators in the Kingdom because of the decreased WIICS revenue experienced by Batelco as a result of certain operators</p>	<p><u>Choice of option</u></p> <p>Based on operator preferences, it would appear that the preferred options are Options 1 and 4. However, as explained in the consultation document (see above paragraphs 53 to 56), the Authority did not consider Option 4 any further because of the difficulties with compliance and enforcement of the WIICS price floors.</p> <p>Thus, although the Authority acknowledges that some operators would prefer Option 4, it is not considered further.</p> <p>The Authority's preferred option is Option 1. The justification and reasoning for this choice is provided in the section that follows on "The Authority's conclusions on the proposed regulatory treatment of the WIICS".</p>

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<p>pricing below the regulated price.</p> <p>In respect of all three options, Batelco is conscious of the incentive for other operators to deploy traffic manipulation methods, such as ‘SIM boxes’, in an attempt to disguise international traffic.</p> <p>Based on Batelco’s review of incoming traffic trends over the past [X] months and the assumption that these trends continue (rather than decrease) Batelco believes that Option 1 would increase an average monthly net revenue by BD [X]. ([X])</p> <p>Based on current traffic trends, Batelco estimates that Option 2 would provide them with an average monthly net increase of BD [X], an appreciably lower amount than under Option 1.</p> <p>Batelco recognises that Option 2 allows operators to generate additional international inbound traffic but believes the potential revenue from such traffic to be minimal.</p> <p>Batelco notes that while Option 3 provides some degree of pricing flexibility, the majority of traffic into Bahrain originates from GCC countries, which makes it subject to maximum price caps set by the GCC Council. Batelco appreciates that additional revenue could be retained by increasing tariffs for international inbound traffic from non-GCC countries.</p> <p><u>Etisalcom</u></p> <p>Etisalcom does not make any distinction between the three options but states that it would prefer Option 4 with the price floor closely monitored by the Authority.</p> <p><u>Kalaam</u></p> <p>Kalaam believes that all three options are anticompetitive and will lead to the closure of smaller operators.</p> <p>Kalaam states that Options 1 and 2 would require them to price at cost, causing</p>	<p>Given the preferred choice of Option 1, the operators’ comments on the details of Options 2-5 are less relevant.</p> <p>Specifically, Viva’s request for more clarity on the estimation of the cost of international link is acknowledged. However, such detail is not provided because the Authority’s decision is to set the international termination rates at the GCC cap.</p> <p>Kalaam comments that Option 3 could lead to non-uniform pricing, which in turn would result in port-out issues as demand switches to the lowest price operator. The Authority assures operators that the chosen option, Option 1, will prevent discriminatory practices to take place and thus would ensure uniform pricing at the wholesale level.</p>
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profits to fall significantly.

Kalaam believes that under Option 3 its costs would be subject to ‘unjust’ demands by operators to terminate on their networks. Kalaam also argues that operators would gain an ‘unfair’ advantage due to their large subscriber base. Kalaam suggests that this would lead to non-uniform pricing, which in turn would result in port out issues as demand switches to the lowest price operator.

Mena

Mena believes Option 1 will bring the greatest positive financial impact, though it would not be very large given current traffic volumes.

Mena anticipates that raising the price floor would have a positive competitive impact as prices come into line with regional benchmarks.

Viacloud

Viacloud believes that all three options are anticompetitive [X].

[X]. Viacloud notes that Option 3 may result in a large skew in the international termination prices to Bahrain networks. Viacloud points out that Option 3 allows network operators an ‘unfair’ advantage because of their subscriber base size.

Viva

Viva believes that Option 1 maximizes the economic surplus within Bahrain.

Viva believes that the international link cost should be no higher than Batelco’s regulated Inter-Operator Transit charge, currently set at 1.723 fils/minute. Viva requests that the Authority shares with the industry the details of its estimates of the international link cost.

Viva considers that a profit margin for ISL holders of 3 fils/minute is sufficient to compensate non-network ISL holders for the risk on the investment they are taking and to enable them to compete with network operators.

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Hence, Viva recommends the following edits to Option 2:

“Increase call termination rates for terminating international calls to less than GCC Caps (25.397/32.957 fils), considering that:

- *International link cost: 1.723 fils/minute*
- *Margin: 3 fils/minute”*

[X].

Viva agrees that network operators have a competitive advantage. However Viva believes such an advantage is justified considering the level of investment made by network operators.

Viva notes that because non-network ISL holders’ revenues are generated mostly from terminating other operators destined traffic to the other networks, they are able to price international inbound traffic below cost, giving them an unjustified competitive advantage and driving down value for the whole market.

Viva further believes that Non-Network ISL holders, being non-vertically integrated and not dominant in the termination segment of the service, have the ability to price the WIICS to international carriers below cost without any risk of anti-competitive price squeeze pricing.

Viva finds this might be practiced in the context of swap deals between the tariff non-network ISL holders apply to WIICS and the tariffs they get from their international carriers for their outbound traffic or any other international traffic.

Zain

[X].

Zain notes that all operators, including ISL holders, will achieve maximum potential revenues from their own subscriber traffic under Options 1 and 3. Zain argues that this will result in reinvestment into telecoms services.

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<p>Zain comments that the pricing mechanism under Options 1 and 3 makes non-compliance in the form of ‘swap’ deals difficult.</p> <p>Under Option 2 Zain argues that 32.6 fils/minute will effectively be the new price floor for international mobile termination. Zain argues that this is because the cost of the international link is a sunk cost for the ISL holders and so the 5 fils proposed by the Authority will be part of their profit.</p> <p>Zain comments that Option 2 makes it difficult to detect non-compliance through swap deals and margin squeeze.</p> <p><u>Ability to enter into bilateral negotiations</u></p> <p><u>Batelco</u></p> <p>Batelco believes that Option 1 will enable operators to concentrate on strengthening their ability to enter into negotiations with both GCC and non-GCC operators for international services such as bilateral services and hubbing.</p> <p><u>Etisalcom</u></p> <p>Etisalcom notes that all three options will benefit the largest operators whereas the smaller operators will have no means to enter into bi-lateral negotiations with GCC or other international operators.</p> <p><u>Mena</u></p> <p>Mena believes that if all operators apply the changes uniformly then the changes should not impact the ability to enter into bilateral negotiations with GCC operators.</p> <p><u>Viacloud</u></p>	<p><u>Ability to enter into bilateral negotiations</u></p> <p>Zain, Mena and Batelco find that the proposed change in regulation would not affect their ability to enter bilateral negotiations with GCC and non-GCC operators.</p> <p>However, Estisalcom, Viacloud and Viva find that their ability to enter such negotiations would be negatively affected by Option 1. Etisalcom and Viacloud do not provide sufficient evidence to support their view.</p> <p>Viva’s justification for its inability to enter into negotiations is based on non-network operators being able to price “below cost”. However, although these operators do not incur costs of terminating calls on their own networks (since calls do not typically terminate on their networks), they do have to pay termination rates to the operators on whose networks the calls are terminating. Thus, they too incur a “termination cost”. It is therefore unclear to the Authority how the operators would be able to price “below cost” as it is suggested by Viva.</p> <p>Overall, the Authority finds that, as stated Mena, given the uniform implementation of the change in rates across operators, the ability to enter into bilateral negotiations should not be adversely affected.</p>
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<p>[X].</p> <p><u>Viva</u></p> <p>Viva notes that removing the price floor would create a significant gap between wholesale international inbound rates and termination rates. Viva anticipates that network operators such as themselves will encounter serious difficulties in entering into bi-lateral deals with GCC and non-GCC operators for International Settlement Rate (“SSR”) and other international services, as carriers will be attracted by other ISLs which have the ability to price below cost (where cost is equal to Termination rate plus the cost of the International link).</p> <p><u>Zain</u></p> <p>[X].</p>	
Differentiating terminating traffic based on origination (domestic vs. international)	
<p>Q4.Option 1, 2 and 3 imply that operators are able from a technological standpoint to differentiate terminating traffic according to the origination of the call (domestic vs. international). Would you require different traffic types to be handed over to you on different interconnection ports?</p> <p>Q5. How should terminating traffic be treated where the CLI is not clear or is absent (i.e. international or domestic termination rate)? Do you see any other cases in which treating terminating traffic could give rise to specific difficulties?</p>	
Summary of stakeholders’ submissions	The Authority’ analysis and responses
<p><u>Different interconnection ports</u></p> <p><u>Batelco</u></p> <p>Batelco notes that its current practice already involves the handover of different types of traffic on different interconnection ports. [X].</p> <p><u>Etisalcom and Kalaam</u></p> <p>Etisalcom and Kalaam would require different traffic types to be handed over on</p>	<p><u>Different interconnection ports</u></p> <p>Batelco, Viva and Zain state that they are able to differentiate types of traffic with their existing infrastructure. It therefore appears that the technology to enable this differentiation is available to the operators. While the Authority acknowledges that Etisalcom, Kalaam and Viacloud are unable to differentiate between traffic types at the moment, the Authority finds that they should invest in the necessary technology to be able to do so, if the need arise. The provision of different interconnection ports is a technical matter rather than a regulatory one and therefore the Authority invites the</p>

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<p>different interconnection ports.</p> <p><u>Mena</u></p> <p>Mena believes that there should be no regulatory restriction on traffic types.</p> <p><u>Viacloud</u></p> <p>Viacloud notes that given its infrastructure they are unable to differentiate between local and international originated calls.</p> <p><u>Viva</u></p> <p>Viva comments that it is able to differentiate terminating traffic according to the origination of the call for both domestic and international traffic as separate trunks are designated for each traffic type. Hence, Viva does not consider it necessary to change to other interconnection ports in order to differentiate traffic types.</p> <p><u>Zain</u></p> <p>Zain does not believe that physical port separation is required as the caller's CLI as well as other network identifiers are sufficient for call source differentiation.</p> <p><u>Absent or unclear CLI</u></p> <p><u>Batelco</u></p> <p>Batelco notes that in recent months they have seen an increase in the termination of international traffic to universal numbers. Batelco states that it is unable to determine whether these numbers are of a fixed or mobile nature.</p> <p>When traffic does not have a clear or verified CLI, Batelco would be in favour of applying similar practices to those carried out in other GCC countries (UAE and Oman) where operators charge higher termination prices for this type of 'uncertain' traffic than the rates set out under the GCC cap.</p> <p><u>Etisalcom</u></p> <p>Etisalcom suggests that small ISL holders may use 'sim boxes' in order to change</p>	<p>concerned parties to work-out a suitable technical interconnection solution.</p> <p><u>Absent or unclear CLI</u></p> <p>The Authority recognizes that it may not be possible to identify the origin of a call without a CLI or with an unclear CLI. To avoid CLI refiling or CLI stripping behaviours, the Authority finds that such calls should be charged international termination rates.</p> <p><u>Universal numbers</u></p> <p>With regard to Batelco's comment on universal numbers, the Authority acknowledges that such 8-digits numbers starting with 6 or 7 can be used by licensed operators for either fixed or mobile services. However, all licensed operators can consult the Numbering Management System to identify which number ranges are used for mobile services, and which ones are used for fixed services. The applicable termination rates</p>
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<p>the CLI such that the traffic appears as domestic.</p> <p><u>Kalaam</u></p> <p>Kalaam states that ideally calls with no CLI would be blocked at the operator end.</p> <p><u>Mena</u></p> <p>Mena notes that unknown CLI traffic gives rise to difficulties on route rating and potential traffic fraud.</p> <p><u>Viacloud</u></p> <p>Viacloud believes that unknown CLI traffic may be treated as international traffic.</p> <p><u>Viva</u></p> <p>Vive notes that its ability to differentiate traffic types applies even if the CLI is absent or incomplete.</p> <p><u>Zain</u></p> <p>Zain comments that when the CLI is missing or not clear, the call rating is not completed and the billing system flags the unidentified call. Accordingly a ticket is opened with the business partner to rectify the issue to avoid suspending the traffic conveyance service.</p> <p>Zain notes that local licensees are obliged not to manipulate the CLI and any non-compliance would be reported to the Authority.</p>	<p>for calls to universal numbers should therefore be:</p> <ul style="list-style-type: none"> • the regulated mobile termination rates for calls to universal numbers within a number range allocated to Batelco, Viva or Zain for the purpose of providing mobile services (i.e. domestic mobile termination rate if the call is originated in Bahrain, and international mobile termination rate if the call is originated abroad); and <p>the regulated fixed termination rates for calls to universal numbers within a number range allocated to Batelco for the purpose of providing fixed services (i.e. domestic fixed termination rate if the call is originated in Bahrain, and international fixed termination rate if the call is originated abroad).</p>
Enforceability	
Q6. Would you be able to detect CLI refiling practices (i.e. disguising international calls into domestic calls to avail from lower termination rate)?	
Summary of stakeholders' submissions	The Authority' analysis and responses
<u>Batelco</u>	It appears that most operators other than Zain do not have the means to detect CLI

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<p>At the moment, Batelco is unable to effectively detect all CLI refiling practices using its existing tools and traffic monitoring methods.</p> <p><u>Etisalcom</u></p> <p>Etisalcom is unable to control CLI refiling, it believes it should be done either by the operator or a solution should be provided by the Authority.</p> <p><u>Kalaam</u></p> <p>Kalaam finds it is unable to control CLI refiling; it believes that ideally a solution would be provided by the Authority.</p> <p><u>Mena</u></p> <p>Mena notes that it has not come across such refiling practices.</p> <p><u>Viacloud</u></p> <p>Viacloud is unable to control CLI refiling and believes it would be very difficult to police.</p> <p><u>Viva</u></p> <p>Viva emphasizes that it is very difficult to detect such behavior. Viva requests that the Authority explicitly state that such practices are unlawful and require all ISL holders to have their termination revenue externally audited.</p> <p><u>Zain</u></p> <p>Zain believes there are a number of means of detection CLI refiling. This include:</p> <ul style="list-style-type: none">• Customer complaints;• technical solutions offered by firms such as Revector and SIGOS which	<p>refiling at the moment. However, the Authority finds Zain's suggested solutions viable options available to all operators to combat refiling behaviour. Thus, if an operator finds that CLI refiling is imposing a disproportionate cost on its business, it could adopt one of the methods suggested by Zain.</p> <p>The Authority reminds licensed operators that the act of altering CLI information of a call passing through or terminating on its network is prohibited by Article 11 of the Lawful Access Regulation.¹⁷</p> <p>In any event, the Authority would continue to monitor and enforce regulation and intervene if there is anti-competitive behaviour.</p>
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¹⁷ See Article 11, Lawful Access Regulation. promulgated by Resolution No (8) of 2009 issued on 10 November 2009.

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<p>test whether their own international calls are terminated on the same CLI number;</p> <ul style="list-style-type: none"> • analyzing call patterns and trends for abnormalities; and • reporting non-compliance to the Authority. 	
Timing and transition	
<p>Q7. Should the Authority consider introducing a glide path to gradually reach the proposed higher termination rates in respect of internationally originated calls?</p> <p>Q8. When should the current Regulation on Wholesale International Inbound Services be repealed (i.e. removal of the existing WIICS price floors)? Immediately or at a later stage?</p>	
Summary of stakeholders' submissions	The Authority' analysis and responses
<p><u>Timing of higher termination rates</u></p> <p><u>Batelco, Viva and Zain</u></p> <p>Batelco, Viva and Zain support an immediate introduction of higher termination rates.</p> <p>Etisalcom, Kalaam, Mena and Viacloud are in favor of a glide path approach to changing termination rates.</p> <p><u>Etisalcom</u></p> <p>Etisalcom notes that the current regulation should not be reviewed for at least a year otherwise bilateral business with international partners will be disturbed.</p> <p><u>Kalaam</u></p> <p>Kalaam notes that ideally it would need a year's notice in order to execute existing business and to prepare future business plans.</p>	<p>The Authority notes that some operators would prefer immediate implementation of the new termination rates while some others would prefer a phased implementation.</p> <p>Although the Authority can see why the phased approach may be seen as advantageous for some operators, the Authority's aim is to secure the best outcome for Bahraini consumers.</p> <p>To this end, the Authority finds that immediate implementation of the proposed international termination rates, without a glide path, is the appropriate choice as it avoids delaying the retention of economic surplus in Bahrain. The sooner the proposed rates are implemented, the quicker the transfer of economic benefit from foreign operators to Bahraini operators and therefore, Bahraini consumers.</p> <p>The Authority therefore calls for the proposed rates to be implemented immediately.</p>

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Mena

Mena is in favour of repealing the current regulation at a later stage.

Viacloud

Viacloud believes that any change in regulation should give sufficient notice to allow WIICS operator to make necessary changes to any long term commitments and implement technical changes. [X].

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The Authority's conclusions on the regulatory treatment of the WIICS

The Authority's preferred option and justification

87. As was stated in the summary of submissions on the proposed regulatory treatment of the WIICS and the Authority's response, the Authority's preferred choice is Option 1.
88. The operators who responded to the consultation expressed a preference for Options 1 and 4. But as was stated earlier, the Authority did not consider Option 4 any further in the consultation document because of the difficulties with compliance and enforcement of price floors applicable to WIICS. Such difficulties were not assuaged by the respondents to the consultation. These concerns have been outlined in more detail in Section 2.3 and are not repeated here.
89. Therefore, the Consultation set out a choice between Options 1, 2 and 3.
90. Of these, the Authority finds Option 1 as the most appropriate choice for Bahrain and notes that Batelco, Mena, Viva and Zain also stated Option 1 as their preferred option.
91. As was stated in section 2.3 of the consultation document, the choice of option would depend on the trade-off between the following objectives:
 - a. generating an economic benefit to Bahrain;
 - b. promoting competition for inbound services; and
 - c. ensuring that the regulation can be enforced and supervised.
92. The Authority's utmost concern is that the economic surplus is retained in Bahrain in a manner that is most likely to result in that surplus being passed on to the ultimate consumer (i.e., users of fixed and mobile telecommunications services in the Kingdom of Bahrain). This objective requires that the regulatory treatment that is adopted is enforceable.
93. In considering which option will most benefit consumers in Bahrain, the Authority has taken note of the possibility that raising the termination rates could in turn lead to foreign operators increasing the price of retail international calls to Bahrain. In turn, this could affect negatively the volume of incoming international calls to Bahrain, so reducing consumer welfare.
94. However, the existing evidence suggests that the increase in WIICS prices (as a result of the proposed increase of international termination rates) would be unlikely to result in a significant drop in demand for international calls to Bahrain. This is because foreign operators such as those in the GCC typically set their retail prices for calls to other GCC countries at a uniform level, even when the wholesale inbound rates were lower in Bahrain than in the other GCC countries (i.e., there is no evidence that lower inbound rates in Bahrain, relative to the rest of the GCC, led to lower retail prices, relative to other GCC countries, for consumers in other countries to call a Bahrain number).

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95. The Authority therefore finds the risk of the resulting increase in the WIICS price being passed on to foreign retail consumers to be low. This would also then lower the risk of a potential fall in call volumes.
96. In conclusion, it is the Authority's view that Option 1 achieves the objective of generating an economic benefit to Bahrain with a regulatory treatment that is enforceable. This option also maintains competition in the broader mobile markets in Bahrain and in the market for inbound services. This is discussed in more detail below.

Generating an economic benefit

97. As was shown in Section 2.3, Option 1 should generate a greater economic surplus for licensed operators in Bahrain than Options 2 and 3. This has been confirmed by the largest operators (i.e. Batelco, Menatelecom, Viva and Zain) in their response to the consultation.
98. Furthermore, because a large proportion of this surplus would accrue to operators with access networks serving retail consumers in Bahrain, this profit is more likely to be passed on to Bahraini consumers under Option 1 than under Options 2 and 3 (because under Options 2 and 3, some of the surplus would accrue to other licensees who do not serve directly large numbers of end consumers in Bahrain).

Enforceability

99. The current situation where WIICS are subject to price floors is difficult to supervise and enforce compared to options where the economic surplus is captured through higher termination for internationally originated calls i.e. Options 1, 2 and 3. Under a price floor mechanism (i.e. the current situation), it would be difficult for the Authority to investigate and prove that an alleged case of non-compliance with price floors really took place.
100. The Authority therefore considers that the chosen option will be easier to supervise and enforce than Option 4 (and as easy to enforce and supervise as Options 2 and 3). Furthermore, the onus will be less on the Authority to monitor and detect any CLI refiling behaviour but more on licensed operators, who can supervise incoming traffic being handed-over at the point of interconnection. As pointed out by Zain in its response to the consultation, there are various ways in which this monitoring and detection can be done if necessary.

Promoting competition

101. The Authority acknowledges that, under Option 1, most international traffic bound for a network will be captured by the terminating operator itself, and that consequently, competition between those operators with pervasive local access networks in Bahrain and others, to bring that traffic into Bahrain, may be more limited. However, competition between mobile network operators for the provision of mobile services in Bahrain will be maintained at its current level. (Indeed, consumer outcomes could even be enhanced, if the additional revenues mobile operators earn from inbound services are competed away through lower mobile retail prices.)
102. Thus, when considering the trade-off between the three objectives, the TRA considers that Option 1 is likely, overall, to be the most beneficial option for end-consumers in Bahrain. This is because it generates the most economic benefit, is enforceable and allows

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competition between mobile network operators for the provision of mobile services in Bahrain to be maintained at the current level, or even enhanced.

Differentiating terminating traffic based on origination (domestic vs. international)

103. It appears that some operators have the necessary infrastructure or technology in place to differentiate traffic based on its origination. For instance, Zain has suggested a number of methods to detect CLI refiling:

- a. customer complaints;
- b. technical solutions offered by specialised firms which test whether their own international calls are terminated on the same CLI number; and
- c. analysing call patterns and trends for abnormalities.

104. To further disincentivise CLI refiling or CLI stripping behaviours, the Authority recommends that calls without a CLI or calls with unclear CLI information be treated as international calls and charged as such.

105. Moreover, if there are reports of refiling, the Authority will take the necessary action to ensure that the regulation is enforced and not circumvented.

106. Finally, as stated in the above summary table, the Authority reminds licensed operators that the act of altering CLI information of a call passing through or terminating on its network is prohibited by Article 11 of the Lawful Access Regulation promulgated by Resolution No (8) of 2009 issued on 10 November 2009.

Timing and transition

107. The Authority finds the preferred option, Option 1, should be implemented as soon as practicable and without a glide path.

108. As was mentioned in the Authority's analysis and responses to Questions 7 and 8, the Authority's aim is to secure the best outcome for Bahraini consumers. To this end, the Authority does not see merit in delaying the implementation of higher termination rates that would retain economic surplus in Bahrain. The sooner the proposed higher termination rates are implemented, the quicker the transfer of economic benefit from foreign operators to Bahraini operators and therefore, Bahraini consumers.

109. The Authority therefore calls for the proposed higher termination rates for internationally originated calls to be implemented on **1 October 2015**, the same date that the Regulation on Wholesale International Inbound Telecommunications Services is repealed.

110. As already stated in paragraph 86, in the event that market conditions change, the Authority may consider reviewing its position on WIICS and call termination rates for internationally originated calls as appropriate. In that respect, the Authority will closely follow any potential development taking place at GCC level with respect to inter-GCC termination rates.

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3 Part B – Reduction of domestic call termination rates

3.1 Background

111. Batelco has been determined to hold a Dominant Position in the wholesale market for termination services on its fixed network on 9 August 2003.¹⁸
112. Similarly, all three mobile operators have been determined to hold a Dominant Position in the wholesale market for termination services on their own respective mobile network:
- a. Batelco and Zain were declared dominant on 1 February 2010;¹⁹ and
 - b. Viva was declared dominant on 16 May 2013.²⁰
113. Having been found dominant, Batelco, Viva and Zain are required to prepare a Reference Interconnect Offer ('RIO') in which the terms of the call termination services are clearly detailed. As per article 57(b) of the Telecommunications Law, such terms shall be fair and reasonable and non-discriminatory and the tariffs shall be based on forward-looking incremental costs.
114. Batelco and Zain's RIOs have been ordered or approved by the Authority and are published in their respective websites.^{21, 22}
115. While the non-price terms of Viva's RIO are still being reviewed by the Authority, the price terms have been approved on 2 October 2014 (ref: MCD/10/14/108) and can be consulted on Viva's website.²³
116. The current fixed and mobile terminations rates were set by the Authority by way of an Order on Batelco's Reference Offer issued on 14 May 2012 (ref: MCD/05/12/072):
- a. the current mobile termination rate is 6.378 fils per minute; and
 - b. the current fixed termination rate is 2.711 fils per minute.
117. The above symmetric termination rates were set based on Batelco's 2009 regulatory accounts and are now due for a review.
118. The following sections set out the approach followed by the Authority to set the call termination rates with respect to domestically originated calls.

¹⁸ Dominance in Interconnection Markets Determination issued 9 August 2003 (ref: ERU/D E/005);

¹⁹ Determination - Dominance designation for termination services on individual mobile Networks issued by the Authority on 1 February 2010 (ref: MCD/02/10/010)

²⁰ Final Determination - Dominance designation for termination services on VIVA's mobile network issued by the Authority on 16 May 2013 (ref: MCD/05/13/044)

²¹ Batelco's RO can be consulted at <http://portal.batelco.com/main-business/wholesale/reference-offer/>

²² Zain's RO can be consulted at <http://www.bh.zain.com/en/zainbahrain/rio>

²³ Viva's RO can be consulted at <http://www.viva.com.bh/content/wholesale>

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3.2 Use of bottom-up cost models for setting call termination rates

119. Before the finalization of the bottom-up ('BU') cost models in May 2014, the Authority could only rely on the costing information derived from dominant operators' regulatory accounts to take regulatory pricing decisions.
120. The bottom-cost model project was initiated in May 2011 with the issuance of a draft Position Paper for consultation. After having considered all the comments received by stakeholders during such consultation, the Authority issued its final Position Paper on 19 October 2011. The Position Paper set out the Authority's final views with regard to the development of three BU cost models:
- a. An access network BU cost model, reproducing Batelco's copper access network, but also a point-to-point fibre access network;
 - b. A core network BU cost model, reproducing Batelco's core transmission networks (i.e. MPLS, SDH and DWDM); and
 - c. A mobile network BU cost model, reproducing the mobile networks of Batelco, Zain and Viva, but also that of a 'generic' mobile operator. The input parameters of the generic operator were set to represent an average and efficient mobile network in Bahrain.
121. The main assumptions and parameters of the BU models were extensively discussed with operators during the data collection and model validation phases that took place throughout 2012 and 2013. Several meetings and conference calls were organised with concerned parties to ensure that all dimensioning rules and input parameters were appropriately implemented in the BU models. The draft BU models were issued for consultation and the Authority took utmost consideration of the various comments received by operators during such consultation to make final adjustments to the models. The final versions of the BU models were issued to Batelco, Viva and Zain on 15 May 2014.
122. The Authority has decided to mostly rely on the results of the BU models for the review of the call termination rates. The use of the BU models for setting termination rates has several advantages:
- a. Transparency: Batelco, Viva and Zain all have a non-confidential version of the mobile BU model. Contrarily to regulatory accounts which contain confidential information that cannot be shared, all operators have access to the same source of information.
 - b. Symmetric mobile termination rate: the mobile BU model reproduces the mobile network of a generic operator, whose parameters have been set to represent an efficient operator while taking into account specific parameters for Batelco, Viva and Zain. Using the results of the generic operator's model is therefore more appropriate to set a symmetric mobile termination rate.
 - c. Forward looking termination rates: the core BU model calculates the cost of fixed termination up to 2015, while the mobile BU model calculates the cost of mobile termination up to 2020. The use of BU models therefore enable to set forward looking termination rates. This cannot be achieved using regulatory accounts as

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there is always a gap of approximately two years between the time cost are incurred and the time dominant operators submit their regulatory accounts.

- d. Termination rates based on incremental costs: contrarily to regulatory accounts, BU models enable to identify the true incremental cost of providing the call termination service.
123. For the above reasons, the Authority is of the view that it is appropriate to put more weights on the BU model results than on the top down ('TD') regulatory accounts prepared by dominant operators for the purpose of setting call termination rates based on forward-looking incremental cost.

3.3 Proposed glide path for the reduction of the mobile termination rate for domestically originated calls

124. As indicated in the previous section, the Authority has mostly relied on the results of the mobile BU cost model to derive a proposed three-year target for the mobile termination rate with respect to domestically originated calls.
125. The results of the BU cost model for the period 2013 to 2018 are presented in Table 6 below. They include the calculated cost of mobile termination according to two cost standards:
- a. the Long Run Average Incremental Cost which include a contribution to common costs (referred to as 'LRAIC+'). LRAIC+ not only include directly attributable costs, but also joint and common costs; and
 - b. the 'strict' Long Run Average Incremental Cost (referred to as 'Pure LRIC'), where the increment is the call termination traffic. The total incremental cost of the termination service is calculated as the difference between a) the total long-run costs of providing all services; and b) the total long-run costs of providing all services with exception of the termination service (i.e. termination traffic is set to zero in the BU cost model). The total incremental cost of the termination service is then divided by the number of terminating minutes to derive a Pure LRIC cost of termination per minute.
126. As can be seen in Table 6, the LRAIC+ and the Pure LRIC mobile termination rates of the generic operator are respectively 4.5 fils/min and 1.4 fils/min in 2015. They decrease to approximately 3.5 fils/min and 1.0 fils/in in 2018.

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Table 6: Mobile termination rates calculated by the mobile BU cost model

	Mid-2013 to mid-2014	Mid-2014 to mid-2015	Mid-2015 to mid-2016	Mid-2016 to mid-2017	Mid-2017 to mid-2018
BU cost model - LRAIC+ cost of call termination on mobile network (fils/min)					
LRAIC+ - Generic operator	5.991	5.184	4.497	4.040	3.638
<i>Highest LRAIC+ (Batelco, Viva; or Zain)</i>	6.017	5.270	4.830	4.417	4.031
<i>Lowest LRAIC+ (Batelco, Viva, or Zain)</i>	5.360	4.935	4.485	4.039	3.558
BU cost model - Pure LRIC cost of call termination on mobile network (fils/min)					
Pure LRIC – Generic operator	1.839	1.587	1.370	1.191	1.025
<i>Highest Pure LRIC+ (Batelco, Viva, Zain)</i>	2.693	2.405	2.138	1.891	1.662
<i>Lowest Pure LRIC+ (Batelco, Viva, Zain)</i>	1.217	1.048	0.903	0.783	0.673

Source: the Authority based on the mobile bottom-up cost model

127. The Authority considers that it is appropriate to gradually decrease the mobile termination rate to a level below LRAIC+ although not all the way down to a Pure LRIC level.²⁴

128. The Authority notes that the reduction of the mobile termination rate with respect to domestic traffic to a level which is closer to the true incremental cost of providing such service would not only be compliant with Article 57(b) of the Telecommunications Law (which requires interconnection tariffs to be based on forward-looking incremental costs) but would also be beneficial for end-users of mobile and fixed call services in Bahrain. The Authority is of the view that a reduction of the mobile termination rate to a level closer to its incremental cost of provision would have the following benefits:

- a. it will promote competition on the merit and reduce operators' ability to leverage their existing subscriber market share by club effect;
- b. it will contribute to the reduction or elimination of off-net vs. on-net retail call price differentiation, and may contribute to the development of unlimited all-network minute postpaid plans;
- c. it may also encourage operators to find more cost-effective way of interconnecting by moving to IP-based interconnection; and
- d. it recognizes and accompany the current trend which sees value shifting from voice to data services.

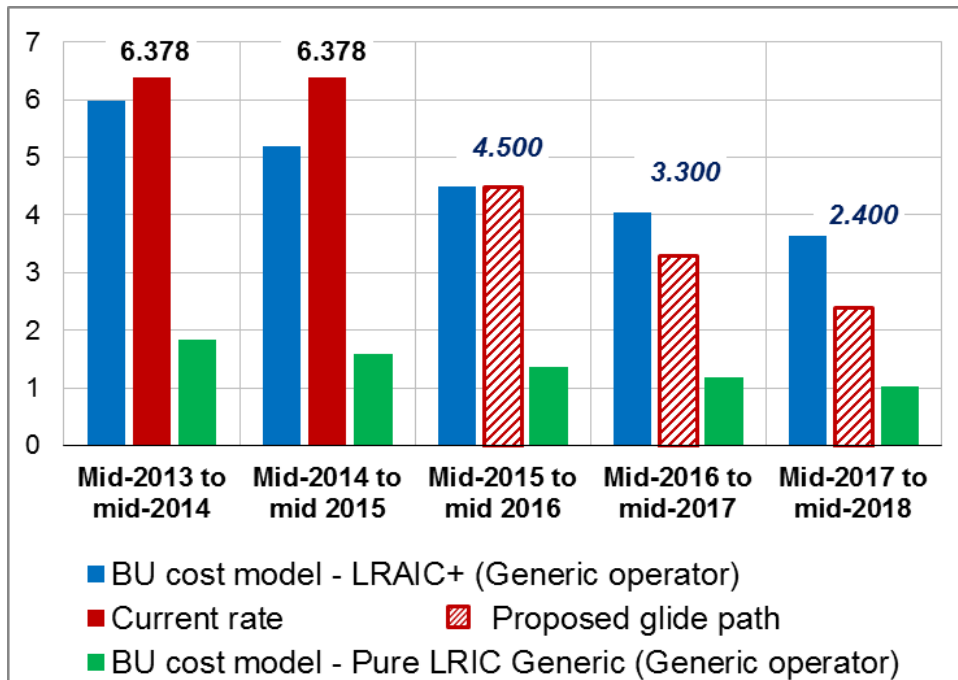
129. For the above reasons, the Authority proposes to reduce the mobile termination rate to 2.4 fils per minute through a 3-year glide path. Such reduction is illustrated in Figure 8 below.

²⁴ It is worth noting that the European Commission recommends to set call termination rates based on Pure LRIC since 2009 (c.f. Commission Recommendation of 7.5.2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU). Since the Commission Recommendation, the great majority of European countries have implemented Pure LRI C call termination rates.

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Figure 8: Proposed price glide path for the mobile termination rate applicable to domestically originated calls



Source: the Authority

130. The proposed 3-year glide path ensures a gradual transition from the current rate of 6.378 fils/min to the proposed target rate of 2.4 fils per minute, which represents a reduction of - 62.4% in three years. Under the glide path, the reduction of the mobile termination rate does not exceed -30% per year (see Table 7 below).

Table 7: Proposed price glide path for the call termination rate on mobile networks with respect to domestically originated traffic (in fils/minute, chargeable per second)

Current rate	GLIDE PATH		
	From: issuance of final RO Order To: 30 June 2016	From: 1 July 2016 To: 30 June 2017	From: 1 July 2017 To: 30 June 2018
6.378	4.50	3.30	2.40
<i>% decrease</i>	-29.4%	-26.7%	-27.3%

Source: the Authority

131. Finally, the Authority notes that the proposed reduction in the mobile termination rate should not negatively affect the combined profitability of mobile operators:

- a. the proposed reduction of the mobile termination rate only applies to domestically originated calls as the termination rate for international inbound would be set above cost (c.f. Part A of the consultation document);

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- b. while mobile operators would certainly face a reduction of their termination revenues, their termination outpayments to other domestic operators would reduce in similar proportion, ultimately improving their profit margin; and
- c. while some mobile operators may be net-receiver and others may be net-payer in respect of interconnection with one another, overall the reduction of the termination rate will ultimately be neutral on the aggregate profitability of those mobile operators.

3.4 Proposed glide path for the reduction of the fixed termination rate for domestically originated calls

132. The Authority has followed a similar approach to set the termination rate to Batelco’s fixed line subscribers with respect to domestically originated calls.

133. The results of the core BU cost model are presented in Table 8 below.

Table 8: Network cost of the fixed termination service calculated by the core BU cost model (in fils/min)

	2013	2014	2015
LRAIC+ network cost of call termination on Batelco's fixed network	0.810	0.814	0.832
Pure LRIC network cost of call termination on Batelco's fixed network	0.000*	0.000*	0.000*

* the Pure LRIC network cost of the termination service calculated by the core BU cost model is zero
Source: the Authority based on the core BU cost model

134. The LRAIC+ network cost of the fixed termination service calculated by the BU core model is approximately 0.8 fils per minute between 2013 and 2015. The Pure LRIC network cost given by the BU core model for the fixed termination service is zero. This can easily be explained: the termination traffic weights for a very small proportion of the total traffic being carried in Batelco’s core transmission networks. In other words, removing the termination traffic in the BU core model does not affect the total cost of core transmission.

135. However, contrarily to the mobile BU cost model, the core BU model only calculates the network cost of fixed call termination and as such does not include a contribution to non-network cost. This non-network cost is given by Batelco’s regulatory accounts under the appellation ISC or Interconnect Specific Charge.

136. The ISC is currently set by the Authority at 0.7 fils per minute. Based on Batelco’s regulatory accounts, the average ISC is 0.555 fils/min during the period 2009-2012.

137. In light of the above and for the same reasons as expressed in above paragraphs 127, 128, and 131, the Authority proposes to reduce Batelco’s fixed termination rate to 1.02 fils per minute through a 3-year glide path. The proposed reduction glide path is presented in Table 9 below.

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Table 9: Proposed price glide path for the call termination rate on Batelco's fixed network with respect to domestically originated traffic (in fils/minute, chargeable per second)

Current rate	GLIDE PATH		
	From: issuance of final RO Order To: 30 June 2016	From: 1 July 2016 To: 30 June 2017	From: 1 July 2017 To: 30 June 2018
2.711	1.920	1.380	1.020 *
<i>% decrease</i>	-29.2%	-28.1%	-26.1%

* the target fixed termination rate of 1.020 fils/min has been chosen to be easily divided by 60 (i.e. chargeable per second)

Source: the Authority

138. The proposed 3-year glide path ensures a gradual transition from the current fixed termination rate of 2.711 fils/min to the proposed target rate of 1.020 fils per minute, which represents a reduction of -62.4% in three years i.e. the same reduction as the mobile termination rate. Under the glide path, the reduction of the fixed termination rate does not exceed -30% per year.

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Summary of submissions on the reduction of domestic termination rates

Proposed glide path for the reduction of the mobile termination rate

Q9. Do you agree with the Authority's proposed reduction of the mobile termination rate applicable to domestically originated calls through a three-year glide path? Please elaborate and justify your views.

Summary of stakeholders' submissions	The Authority' analysis and responses
<p>General comments</p> <p><u>Batelco</u></p> <p>Batelco supports the Authority's general approach towards reducing rates, given the need for a pragmatic solution to setting mobile termination rates for three mobile operators in a timely fashion. Batelco also supports the TRA's continued approach towards reciprocal charging.</p> <p>However, Batelco maintains that Bottom Up (BU) costing should not be automatically extended to other regulated interconnection and access services.</p> <p>While Batelco supports the Authority's proposal in general, it observes the following:</p> <ul style="list-style-type: none"> • Batelco does not see a regulatory problem which requires intervention as wholesale termination rates for the domestic leg remain low compared to international benchmarks. Batelco argues that despite the implementation of a pure LRIC approach in most European countries, the simple average rate remains approximately 5.4 fils/min. • Batelco argues that the chosen approach is inconsistent with setting regulatory conditions to encourage wholesale revenue. 	<p>General comments</p> <p><u>Batelco</u></p> <p>The Authority notes that Batelco supports its approach towards reducing the mobile termination rate applicable to domestically originated traffic.</p> <p>Regarding pricing of other access and interconnection products, as with any other regulatory pricing decision, the Authority will consider at the appropriate time, the sources of information it has at its disposal and on which to take a decision on the appropriate level of costs, which will include top-down and bottom-up estimates and benchmarks, as applicable.</p> <p>On each of Batelco's observations:</p> <ul style="list-style-type: none"> • The Authority finds a comparison of the absolute termination rates in Bahrain not to be relevant in this case. Whilst benchmarks can be useful inputs to setting regulated charges, they should only be relied upon where accurate cost information for Bahrain is not available, or when other policy considerations dictate the use of benchmarks. This is because costs can clearly differ between jurisdictions.

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| <ul style="list-style-type: none">• Batelco argues that the use of BU modelling to reduce revenue from termination rates discourages future investment in, for example, mobile network optimization and the NBN.• Batelco notes that its interconnect specific cost (ISC) is not mentioned in relation to the mobile termination rate. Batelco argues that, while some non-network costs may be recovered using a value above pure LRIC, that no attempt has been made to explain why the BU model is better in this regard relative to operator accounts. Batelco is uncertain whether the proposal is aimed at removing the ISC entirely from future pricing decisions.• Batelco notes that no account has been made of Batelco's latest regulated accounts from 2012 which contain Top Down (TD) LRIC costing based termination rates for the next RIO of [X] fils/min and [Y] fils/min respectively.• Batelco notes that it is significantly reducing the lag time in making historic costing information available, with 2014 information required to be available in September 2015. Batelco argues that the BU model, which uses 2010 cost information and project forecasts, may be less representative than Batelco's accounts.• The Authority comments that the proposal is closer to the "true incremental cost" and compliant with article 57(b) Telecommunications Law (para 133). Batelco note that using either benchmarks or TD LRIC figures would be equally compliant.• Batelco notes that end users have already benefitted from lower prices and better quality mobile services, which compare favourably with | <ul style="list-style-type: none">• In this case, the Authority does not believe it is appropriate to rely on benchmarks. This is because the Authority has followed the EC recommended approach²⁵ to setting termination rates as per the incremental cost of an efficient operator, given the operating environment in Bahrain. This approach is in line with Article 57(b) of the Telecommunications Law which requires interconnection tariffs to be based on forward-looking incremental costs. The incremental cost termination services in Bahrain may not be and does not have to be the same as that in European countries. For example, population density and other characteristics (e.g. low-elevation terrain, labour costs, traffic mix, spectrum holdings etc.) mean that the costs of a mobile network in Bahrain are likely to be potentially quite different to the costs of mobile networks elsewhere.• Regulatory conditions are set to promote sustainable competition and protect consumers. The promotion of wholesale revenues is not an end in itself. Rather, to encourage sustainable downstream competition, the Authority wishes to encourage a well-functioning market for wholesale access services, especially where licensees hold a position of dominance in the relevant market.• The Authority does not find that the proposed rates would affect the incentive to invest as these are the costs of an efficient operator. All operators should make efficiency improvements, perhaps through investment or innovation, to operate at that level. At the same time, the Authority considers the magnitude of the change in MTRs to be insufficient to significantly address operators' ability to invest, especially as this will affect interconnection receipts and |
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²⁵ "It is recommended that the evaluation of efficient costs is based on current cost and the use of a bottom-up modelling approach using long-run incremental costs (LRIC) as the relevant cost methodology.", See "Commission Recommendation of 7.05.2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU". Available at http://ec.europa.eu/smart-regulation/impact/ia_carried_out/docs/ia_2009/c_2009_3359_en.pdf

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<p>abroad. Batelco notes that these downward trends continued in 2014 and 2015.</p> <ul style="list-style-type: none">• Batelco notes that because of the macro-trend of dwindling revenues from voice services operators will be netting off smaller and smaller revenue streams. <p><u>Mena</u></p> <p>Mena agrees with the proposed reduction in mobile termination rates. Mena seeks clarification on whether the Authority views that these rates should be reciprocal, and which category (Fixed or mobile) universal numbers should fall into to.</p> <p><u>Viva</u></p> <p>Viva agrees that termination rates should be cost based but objects to the proposed rates. Viva believes that the current mobile termination rate should be maintained and that the current review should be delayed until Q2 2016 when TD models will be available.</p> <p>Viva notes that as per the Authority's position paper, BU costing is considered a tool, rather than the unique tool, for determining termination rates. Viva argues that international best practice is to consider a combination of BU and TD models.</p> <p>Viva argues that as the Authority's BU costing model is based on 2010-2012 data, and that as Viva only launched in March 2009, the model does not reflect the current reality of Viva's network. Viva therefore has a strong presumption that the model does not reflect its relevant costs. Viva believes that the current review</p>	<p>outpayments.</p> <ul style="list-style-type: none">• Regarding Batelco's comment on its interconnect specific cost ('ISC'), the Authority confirms that such costs have been include in the BU cost model and are captured under the following denominations: "Interco Billing Platform", "Interconnection staff" and "Overheads".• On Batelco's comments on the merits of the TD model compared to the BU model, the Authority reminds it that both the TD and BU models were considered in the estimate of incremental cost, with more weight being given to the BU model. This is in line with the EC recommendation on setting termination rates.²⁶ Furthermore, the explanation of the merits of the BU model are the same as those outlined in Paragraph 122 and are not repeated here. <p><u>Mena</u></p> <p>With regard to Mena's comment on the reciprocity of the MTRs, the Authority refers to section 6 of its Position Paper on the Regulation of Mobile Terminations Rates²⁷ in which the Authority's position on the symmetry of MTRs is explained. To clarify, the Authority considers that MTRs should be symmetrical unless there are objective and material cost differences which are outside the control of operators. As the new proposed MTRs are being uniformly ordered on all three MNOs, the question of reciprocity/symmetry is therefore irrelevant.</p> <p>As for Mena's request for clarification in relation to universal numbers, the Authority refers to its response to Batelco's comment in page 44 (see section "Authority'</p>
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²⁶ "In order to identify and improve possible shortcomings of the bottom-up model, such as information asymmetry, the NRA may compare the results of the bottom-up modelling approach with those resulting from a corresponding top-down model which uses audited data." See "Commission Recommendation of 7.05.2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU". Available at http://ec.europa.eu/smart-regulation/impact/ia_carried_out/docs/ia_2009/c_2009_3359_en.pdf

²⁷ See Position Paper on the Regulation of Mobile Terminations Rates, issued by the Authority on 1 February 2010 (ref: MCD/02/10/011).

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<p>should also consider other potential significant cost increases relating to heavy reliance on wireless technology to build backbone networks.</p> <p>Viva notes that the Authority's proposed mobile termination rate is significantly below that of most EU countries.</p> <p>Viva notes that MNOs are offering free off-net calls to consumers with attractive pricing and packages for postpaid and prepaid plans. Viva therefore believes that the mobile retail market will achieve what the Authority desires as per Para 128.b of the consultation.</p> <p><u>Zain</u></p> <p>Zain finds that the arguments in Para 128.b of the consultation for the reduction of mobile termination rates are not applicable. Zain believes that club effects and off-net retail call prices are no longer an issue as most retail offers include free on-net and off-net minutes.</p> <p>Zain disagrees that there is a trend towards IP interconnection and IP retail billing. Zain believes that as customers are used to getting unlimited data services for free, no operator will take the first move in changing their commercial offering.</p> <p>Zain believes that there is no need to further reduce wholesale mobile termination rates given how low they are already and given that retail prices are the lowest among GCC countries (as per the Authority's 2014 Market Indicator Report).</p> <p>In summary, Zain disagrees with the Authority's proposal. Zain proposes to use LRAIC (LRAIC).</p> <p><i>Glide path</i></p> <p><u>Batelco</u></p> <p>Batelco supports a step to the target rather than a glide path as the absolute price difference is low.</p>	<p>analysis and responses" of the summary table).</p> <p><u>Viva and Zain</u></p> <p>Viva asserts that:</p> <ul style="list-style-type: none">• Both TD and BU models be considered• The Authority's proposed termination rate is lower than that in most EU countries and GCC countries. <p>Zain also finds that the termination rates in Bahrain are already amongst the lowest in the region and so do not need to be reduced further.</p> <p>Batelco made similar arguments and these have already been addressed by the Authority and are not repeated here.</p> <p>Zain suggests, as it did in its response to the BU consultation, that the Authority use LRAIC results rather than the pure LRIC approach. However, as outlined by the Authority in Paragraph 122, there are several advantages to placing relatively more weight on the Pure LRIC estimates and it is for this reason that it is the Authority's preferred option.</p> <p>Zain and Viva further find that unlimited off-net calls are already available in the market and the reduction in termination rates is not necessary to achieve this. Even if this is true, aligning termination rates with the incremental cost of an efficient operator will lead to other benefits as well, such as improvement in efficiency through reduced costs and perhaps recognition of the shift in value from voice to data (despite Zain's argument that no operator will want to start charging for data given that customers are now used to unlimited data packages).</p> <p><i>Glide paths</i></p> <p>The Authority notes that Etisalcom and Kalaam prefer immediate implementation, Batelco prefers a step change and Zain prefers a longer glide path.</p> <p>Zain believes that the glide path should be at least 4 years long and that the proposed</p>
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Etisalcom and Kalaam

Etisalcom and Kalaam are in favour of an immediate reduction.

Viacloud

Viacloud agrees with the proposed three year glide path.

Viva

Viva did not comment on the proposed glide path as part of its response to Question 9.

Zain

Zain instead proposes a glide path of at least four years.

Zain notes that the purpose of using a glide path is to prevent disruption to operators' operations and to allow for long term business planning. Zain believes that the three-year glide path achieves neither of these aims as the reduction is too swift and out of line with international best practice.

decrease in mobile termination rate is not in line with EC best practice.

While the Authority acknowledges Zain's concern, it does not find it appropriate to change its proposal for the following reasons:

Firstly, Zain points to international evidence from 2001-2010, which is now out of date. The EC recommendation on termination rates recommended that the new rates, set as per the LRIC of an efficient operator, be implemented as soon as possible and no later than 31 December 2012. It follows that the EC recommended an upper bound of around 3.5 years as being sufficient for implementation of the new rates. The Authority's proposed glide path falls within that recommended period.

Following the publication of the recommendation, the Authority also notes that the National Regulatory Authorities in the EU chose glide paths to meet the needs of their market. This is again in line with the Authority's proposal for Bahrain. The Authority finds that a three-year glide path is sufficient for the proposed change in termination rate, and indeed, most operators other than Zain have agreed with this.

Secondly, Zain argues that the Authority's recommended annual reductions in the termination rates are not in line with "the philosophy of the glide path". The Authority is unaware of any universal standard on the application of glide paths. However, the Authority would point to examples of other regulators who have implemented glide paths with steeper decreases than the ones proposed in this consultation. For instance Ofcom in the UK implemented a glide path with a constant annual reduction of 37.4% in its determination on mobile termination rates in 2011.²⁸

In summary, although the EC precedent from 2009 is relevant to Bahrain to the extent that both involve a move towards BU LRIC modelling as the cost estimate for setting termination rates, the market situation in Bahrain today is very different to the EU's market in 2009, with the mobile market in Bahrain being more advanced than the

²⁸ See "Wholesale mobile voice call termination", Ofcom, March 2011. Available at http://stakeholders.ofcom.org.uk/binaries/consultations/mtr/statement/MCT_statement.pdf

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	<p>majority of its EU counterparts at that time. Therefore, the Authority is of the view that there are arguments to be made for immediate implementation of the new rates so as to speed up the process of transferring the benefits of the lower rates on to the final consumer.</p> <p>However, the Authority would also prefer to minimize the risk of any disruption to the market. Thus, the Authority continues to find that a three-year glide path is appropriate, if not generous.</p> <p>Finally, the Authority has shifted by 3 months (i.e. from 1st of July to 1st of October) the date of implementation of the MTR glide path so that it coincides with the effective date of repeal of the Regulation on Wholesale International Inbound Services.</p> <p>The Authority has also decided to remove the upper bound time limit of the last step of the glide path (i.e. 30 September 2018). This ensures regulatory certainty with regard to the level of MTR after such date.</p>
Proposed glide path for the reduction of the fixed termination rate	
<p>Q10. Do you agree with the Authority's proposed reduction of Batelco's fixed termination rate applicable to domestically originated calls through a three-year glide path? Please elaborate and justify your views.</p>	
Summary of stakeholders' submissions	The Authority' analysis and responses
<p><u>Batelco</u></p> <p>Batelco repeats its comments on BU costing in its response to question 9.</p> <p>Batelco notes that the BU fixed core model forecasts only to 2015, therefore making top-down separated accounts more up to date in the period to June 2018.</p> <p>Batelco notes that against a trend of fixed mobile technological convergence it would be consistent to use the same costing and pricing approach for fixed and mobile call termination. However, Batelco repeats its objection to automatically extending the BU approach to other interconnection and access prices.</p> <p>Batelco continues to object to the assumptions and costing adjustments upon which the average ISC rate for 2009-2012 was based. Batelco would welcome clarification of the approach used to calculate the target rate given it is well below</p>	<p>Batelco and Viva question the merits of the BU model and express a preference for alternative methods. As mentioned in the response to Question 9, the Authority finds the BU model preferable for reasons outlined in Paragraph 122 and does not repeat those here.</p> <p>Batelco repeats its concerns around extending the BU model to setting other access and interconnection prices. These concerns have already been addressed in Question 9 and the Authority does not repeat its response here.</p> <p>Batelco also requests a clarification on calculation of the average ISC rate for 2009-2012. To derive the average ISC for the period, the Authority has summed up all interconnect specific costs (i.e. CN90 [Interconnect Specific]) reported by Batelco between 2009 and 2012 and has divided the resulting total ISC cost by the total</p>

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<p>the average ISC rate estimated by the Authority for 2009-2012. Batelco also notes that there is no commentary concerning its proposed ISC for the latest RIO.</p> <p><u>Etisalcom and Kalaam</u></p> <p>Etisalcom and Kalaam are in favour of an immediate reduction.</p>	<p>interconnection traffic reported by Batelco for the same years. The Authority notes that the ISC unit cost has greatly varied between 2009 and 2012 (i.e. subsequent decrease and increase) and, in such context, considers that an average for the four-year period should be considered.</p> <p>Etisalcom, Kalaam, Mena and Viacloud largely agree with the Authority's findings and do not make any additional comments.</p> <p>The operators did not make substantive comments on the proposed glide path. Viva suggested that the glide path for fixed termination rates should be the same as that of mobile. The Authority points out that this is indeed the case, although it does not need to be, as the shape and length of the glide path should be considered as per the needs of the particular market.</p> <p>Finally, as done for the MTR glide path, the Authority has shifted by 3 months (i.e. from 1st of July to 1st of October) the exact date of implementation of the FTR glide path, and removed the upper bound time limit of the last step of the glide path (i.e. 30 September 2018).</p>
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ANNEX A – Reasoning

The Authority’s conclusions on the reduction of domestic termination rates

Glide path for the reduction of the mobile termination rate applicable to domestically originated calls

139. The Authority therefore orders that a glide path of three years be implemented on each of Batelco, Zain and VIVA as per the consultation²⁹ and Table 10 below.

Table 10: Ordered price glide path for the call termination rate on mobile networks with respect to domestically originated traffic i.e. with Bahrain CLI (in fils/minute, chargeable per second)

Current rate	GLIDE PATH		
	From: 1 October 2015 To: 30 September 2016	From: 1 October 2016 To: 30 September 2017	From: 1 October 2017 onwards
	6.378	4.50	3.30
<i>% decrease</i>	<i>-29.4%</i>	<i>-26.7%</i>	<i>-27.3%</i>

Source: the Authority

Glide path for the reduction of the fixed termination rate applicable to domestically originated calls

140. The Authority therefore orders that a glide path of three years be implemented on Batelco as per the consultation³⁰ and as per Table 11 below.

Table 11: Ordered price glide path for the call termination rate on Batelco’s fixed network with respect to domestically originated traffic i.e. with Bahrain CLI (in fils/minute, chargeable per second)

Current rate	GLIDE PATH		
	From: 1 October 2015 To: 30 September 2016	From: 1 October 2016 To: 30 September 2017	From: 1 October 2017 onwards
	2.711	1.920	1.380
<i>% decrease</i>	<i>-29.2%</i>	<i>-28.1%</i>	<i>-26.1%</i>

Source: the Authority

²⁹ Compared to the consultation, the implementation date of the ordered glide path has been shifted by three months to ensure that it coincides with the date when the Regulation on Wholesale International Inbound Services is repealed. To ensure regulatory certainty with regard to the level of domestic termination rates in 2018, the Authority has removed the upper bound time limit of the last step of the glide path (i.e. 30 September 2018).

³⁰ Ibid