

PUBLIC VERSION

ORDER No. 3 of 2006

Reference Interconnection Offer Order

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An Order issued by the Telecommunications Regulatory Authority on the Reference Interconnection Offer of the Bahrain Telecommunications Company B.S.C. dated 15 February 2006

6 August 2006

Note: This is the non-confidential version of the Order issued to Batelco on 6 August 2006. Parts of this text have been edited to ensure that confidential information is not disclosed; those parts are enclosed in square brackets and marked with an asterisk.



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1. Definitions

Unless otherwise defined in this Order, any word, phrase or expression shall, unless the context so requires, have the meaning given to it in the Telecommunications Law or the Reference Interconnection Offer, and the terms below shall have the following meaning:

“2004 Audited Accounts” means Batelco’s audited regulatory accounts for 2004 submitted to the Authority pursuant to the Accounting Separation Regulation and the Accounting Separation Determination;

“2004 Un-audited Accounts” means Batelco’s un-audited regulatory accounts for 2004 submitted to the Authority pursuant to the Accounting Separation Regulation and the Accounting Separation Determination;

“2005 Accounts” means Batelco’s audited regulatory accounts for 2005 to be submitted to the Authority pursuant to the Accounting Separation Regulation and the Accounting Separation Determination;

“Accounting Procedures Manual” means a licensed operator’s accounting procedures manual submitted to and approved by the Authority pursuant to the Accounting Separation Regulation;

“Accounting Separation Determination” means the accounting separation determination to Batelco published by the Authority on 5 February 2005 (Determination No. 2 of 2005);

“Accounting Separation Regulation” means the accounting separation regulation issued by the Authority on 2 August 2004 (Regulation No. 2 of 2004);

“Approved Reference Interconnection Offer” means the reference interconnection offer of Batelco dated 15 August 2005 as approved by the Authority;

“Batelco” means the Bahrain Telecommunications Company B.S.C.;

“CCA” means current cost accounting;

“Draft Order” means the draft of this Order included in the Notice;

“Dominance Determination” means the determination ‘Dominance in Interconnection Markets’ published by the Authority on 9 August 2003 (Determination No. 4 of 2003);

“E1” means the capacity provided by 32 channels of 64 kbit/s;

“FAC” means fully allocated costs;

“GMSC” means a gateway mobile switching center, being the standard node for the interconnection between a mobile and fixed telecommunications network;

“HCA” means historic cost accounting;

“Licensee” means any Person other than Batelco that has been licensed by the Authority under the Telecommunications Law;

“LRAIC” means long run average incremental costs;

“LRIC” means long run incremental costs;

“LX” means a local exchange, being the lowest order of switch in a PSTN;

“Notice” means the notice dated 2 July 2006 (Ref. GDO/ERU/0706/879 and 886) issued by the Authority including a draft version of this Order;

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“Order” means this Reference Interconnection Offer Order;

“Preliminary Findings” means the Authority’s letter to Batelco dated 18 May 2006 (ref ERU/0506/100) setting out the Authority’s initial assessment of the Reference Interconnection Offer;

“Preliminary Response” means Batelco’s response dated 18 June 2006 (ref CL/177/06) to the Authority’s Preliminary Findings;

“PSTN” means a Public Telecommunications Network that operates using switched-circuit technology (public switched telephone network);

“Reference Interconnection Offer” means the reference interconnection offer of Batelco dated 15 February 2006;

“Response” means Batelco’s response dated 10 July 2006 (ref CL/202/06) to the Authority’s Notice;

“Telecommunications Law” means the law promulgated by Legislative Decree No. 48 of 2002;

“TPR” means a Batelco tariff proposal request (followed by the Batelco reference number for the request); and

“TX” means a tandem exchange, being the switch in a PSTN that operates in the level above the PSTN’s LXs.

“WACC” means weighted average cost of capital.

2. Legal Basis

Whereas:

- 2.1 Batelco provides services pursuant to section 80 of the Telecommunications Law and the Authority granted various licenses to Batelco on 21 June 2003, including a national fixed services license, which were re-issued with corrections required to ensure the licenses complied with the provisions of section 80 of the Telecommunications Law, on 14 June 2005;
- 2.2 although Batelco has a legitimate expectation that the terms of its licenses as re-issued on 14 June 2005 be reviewed to consider appropriate amendments to take into account the reliance it placed between 21 June 2003 and 14 June 2005 on the form of licenses issued to it on 21 June 2003, the Authority is satisfied that no determination included in this Order relies upon license conditions in the correct licenses so as to prejudice Batelco’s interests;
- 2.3 section 3(c)(1) of the Telecommunications Law grants the Authority the power to make such regulations, orders and determinations as may be necessary for the implementation of the Telecommunications Law, including determinations in connection with, amongst other things, interconnection, access to the network and its facilities, services tariffs, access to real property and promotion of competition;
- 2.4 section 3(c)(13) of the Telecommunications Law grants the Authority the power to encourage, regulate and facilitate adequate access and interconnection arrangements, including, where necessary, enforcing the sharing by public telecommunications operators of the benefits of facilities and property;

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- 2.5 section 57(b) of the Telecommunications Law provides, amongst other things, that where a public telecommunications operator is determined by the Authority to have a dominant position in a particular telecommunications market, it shall within three months of such determination and every six months thereafter publish a reference interconnection offer;
- 2.6 the terms and tariffs of the reference interconnection offer are subject to approval by the Authority, as section 57(b) of the Telecommunications Law gives the Authority the power to issue an order specifying the terms and tariffs that it does not approve;
- 2.7 by the Dominance Determination the Authority determined that Batelco has dominance in certain interconnection markets;
- 2.8 on 15 February 2006 Batelco submitted its Reference Interconnection Offer, which includes its reference interconnection offer that it was required to publish pursuant to section 57(b) of the Telecommunications Law, to the Authority;
- 2.9 Batelco has submitted further information on its costs and charging principles to enable the Authority to understand the basis for the tariffs included in the Reference Interconnection Offer, as detailed in this Order;
- 2.10 the 2004 regulatory accounts submitted by Batelco in support of the Reference Interconnection Offer are un-audited. [.....]* The Authority is currently considering the best approach to take with reference to the audited 2004 Accounts;
- 2.11 under the Accounting Separation Regulation and Accounting Separation Determination the 2005 Accounts will be audited, enabling the Authority to have more confidence in the veracity of the forward-looking incremental costing information used to justify the fairness and reasonableness of tariffs included in further reference interconnection offers submitted for approval in accordance with the Telecommunications Law and the Dominance Determination;
- 2.12 the Authority when carrying out the review of the Offer and in deciding what if any changes to mandate was is required to do is to decide whether it considers that any tariffs or terms are unreasonable, unfair or discriminatory. When doing so, the Authority must:
- (a) pursuant to its obligations under section 3(a) of the Telecommunications Law, act reasonably and in a non-discriminatory manner and fully explain its consideration that any tariffs or terms are unreasonable, unfair or discriminatory in order to comply with its obligation under the same provision to exercise its powers in a transparent manner; and
 - (b) pursuant to its obligations under section 3(b) of the Telecommunications Law, ensure that in considering the terms or tariffs its consideration is best calculated to:
 - (i) protect the interests of subscribers or users as set out in section 3(b)1; and
 - (ii) promote effective and fair competition as set out in section 3(b)2;

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- (c) the Authority is satisfied that in carrying out its duties and exercising its powers under the Telecommunications Law, the tariff and terms as amended by this Order:
- (i) are reasonable and non-discriminatory and in compliance with section 3(a) of the Telecommunications Law, as demonstrated by the reasoning and explanations included in this Order;
 - (ii) are fully explained and reasoned in this Order in compliance with the requirements for transparency in compliance with section 3(a) of the Telecommunications Law;
 - (iii) are made in that tariffs or terms which are unreasonable, unfair or discriminatory would prejudice the interests of subscribers and would lead to subscribers or users being charged higher tariffs than the Authority is satisfied would be fair or reasonable for the relevant service that require interconnection between operators;
 - (iv) are made in that tariffs and terms which are unfair or unreasonable or discriminatory would not promote fair and effective competition amongst new and existing licensed operators; and
 - (v) quality of service related terms that it considers to be reasonable, fair and non-discriminatory would, if not ordered by the Authority, result in an interconnection regime that would be prejudicial to efficient and effective interconnection, so being indirectly prejudicial to subscribers' or users' interests,

so that its actions in considering that any tariffs or terms, or the lack of any terms, are unreasonable, unfair or discriminatory are in compliance with its obligations under section 3(b) of the Telecommunications Law ;

- 2.13 subject to the Authority complying with its duties and exercising its powers in accordance with the Telecommunications Law, and the obligations it has under administrative law, nothing in the Telecommunications Law prevents the Authority from examining terms or tariffs that are included in the Approved Reference Interconnection Offer or earlier reference interconnection offers, whether expressly approved or not. On the contrary the Authority is entitled to, and it could be argued that it has a positive duty in each case it is called upon to exercise its powers in relation to the examination of a reference interconnection offer, consider the offer as if it were the first time it had done so. This is consistent with the obligation of dominant operators under section 57(b) to publish an offer every six months after the initial publication following which the authority may issue an order if it does not approve the offer. If this was not the case the legislator would have no reason to impose an obligation to re-publish the offer but would have simply imposed an obligation to publish an offer for new services or changes to the previous published offer only. Also, if the Authority was not to consider on each occasion the reference interconnection offer, it would be failing to ensure that the offer is amended to meet the needs of the market as these develop and it would be ignoring the experience acquired from the

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implementation of previous offers. In effect it would be failing to meet its duties under the Telecommunications Law. What may be fair, reasonable and non-discriminatory in 2004 or 2005 is not necessarily fair, reasonable and non-discriminatory in 2006. This is particularly the case for newly liberalized telecommunications market such as the one of the Kingdom of Bahrain.

- 2.14 the Authority, having conducted an initial assessment of the Reference Interconnection Offer, set out its findings and the terms and tariffs that it was minded to specify pursuant to the second paragraph of section 57(b) of the Telecommunications Law in the Preliminary Findings, which Batelco was requested to respond to within 30 days. Batelco responded to the Authority's Preliminary Findings with its Preliminary Response;
- 2.15 In response to the Batelco's Preliminary Response the Authority made some changes to its Preliminary Findings and issued to Batelco a Notice with a copy of the Draft Order. The Authority then requested Batelco to respond within 7 days to the Authorities Notice and Draft Order;
- 2.16 Batelco's Response to the Notice and Draft Order and some of Batelco's comments included in the Preliminary Response have been incorporated by the Authority into this final Order and in particular the Authority is satisfied that:
- (a) Batelco has had sufficient time (being from 30 May 2005, the first publication date of the Approved Reference Interconnection Offer, to 15 February 2006, the date of the Reference Interconnection Offer) to prepare justification for the terms and tariffs it wished to include in Reference Interconnection Offer, and had sufficient time to be able to explain to the Authority the costs bases upon which tariffs included in the Reference Interconnection Offer have been calculated (being from 15 February 2006 to 10 July 2006, the closing date for responses to the Notice and Draft Order);
 - (b) where the Authority has chosen not to accept the costs and other accounting information submitted by Batelco in justification for its tariffs included in the Reference Interconnection Offer, the Authority has set out in full its reasoning and analysis in the Preliminary Findings and in paragraph 4 of this preamble to the Order to explain why these tariffs are determined not to be fair, reasonable and non-discriminatory for the purposes of section 57(b) of the Telecommunications Law;
 - (c) issues that were resolved for the purposes of previous reference interconnection offers, including the Approved Reference Interconnection Offer, have been raised appropriately and re-examined by the Authority in its review of the terms and tariffs of the Reference Interconnection Offer in order for the Authority to determine whether it should issue an order specifying terms and tariffs pursuant to its powers under section 57(b) of the Telecommunications Law as explained above. The decision of the Authority in previous cases did not create a legitimate expectation that the Authority would fetter its discretion in the future in carrying out its duties in accordance with the law. On the contrary there have been neither express nor implied representations to Batelco at any stage that the Authority would not review on each occasion the

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reference interconnection offer published and would form a view based on all the relevant facts and information available to it at the time. Also, in relation to previous reference interconnection offers published by Batelco, following discussions, Batelco has changed parts of the offer which were previously approved. This also demonstrates that there was never a legitimate expectation created that the Authority would not seek or mandate changes to previously approved reference interconnection offers;

- (d) as section 57(d)1 of the Telecommunications Law states that publication of a reference interconnection offer is effected by sending a copy to the Authority for approval, which may then result in the Authority deciding to issue an order pursuant to the second paragraph of section 57(b) of the Telecommunications Law, then although there is no express provision in the Telecommunications Law requiring any reference interconnection offer to be approved for it to be effective, as stated by Batelco in its Response, the Authority is acting within its duties at section 3(a) of the Telecommunications Law in determining pursuant to its powers under section 3(c)(1) of the Telecommunications Law that a reference interconnection offer requires Authority approval before it comes into effect in order to provide the telecommunications market with certainty over the status of that reference interconnection offer;
- (e) whilst tariffs included in a reference interconnection offer are not required under the first paragraph of section 57(b) of the Telecommunications Law to be based upon long run incremental costs, or even to be fair, reasonable and non-discriminatory, the Authority in carrying out its duty to approve the Reference Interconnection Offer must adopt an assessment criterion that complies with the requirements of section 3(a) of the Telecommunications Law;
- (f) in assessing whether to approve tariffs in the Reference Interconnection Offer, the criterion derived from the third paragraph of section 57(b) of the Telecommunications Law, that tariffs be “fair and reasonable and non-discriminatory” and “based on forward-looking incremental costs”, is a criterion that complies with section 3(a) of the Telecommunications Law;
- (g) having reviewed the original text of the law in Arabic and the translation of the same as a result of the Preliminary Response, according to the terms of the third paragraph of section 57(b) of the Telecommunications Law the Authority is not required to internationally benchmark tariffs where the Authority specifies those tariffs based upon forward-looking incremental costs;¹
- (h) in specifying tariffs that are fair, reasonable and non-discriminatory and based upon forward-looking incremental costs pursuant to the

¹ The authoritative Arabic version of the Telecommunications Law states that “tariffs shall be based on forward-looking incremental costs **or** by benchmarking such tariffs against tariffs in comparable Telecommunications markets”. The English translation of the Telecommunications Law published by the Authority for information purposes will be amended accordingly.

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terms of the third paragraph of section 57(b) of the Telecommunications Law, the Authority has complied with the Telecommunications Law;

- (i) the Response merely asserts that the principles set out in sub-paragraphs (e) to (h) are “wrong at law” without any explanation or reasons. The Authority is satisfied that it is exercising its duties and powers in accordance with the Telecommunications Law and properly guided by it;
- (j) in setting out its justification for any order to specify terms and tariffs, there is no legal requirement under the Telecommunications Law for the Authority to address all submissions made by Batelco to the Authority concerning interconnection in general, rather than the specific terms of the Reference Interconnection Offer, and that in particular the Authority is not required to review documents generated by Batelco dating from and including the following:
 - (i) its submissions on interconnection issues in connection with Interim Interconnection Order No. 1 of 29 November 2003 or subsequent interim interconnection orders;
 - (ii) its submission on interconnection made in reference to its first reference offer in April and May 2004;
 - (iii) its submissions made in connection with an interconnection dispute referred to the Authority in July 2004; or
 - (iv) its submissions made in connection with an interconnection dispute referred to the Authority in March 2005,

because as the terms of sections 57(b) and 57(d)1 of the Telecommunications Law require the Authority to approve the current published reference interconnection offer, the Authority must examine each offer published by a dominant operator pursuant to section 57(b) of the Telecommunications Law as a separate, stand-alone document. However, the Authority is required to take into account all representations and submissions of Batelco that are relevant to the reference interconnection offer at issue, in order for the Authority to comply with its duties at section 3(a) of the Telecommunications Law – in this respect the Authority is satisfied that addressing the representations and submissions of Batelco that are relevant to the Reference Interconnection Offer, and not reviewing all representations and submissions made to the Authority in respect of any other reference interconnection offers or interconnection disputes, is a fair, efficient, effective, regular and reasonable exercise of its powers and carrying out of its duties under the Telecommunications Law;

- (k) as Batelco received notice of the Authority’s views in the Draft Order, repeated at sub-paragraph (j) of this Order, relating to the relevance of Batelco’s submissions on interconnection made since November 2003 to the Reference Interconnection Offer and chose not to detail any specific concerns or issues in its Response other than to reiterate its demand that the Authority state in the Order reasons for accepting or rejecting all of Batelco’s past submissions, Batelco has not been

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prejudiced by the Authority's decision not to review these past submissions and in using its discretion not to review every submission made by Batelco since November 2003 relating to interconnection the Authority is acting within its duties at section 3(a) of the Telecommunications Law, in particular to carry out its duties efficiently and effectively;

If Batelco considers that these representations were still appropriate to be made, it could resubmit these with all relevant explanations as to the reasons why Batelco still considers them to be appropriate and applicable to the Reference Interconnection Offer under consideration.

- 2.17 pursuant to the second paragraph of section 57(b) of the Telecommunications Law, which provides that the Authority may issue an order specifying the terms and tariffs of a reference interconnection offer if it does not approve the contents of such an offer, the Authority issued the Notice, which included a Draft Order in substantially the terms of this Order; and
- 2.18 having taken into account Batelco's Response, submitted in writing within the fixed period term notified to it by the Authority by the Notice,

the Authority has decided to issue this Order to determine the terms and tariffs of the Reference Interconnection Offer which it does not consider to be fair, reasonable or non-discriminatory and, in the case of certain tariffs, based on forward-looking incremental costs.

3. Reference Interconnection Offer Terms

The Authority's reasons for ordering changes to the terms of the Reference Interconnection Offer are as follows:

3.1 Reference Interconnection Offer — Main Body

(a) Supply obligation

As the Authority has received a number of requests for clarification of the status of reference interconnection offers, the Authority is satisfied that, to be fair and reasonable, clause 3.1 (b) needs to be amended to emphasize that the Reference Interconnection Offer is exactly that, an offer.

The Authority is satisfied that the terms of section 57(c) of the Telecommunications Law do not require Batelco to contract upon the exact terms of its reference interconnection offers, only that it is obliged to offer these terms and, pursuant to section 57(a) of the Telecommunications Law, to negotiate interconnection in good faith. The Authority is also satisfied that whereas Batelco is required to ensure that its reference interconnection offer contains non-discriminatory terms, as set out at section 57(b) of the Telecommunications Law, this would not of itself prevent Batelco from entering into an interconnection agreement with different terms, provided that those terms were not discriminatory and or anti-competitive so as to be unlawful under section 65(b)2 of the Telecommunications Law.

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The Authority is aware that at least one operator has entered into an agreement with Batelco on amended reference interconnection offer terms and it is satisfied that the agreement is legally valid under section 57(c) of the Telecommunications Law.

In its Response, Batelco asserts under this heading that the Authority had not taken into account all of the terms of section 57 of the Telecommunications Law. The Authority is satisfied that:

- (i) its reasons for determining that clause 3.1(b) of the main body of the Reference Interconnection Offer set out above take into account the relevant sub-sections of section 57; and
- (ii) in the absence of any explanation from Batelco to justify its assertion, the Authority considers that it is exercising its powers under section 3(a) of the Telecommunications Law in making the determination in order to carry out its duties efficiently and effectively.

(b) **Timing to form a supply agreement and implement interconnection**

The Authority is satisfied that the implementation timescales are unfair and unreasonable in that they are too long. In requiring a new timetable, the Authority has taken into account that Batelco's reference interconnection offer has been in operation since 15 June 2004, and that Batelco has the experience of interconnecting with fourteen (14) operators thus far. Taking this into account, it appears to the Authority that there will be fewer requests for interconnection that will be classified as being "Complex Cases" and that as Batelco's experience of interconnection develops, most new interconnection arrangements are likely to fall within the "Simple Case" scenario. In neither its Preliminary Response nor its Response did Batelco explain or justify its assertion that the new timetable would be unreasonable. The Authority is satisfied that reduced timescales do not in any event prejudice Batelco, given that the relevant obligation on Batelco in the Reference Interconnection Offer (clause 6 of the main body) does not impose a contractual obligation to meet the implementation timetables, and, following the issue of this Order, any obligation at clause 11 of the Supply Terms, as amended by this Order, provide only for a reasonable endeavors obligation to meet the timescales set out in the clause.

3.2 Reference Interconnection Offer — Service Descriptions 1-9 and 1-10

The Authority is satisfied that these descriptions suggest that the services were withdrawn as of the date of the Reference Offer. As the services were formally withdrawn by the reference offer dated 15 August 2005, the descriptions ought to be amended accordingly. The Authority acknowledges that Batelco has stated in its Preliminary Response and its Response that it agrees to this amendment, but in the absence of the submission by Batelco of a corrected reference interconnection offer, the Authority is satisfied that including this provision in the Order is appropriate.

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The Authority is satisfied that this and any other indemnity included in the Reference Interconnection Offer needs to be qualified by a reasonable endeavors obligation to mitigate against the effects of the occurrence of the indemnified event, in paragraph 6 of Schedule 2 being the breach of the relevant representations or warranties, in order for the indemnity to be fair and reasonable.

The Authority is satisfied that an obligation to mitigate is a standard qualification made in large-scale commercial agreements between parties with equivalent bargaining power where indemnities are accepted in place of warranties, and that permitting one dominant party who is the beneficiary of the majority of any indemnities not to have an obligation to mitigate, would be unfair.

(b) Paragraph 10

The Authority is satisfied that to be fair and reasonable to operators requesting a service, the first part of paragraph 10 ought to be amended to fix the period in which a Service Request shall be deemed to conform with the requirements of Schedule 2 and to limit any implication that Batelco has a discretion about finding a Service Request to be non-conforming other than in a limited set of circumstances. The Authority is satisfied that its amendment does not create confusion, as asserted by Batelco in its Preliminary Response, so as to make the amendment unfair and unreasonable.

3.4 Reference Interconnection Offer — Schedule 4 Billing and Collection

The Authority is satisfied that it is unfair and unreasonable that an innocent Billing Party should incur the costs of preparing an Estimated Invoice as a result of the default of the other party, without being able to recover an administrative fee for doing so. Although the Authority has no grounds not to accept Batelco's statement in its Preliminary Response and the Response that as there is no evidence that parties are defaulting on their obligations to prepare invoices the Authority considers that this could still happen in the future and the innocent billing party should be protected. It has therefore decided to include its proposed amendment in the Order to permit an innocent Billing Party to recover an administrative fee. In setting this fee at BD 1,000, the Authority is satisfied it is a fair and reasonable penalty to act both as compensation for the administration carried out by the innocent Billing Party and as a deterrent to errant Billing Parties. As such, it is not a fee that is capable of being determined by reference to the actual costs incurred by any Billing Party in preparing an Estimated Invoice. The Authority notes that this provision is mutual, and if both Billing Parties' billing systems are operating correctly, it should not be invoked. The Authority is satisfied that this provision ensures that neither party to an interconnection agreement relies upon the other to provide billing information upon which to calculate settlement between the parties.

3.5 Reference Interconnection Offer — Schedule 8 Part 1 Dictionary

The Authority is satisfied that it is not fair and reasonable to permit a dominant operator subject to the requirements of section 57 of the Telecommunications Law to be able to contract for the provision of interconnection services without some basic level of obligation or service level for the implementation of those interconnection services. As it appears to the Authority that clause 6 of the main body of the Reference Interconnection Offer is expressly stated to be for guidance only, an explicit obligation is required in the Supply Terms. The Authority notes that Batelco claims in its Response that the inclusion of service levels as determined by the Authority are unfair and unreasonable, but in the absence of any alternative proposal for service levels that Batelco considers would be appropriate and any explanation as to why any proposed service levels are unreasonable, the Authority is satisfied that including in this Order the service levels included in the Draft Order is an appropriate and proportional regulatory action.

In the Preliminary Findings the Authority suggested that the implementation of initial services should be subject to the same obligations and service levels as defined for New Services in Schedule 9 of the Reference Interconnection Offer, which could have been achieved by the amendment of the definition of *New Services* in the Reference Interconnection Offer. As Batelco set out in its Preliminary Response its objections to the Authority's suggestion to amend the definition of *New Services* in order to create this minimum obligation, it appears to the Authority that a new definition of *Offered Services* is required, together with a new express service level obligation in the Supply Terms in terms similar to clause 11.11 of Schedule 9 of the Reference Interconnection Offer (as described below), to ensure that initial services, or services accepted by the Access Seeker for the first time under the Supply Agreement, should be subject to minimum quality of service and service level obligations. The Authority notes the comments made on the proposed new definition in the Response, as a result the Authority has amended the definition from that which appeared in the Draft Order.

In its Response, Batelco [.....]* It appears to the Authority the all service descriptions should include service levels in respect of the services included within them and that the Supply Terms should include standard service levels, which may be amended by particular terms in service descriptions, concerning the implementation of services. To the extent that the Reference Interconnection Offer does not contain such service levels, the Authority is satisfied that the offer is unreasonable and unfair. However, the Authority has decided only to act on the implementation service levels in this Order. The Authority will continue to review the case to Batelco for the inclusion of service levels for all services (currently only included in ISI and CSI service descriptions). Were Batelco itself to offer service levels to other operators, then the Authority would not have to mandate that service levels are included in reference interconnection offers. The Authority notes that it is international common practice that all interconnection services included in interconnection offers that dominant operators are required to publish include service levels.

The Authority is satisfied that the definition of *Reference Interconnection Offer* ought to be amended, so that it does not lead to misunderstandings as to the basis upon which any Supply Agreement is made and the terms and conditions incorporated into any Supply Agreement. A recent dispute

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brought to the attention of the Authority suggests that the basis upon which any Supply Agreement can be amended by application of Clause 2.3 of the Supply Terms is causing confusion.

3.6 Reference Interconnection Offer — Schedule 9 Supply Terms**(a) General Comments**

The Authority notes Batelco's comments in the Preliminary Response suggesting that the lack of complaint (to Batelco) concerning the terms of reference interconnection offers appears to Batelco that it is then unfair or unreasonable of the Authority to seek to make a determination to amend those terms. Clearly, parties can and do submit to the Authority in confidence enquiries concerning reference interconnection offers without first complaining to Batelco. In such cases, the Authority is satisfied that it is not acting unreasonably or unfairly in taking into account such complaints.

In addition, the lack of complaint to Batelco (or the Authority) on any particular term or lack of a term in a reference interconnection offer is not, as implied by some of Batelco's comments in the Preliminary Response or Response, grounds for determining that intervention by the Authority is unfair and unreasonable. Indeed, the inequality of bargaining power between Batelco and Licensees may inhibit those Licensees from making such complaints.

The Authority, in fulfilling its duties and exercising its powers set out in the Telecommunications Law, may of its own motion, determine changes needed in the Reference Interconnection Offer under consideration to ensure that it remains fair, reasonable and non-discriminatory, particularly as the market develops. The Law requires the Authority to undertake a review every six months. The Authority considers that a review of the Reference Interconnection Offer should not remain 'static' in that the Authority should not review only those changes as proposed by Batelco.

(b) Clause 2: Commencement, Duration and Review

The Authority is satisfied that to ensure continuity of supply and contractual certainty, the Supply Agreement should have a potentially indefinite term. Creating uncertainty by having a modest fixed term of one (1) year, which allows either party to force negotiation of new terms by letting a supply agreement expire, the Authority considers may be unfair and unreasonable.

The Authority notes that in the Response Batelco argues that some Licensees prefer short fixed terms. The Authority's decision to require the Reference Interconnection Offer to provide, but not to mandate, for an indefinite term does not prevent such operators negotiating a fixed term, particularly as Batelco's Response implies that Batelco would agree to such an amendment to the Reference Interconnection Offer. Parties should be able to agree to the duration of 1 year or indefinite as they consider appropriate.

As explained above, the contractual mechanism for the amendment or variation of signed Supply Agreements appears to the Authority to be causing confusion. In particular, the approval process for each bi-annual republication of the reference interconnection offer, to be joined by a reference access offer, appears to be confusing parties. It

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seems to the Authority that to ensure fairness and reasonableness, clear variation terms should be drafted. The Authority notes the comments in Batelco's Response asserting that there is no confusion, but the Authority as a result of its own experience of handling Licensees' questions on the role of reference interconnection offers is satisfied that a change in terms is appropriate.

The Authority also recognizes that, as the regulated document is an offer only, the parties to any Supply Agreement can negotiate their own terms and tariffs. Consequently, it appears to the Authority fair and reasonable that notice should be given by Batelco of any increase in tariffs, given that there are only a limited number of interconnecting parties and any person can request a copy of the Reference Interconnection Offer under section 57(d)3 of the Telecommunications Law.

The Authority is satisfied that to be fair and reasonable that in line with standard commercial terms of supply for long-term supply agreements, a Licensed Operator as a customer should be capable of refusing any material increase in tariffs, even if these are approved by the Authority, by terminating the Supply Agreement in part with respect to the relevant services subject to the material tariff increases. Otherwise a Licensed Operator, as a party to an agreement with an indefinite term, would be locked into accepting the provision of Services at tariffs that it considered not to be in its commercial interests. This would necessarily be a last resort for the Licensed Operator, as by definition Batelco is only subject to the requirement to publish the Reference Interconnection Offer because at this stage it is dominant. A Licensed Operator is therefore not likely for the time being to have alternative suppliers it can turn to for any terminated or partially terminated Services.

It also appears to the Authority that partial termination by the Licensed Operator for material increases in tariff should not lead to it paying Batelco any form of compensation or penalty (unless discounts have been previously agreed based on contract length and their resultant cost savings). Here, the Authority is not implying, as seems to be asserted by Batelco in the Preliminary Response, that the Authority considers material increases in tariffs to amount to material breaches. Rather, the Authority is satisfied that for the Reference Interconnection Offer to be fair and reasonable, it should include the right for a Licensee to terminate a services subject to increased tariffs without incurring a monetary penalty.

The Authority accepts that the requirement to give notice of changes in tariffs places an administrative burden upon Batelco, but the Authority is satisfied that this flows from the initial finding of dominance in the relevant market that requires Batelco to publish the Reference Interconnection Offer under section 57 of the Telecommunications Law. The Authority is also satisfied that any obligation to notify proposed changes in tariffs is standard contract management practice in major supply agreements and with the availability of electronic communications is not an onerous task.

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(c) **Clause 8: Network Alterations and Changes**

The Authority is satisfied that, to be fair and reasonable, notice of alterations should as far as practicable be six months. If urgent or regulatory circumstances arise that make this impractical, then an “as far as practicable” phrase provides sufficient protection from an absolute obligation. Any notice should contain the necessary technical detail to enable the recipient to understand what is being contemplated. If this detail is not available, it appears to the Authority that it is unfair, as it suggests notice is being given in unwarranted circumstances. Although Batelco asserted its lack of acceptance of this amendment in its Preliminary Response or Response, in the absence of any argument as to why the proposed amendment was unfair or unreasonable, the Authority is satisfied that including the amendment in this Order is appropriate.

(d) **Clause 9: Equipment Responsibilities**

The Authority is satisfied that it is fair and reasonable to expect an owner of equipment to accept fair wear and tear of premises or equipment, rather than a more onerous reinstatement obligation. The Authority is satisfied that the terms for the Access Provider carrying out removal work on behalf of an Access Seeker should, to be fair and reasonable, require the Access Provider to carry out any associated reinstatement and only be permitted to recover its reasonable costs, to incentivise the Access Provider taking due care to remove equipment with the minimum amount of collateral damage.

The Authority notes that Batelco accepted this amended in its Preliminary Response, but in the absence of an amended Reference Interconnection Offer and the unexplained change in position in the Response, where Batelco stated that in connection with this clause “the [Authority] has not made a case for the proposed order”, the Authority is satisfied that it is appropriate to include this amendment in this Order.

(e) **Clause 11: New Services**

The Authority is satisfied that minimum service levels for the implementation of Offered Services should be included in the Reference Interconnection Offer, as currently there appear to be no obligations on Batelco to provide Offered Services within any timetable. The Authority notes Batelco’s resistance to the imposition of service levels, as set out in the Preliminary Response or Response, but in the absence of any constructive proposals from Batelco on alternative service levels or a timetable for the introduction of appropriate service levels, the Authority is satisfied that the service levels set out in this Order should be imposed on Batelco. In any event, the Authority notes that Batelco only has a “reasonable endeavors” obligation to meet these implementation timescales. The Authority does not agree with the Batelco supposition that a reasonable endeavors obligation requires Batelco to maintain high stock levels of equipment in case a Licensee were to order a new services and is satisfied that a reasonable endeavors obligation does not require, as suggested by Batelco in its Response, that Batelco “keep an inventory of equipment on hand to implement

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interconnection...[which] inventory of equipment it may never be called to use.”

The Authority is satisfied that the requirement for monthly forecasts of new service demands are unfairly onerous on Access Seekers, and so the requirement is amended to quarterly. However, Access Seekers should ensure that quarterly statistics are realistic and as accurate as possible.

4. Reference Interconnection Offer Tariffs

The Authority’s reasons for ordering changes to the tariffs of the Reference Interconnection Offer are as follows:

4.1 Quality of Information Provided by Batelco

The Authority is satisfied that for specific charges insufficient or incomplete supporting documentation was supplied by Batelco to fully assess the charges as they appear in the Reference Interconnection Offer.

Regarding those charges for which full supporting documentation was supplied by Batelco, it appears to the Authority that many of the charges contained errors and inconsistencies which resulted in a charging process that yields unfair and unreasonable tariffs in the Reference Interconnection Offer. These included:

- (a) the application of incorrect costing principles in the formation of specific tariffs;

Example: Failure to calculate CSI/ISI costs on an LRAIC basis.

- (b) lack of conformity between the cost calculations within the Reference Interconnection Offer and the amounts recorded in the underlying accounts (including arithmetical mistakes);

Example: Calculation of costs of CSI links.

- (c) lack of conformity between Reference Interconnection Offer costs and Reference Interconnection Offer charges;

Example: Calculation of charge for DQ Services.

- (d) use of inappropriate network architecture to define the services to be costed and charged;

Example: Definition of PSTN call termination services.

- (e) use of inappropriate network elements for charge calculation; and

Example: Calculation of PSTN call termination charges.

- (f) use of inappropriate traffic measurements to calculate per minute charges.

Example: Specification of interconnection-specific elements of call termination charges.

The Authority is therefore satisfied that some tariffs in the Reference Interconnection Offer do not appear to reflect their underlying costs as they

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adopt incorrect cost concepts. The Authority is satisfied that this may lead to some of the charges over-recovering their cost and to a level of tariffs that may be incorrect. Were possible the Authority has attempted to correct these charges to better reflect their cost of provision.

4.2 Level of Documentation Provided by Batelco

For all those increased charges that Batelco proposed in the Reference Interconnection Offer the Authority asked Batelco to supply supporting documentation to audit the proposed increase (or in some cases the introduction of a new charge).

In response to the Authority's request Batelco supplied various documents (presentations, spreadsheets, explanatory notes, etc.). The chronology of the main supporting documents supplied by Batelco is listed as follows:

- (a) on 15 February 2006 Batelco submitted the Reference Interconnection Offer to the Authority;
- (b) on 19 February 2006 Batelco submitted a copy of the 2004 Accounts to the Authority with fully allocated cost (FAC) based transfer charges. These accounts were a replica of the FAC 2004 Accounts which Batelco had previously supplied to the Authority on 2 July 2005;
- (c) on 21 February 2006, Batelco submitted to the Authority a presentation entitled *RIO Clarifications to Authority* which covered the calculation of Interconnect Specific costs;
- (d) on 1 March 2006, at the request of the Authority, Batelco supplied a copy of the 2004 Accounts to the Authority with long-run average incremental cost (LRAIC) based transfer charges. These accounts had not been previously supplied;
- (e) on 1 March 2006, Batelco also supplied a second copy of the FAC 2004 Accounts. However, the FAC version of 1 March 2006 did not correspond to the FAC version of 19 February 2006 (and hence 2 July 2005);
- (f) on 13 March 2006, in response to Authority questions on the LRAIC 2004 Accounts of 1 March 2006, Batelco submitted to the Authority an second "adjusted" copy of the LRAIC 2004 Accounts. The second copy of the LRAIC 2004 Accounts dated 13 March 2006 did not correspond to the previous version of LRAIC 2004 Accounts dated 1 March 2006;
- (g) on 6 April 2006, in response to specific questions by the Authority in relation to services contained in the RIO, Batelco submitted to the Authority a supporting document entitled *20060406 RIO costing response to Authority.xls*; and
- (h) on 9 April 2006, in response to specific questions by the Authority in relation to services contained in the RIO, Batelco submitted to the Authority a supporting document entitled *20060214 RIO (CSI and ISI).xls*.

The above costing information relates mainly to Batelco's un-audited Regulatory accounts of 2004.

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On 22 June 2006 the Authority received a copy of Batelco's 2004 audited Accounts. [.....]*

[.....]*

[.....]

Until and at such time as the Authority's concerns [.....]* have been settled, the Authority considers it more appropriate to continue to use costs derived from Batelco's 2004 un-audited Accounts unless and until Batelco is in a position to supply 2005 Accounts.

Despite Batelco submitting those documents listed above and their 2004 un-audited accounts, the Authority found that in the Reference Interconnection Offer a large number of the charges that appeared were not supported, or were only partially supported, by the appropriate accounting data.

The table below indicates how information deficiencies have affected the Authority's ability to assess charges in the Reference Interconnection Offer.

Schedule	Service	Assessment
1-1.4	2 Mbit/s Switch Port	Limited supporting documentation provided to audit proposed increase in charge
1-1.6	2 Mbit/s Switch Port (Bilateral)	Limited supporting documentation provided to audit or support proposed increase in charge
1-1.7	Adjusted Port Rental	No supporting documentation provided to audit or support proposed new charge
1-1.9	Route Type Change	Limited supporting documentation provided to audit proposed increase in charge
1-1.10	Switch Port Rearrangement	Limited supporting documentation provided to audit proposed increase in charge
1-1.11	Switch Link Connection	Limited supporting documentation provided to audit proposed increase in charge
1-1.12	Signal Link Rental	Limited supporting documentation provided to audit or support proposed increase in charge
1-1.13	Signal Link Re-arrangement	Limited supporting documentation provided to audit proposed increase in charge

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Schedule	Service	Assessment
1-2.1	CSI Link Interconnection (2 Mbit/s)	Limited supporting documentation provided to audit proposed increase in charge
1-2.7	Additional CSI Link (2 Mbit/s)	Limited supporting documentation provided to audit proposed increase in charge
1-2.8	Additional CSI Link (2 Mbit/s)	Error in Pricing
1-2.9	Inter-building Link Arrangement	Limited supporting documentation provided to audit proposed increase in charge
1-2.10	Signaling Link Connection	Limited supporting documentation provided to audit proposed increase in charge
1-2.12	Signaling Link Re-arrangement	Limited supporting documentation provided to audit proposed increase in charge
1-2.13	Route Type Change	Limited supporting documentation provided to audit proposed increase in charge
1-2.14	Switch Port Arrangement	Limited supporting documentation provided to audit proposed increase in charge
2-1.1	PSTN transit	No supporting documentation provided to audit proposed increase in charge
2-3.12	Scheduled Installation	Limited supporting documentation provided to audit proposed increase in charge
2-3.13	Scheduled Installation	Limited supporting documentation provided to audit proposed increase in charge
	Engineer/ Construction Costs	Limited supporting documentation provided to audit proposed increase in charge

For those charges not listed in the table above, in which Batelco did not implement any change in the level of the charge between that proposed in the Reference Interconnection Offer and the Approved Reference Interconnection Offer, the Authority did not ask Batelco for supporting documentation to audit the charge.

The following section sets out the basis upon which the charges were assessed for which documentation was supplied. Here adjustments to some of the proposed charges were undertaken by the Authority in order to correct

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inconsistencies in the underlying cost data supplied by Batelco. Each adjustment is explained in detail below.

4.3 Generic Problems of Charges with Documentation Supplied

The supporting documentation for some of the termination charges in the Reference Interconnection Offer allows these services to be reconciled with the 2004 Accounts, with the exception of a few network component charges which do not appear in the 2004 Accounts.

From this assessment, the Authority is satisfied that there are three generic problems with the Reference Interconnection Offer charges for which supporting documentation has been supplied:

(a) Inappropriate Specification of Network Architecture in the Derivation of Charges

The services provided by Batelco, for which the Reference Interconnection Offer sets out charges, are specified in relation to the architecture of Batelco's network and the points of interconnection that they intend to serve. The Authority has found several instances where it appears that this network architecture is specified in ways that could disadvantage interconnecting operators and may lead to them paying higher interconnection charges than should be the case.

For example:

- (i) International Interconnection Services assumes that the interconnection operator is a mobile operator, when this may not be the case;
- (ii) MMS Terminating Access charges appear to be based on unnecessary multiple use of platforms; and
- (iii) PSTN Terminating Access charges are based on the specification that the interconnecting operator must interconnect at the GMSC, which is a mobile switch.

Where appropriate, the Authority has implemented element-based charging to correct for incorrect network architecture.

(b) Interconnection-specific Costs

A number of interconnection charges consist of two kinds of cost: conveyance; and an allocation of Batelco's general costs in the form of an Interconnection-specific cost (ISC). The Authority is satisfied that applying Batelco's Interconnection-specific costs on each of the charges in which they have been included will lead to an over-recovery of ISCs by Batelco. The Authority's reasoning is explained below.

An ISC represents an allocation of the general costs of those activities carried out because of the existence of wholesale markets. It accounts for a considerable proportion of Interconnection and Access charges. The ISC of [..]* Fils per minute as proposed by Batelco is calculated by dividing the cost associated with providing interconnection services by the volume of interconnection traffic, not including Batelco's own retail traffic.

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The Authority is satisfied that recovering the ISC solely on the basis of interconnection traffic would discriminate against interconnecting operators and put them at a cost disadvantage relative to Batelco (Retail).

In 2004 Ofcom issued a Consultative Document and Statement on BT's ISC (or PPP) charges (Review of BT's product management, policy and planning (PPP) charge – Statement, 30 July 2004, at http://www.ofcom.org.uk/consult/condocs/rev_bt_pm/statement/statement.pdf) which concluded that, as BT Retail did not pay ISC to BT Network, this gave it a competitive advantage over its competitors who pay ISC charges. As a result, Ofcom directed BT that ISC should be pooled with equivalent ISC costs incurred by BT Wholesale in the provision of narrowband interconnection services to BT Retail and recovered across all call minutes that are conveyed or transit on BT's network.

The Authority is satisfied that the principle of non-discrimination as outlined by Ofcom should apply in the calculation of ISC for Batelco, and Batelco's proxy ISC based on this principle is shown below.

Batelco provided a document to support its Interconnection Specific calculations (hardcopy of a presentation entitled *Reference Interconnection Offer Clarifications to Authority*). However, this Presentation represented only a summary of the cost components/categories included by Batelco to calculate its ISCs of [...] * Fils per minute.

The Authority has not been able to validate any of Batelco's cost figures in this Presentation with Batelco's 2004 Accounts or any other costing documentation supplied by Batelco to assess the Reference Interconnection Offer.

To support the ISC in the Approved Reference Interconnection Offer, Batelco supplied a document (*Costing Tra information.xls*), which provided the Authority with a detailed breakdown of Batelco's ISCs. This document also included detailed costs relating to Batelco's billing system. These costs were provided by Batelco on a forward-looking (three year amortization) basis.

Although the two documents were submitted by Batelco to support the level of ISCs they seem to the Authority to be inconsistent in their calculation of amount of interconnection traffic.

The table below presents a summary of cost and traffic information that was supplied by Batelco from the two documents.

Document	Total Cost	Traffic	ISC
Reference Interconnection Offer Clarifications to Authority	BD [...]*	[...]*	[...]* Fils/min
Costing Authority information	BD [...]*	[...]*	[...]* Fils/min

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The Authority notes that for the Reference Interconnection Offer Batelco stated its Interconnect Specific Costs (ISCs) to be BD [...] and used the number of interconnection minutes of [...] (this is inconsistent with the volume of traffic of [...] minutes supplied to the Authority by Batelco to calculate the ISC for the Approved Reference Interconnection Offer) to give a per minute charge of [...] Fils.

However, as stated above, the Authority is satisfied that Batelco cannot discriminate between its own retail business and OLOs by calculating the ISC based on interconnection minutes to other operators only. Therefore, the Authority is satisfied that the total number of minutes should apply. For 2004 the total amount of fixed line traffic as supplied by Batelco is [...] minutes (Ref: CL/71/06, 14 March 2006, *Information Relating to the Assessment of the Interconnection Reference Offer*). Dividing Batelco's Interconnection Specific Costs of BD [...] by these minutes yields a per minute ISC of [...] Fils.

However, this cost per minute is not a forward-looking cost, since it is based on 2004 traffic volumes. In calculating a forward-looking ISC the Authority has allowed Batelco's higher ISCs of BD [...] as being forward-looking and used Batelco's 2005 fixed line traffic of [...] (Ref: CL/71/06, 14 March 2006, *Information Relating to the Assessment of the Interconnection Reference Offer*). This yields a forward-looking per minute ISC of [...] Fils.

The Authority is therefore satisfied that the charge of [...] Fil per minute, which is currently applied by Batelco to interconnection charges, is sufficient to allow Batelco to recover its ISCs.

(c) **Rounding up or down of Charges**

The Authority notes that a number of charges have been rounded to one decimal place. For example, employing Batelco's methodology, the actual PSTN Termination charge should be [...] Fils per minute. In the Reference Interconnection Offer Batelco has rounded this charge up to [...] Fils per minute. This procedure is unsatisfactory to the Authority and in all cases where rounding has occurred the Authority is satisfied that it is more appropriate to accept the *actual* charge and not the *rounded* charge.

4.4 **Assessment of Individual Service Description Charges**

For the services below, the Authority has been able to identify specific failings in the calculation of Reference Interconnection Offer charges. However, on the basis of the accounting, and other information, provided the Authority has been able to recalculate some of the charge to correct for their specific failing. Such reworking is, of course, dependent on the veracity of the underlying accounting information provided by Batelco of which the Authority has concerns with as discussed in Section 4.6 below.

(a) **Interconnection Link charges**

The Authority found that the main difficulty with assessing charges for interconnection links concerned the quality of underlying data provided by Batelco. For these services Batelco provided data that

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included many accounting errors, or that the Authority was unable to understand (as a consequence of no explanation being given) or that did not replicate the costs claimed to lie behind the Reference Interconnection Offer charges.

Primarily, the Authority was unable to link these charges to Batelco's 2004 Accounts. Three charges (ISI 2 Mbit/s Unilateral Switch Port (1-1.5); CSI 2 Mbit/s Link Interconnection (1-2.2); and Signaling Link (1-2.11)) could be reconciled to a summary worksheet provided by Batelco, but this summary worksheet could not be linked back to the 2004 Accounts and also contained a number of errors, including errors of calculation.

Moreover, the charges that appeared in this summary worksheet appeared to be inconsistent. For example, the cost of E1 signaling ([...]* BD per year) was greater than the link cost of a 2Mbit circuit ([...]* BD per year), despite the fact that the 2 Mbit/s circuit provides 30 X 64 kbit/s voice circuits, compared with 1 X 64 kbit/s circuit for the E1 signaling circuit.

The Authority notes that in Paragraph 45 of Batelco's Response Batelco refers to "...a signaling module at a cost of BD [...]*." In Batelco's supporting spreadsheet (*20060214 RIO (CSI and ISI).xls*) provided to the Authority on 9 April 2006 the cost of BD [...]* as calculated by Batelco is shown as [...]*. The Authority does not know of the origin of these numbers as no explanation has been provided by Batelco. In the Response Batelco goes further to state "...estimate [of the charge] from [.....]* (sic) attached..." The Authority notes that no such attachment accompanied Batelco's Response.

Therefore, despite Batelco's replies, the Authority is unable to verify the cost basis of a number of Interconnection Link Charges and the Authority is satisfied that the current charges as they appear in the approved Reference Interconnection Offer should remain for the time being as being fair and reasonable.

(b) **PSTN Terminating Access Charges**

For the PSTN Termination charge, the Authority is satisfied that the route factors used imply that an interconnecting operator *must* interconnect at the GMSC level. The Authority is concerned that interconnection at the GMSC level is the only option for fixed-line operators who would normally interconnect at either the LX or TX level.

The Authority notes that in the Interim Interconnection Order dated 29 November 2003 (Ref: LAU DC 153) the Authority mandated for interconnection at the GMSC for MTC-Vodafone only as part of the interim settlement of the interconnection dispute between Batelco and MTC-Vodafone. Interconnection at the GMSC has not been mandated for any other licensed operator.

The Authority is satisfied that allowing interconnection at three levels (GMSC, Single Tandem, Double Tandem) is non-discriminatory, is technically justified and promotes efficient investment decisions by market participants.

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The Authority notes that allowing interconnection at TX or GMSC enables interconnecting operators to choose an interconnection level appropriate to their needs. The Authority also notes that it would be possible for an operator to interconnect at more than one level. Thus, a mobile operator may interconnect at the GMSC level and at the TX level, depending on where the call terminates.

In paragraph 47 of its Response Batelco states:

“Batelco does not have a double tandem switches (sic) higher in the network hierarchy than single tandem switches. The multi-layered approach is a network hierarchy that exists in other countries (especially those with a larger area) and it appears that the TRA may be simply assuming that such a network architecture applies in Bahrain”.

The Authority is satisfied that Batelco is confusing “double tandem switches” with double tandem interconnection (i.e. where an interconnecting call passes through two tandem switches at the same level in the network hierarchy) which is commonly used across countries in the European Union.

In its Response Batelco explains that it uses an averaging approach to calculating the use of network elements and that this is a reasonable and appropriate solution. The Authority notes that if an average is used to determine network element use, then it would not expect to see that all route factors used by Batelco are equal to one (1). If some calls involve the use of two (2) TXs and other calls involve the use of just one (1), the average use of a TX would be greater than one (1).

Therefore, the Authority is satisfied that PSTN Terminating Access should be split into three network element charges. The tables below show the network charges that appear to the Authority to be fair and reasonable:

- (i) Single Tandem PSTN Terminating Access charge of [...] Fils/minute, calculated as set out in the table below:

Network Component	Component Charge	Route Factor
RLU	[...] Fils	1.00
RLU – LX	[...] Fils	1.00
LX	[...] Fils	1.00
LX – TX	[...] Fils	1.00
TX	[...] Fils	1.00
Total Network Charge	[...] Fils	N/A

- (ii) Double Tandem PSTN Terminating Access [...] Fils/min, calculated as shown in the table below:

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Network Component	Component Charge	Route Factor
RLU	[...]* Fils	1.00
RLU – LX	[...]* Fils	1.00
LX	[...]* Fils	1.00
LX – TX	[...]* Fils	1.00
TX	[...]* Fils	2.00
TX – TX	[...]* Fils	1.00
Total Network Charge	[...]* Fils	N/A

and

- (iii) GMSC PSTN Terminating Access (equivalent to Batelco's proposed PSTN Terminating Access network charge of [...]* Fils/minute).

The Authority is satisfied that to these network charges no more than [...]* Fil/min could be added to represent the cost of Interconnection-specific services.

A potential (fixed-line) interconnecting operator would not have to choose between Single Tandem PSTN Terminating Access or Double Tandem PSTN Terminating Access. Instead, the appropriate charge would apply depending on whether an individual call required two TXs or one TX to complete the call.

(c) **Mobile Terminating Access Charge**

The Authority has been able to reconcile the network component of this charge of [...]* Fils per minute with Batelco's 2004 Accounts. Consequently, the proposed reductions in the Reference Interconnection Offer network charge for Mobile Termination is accepted.

The Authority is satisfied that to this network charge no more than [...]* Fil/min could be added to represent the cost of Interconnection-specific services as calculated above.

In its Response Batelco states that "[i]f element based interconnection is used as a basis for terminating PSTN charges, then it would be unfair and unreasonable for the TRA not to apply element based charges for mobile call termination." In the Response Batelco also suggested that element based mobile termination charges should include a TX and GMSC – TX transmission link and that the cost of these network elements was provided in Annex A of the Response. The Authority notes that Annex A did not contain the network element costs of either a TX or GMSC – TX link. Despite this the Authority is satisfied that the most efficient network architecture for element based mobile termination charging should include only one GMSC and not two GMSCs, as proposed by Batelco.

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The Authority was unable to reconcile the Paging Platform charge of [...] Fils with the 2004 Accounts. Also, Paging Terminating Access is costed, according to Batelco, on an LRAIC basis. Whilst the Authority accepts that paging traffic volumes have more than likely decreased, in the long run Batelco should reduce the paging capacity in its network. Seen in this context, a paging platform cost of [...] Fils per call seems excessive.

Therefore, despite Batelco's supporting documentation, the Authority is unable to fully verify the cost basis of the Paging Terminating Access charge. Until Batelco is able to provide the appropriate costing information that takes into account the likely long-term reduction in Batelco's paging traffic volumes it appears to the Authority that the current charge as listed in the Reference Interconnection Offer dated 30 May 2005 should remain for the time being as being fair and reasonable.

(e) SMS Terminating Access Charge

Batelco has stated that the network cost of SMS Termination has increased by [...] Fils for the following reasons:

- (i) Batelco capitalised two major network expansions in the last two years;
- (ii) routing has been altered because the SMS platform was moved from the MSC to the GMSC; and
- (iii) Batelco omitted to include cost elements relating to the HLR platform and links to the HLR in the last Reference Interconnection Offer costing exercise. This year, they have been incorporated.

The Authority does not dispute these as valid reasons for a charge increase. However, the Authority is satisfied that there are other factors that would offset any underlying increase in the cost of terminating an SMS.

The Authority is satisfied that the sum product of the Network Component per SMS cost and associated Route Factor as submitted by Batelco yields a cost per SMS of [...] Fils per SMS, not [...] Fils as calculated by Batelco. Batelco's calculation therefore must contain a summation error and the Authority is satisfied that the correct network charge should be [...] Fils per SMS.

However, the Authority is also satisfied that the Route Factors as provided by Batelco are equivalent to saying there are [...] SMSs per minute. It is not clear to the Authority how the voice minute approximation referred to by Batelco was derived, as no supporting documentation was provided by Batelco.

The Authority is aware that one of the main challenges in network costing is converting network costs into per minute charges. This is achieved by using route factors and route-factored minutes. Because voice traffic and short messages are measured in different units

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(minutes versus messages), it is difficult to convert Base Station (BS) costs into per unit costs. This requires either:

- (i) separating BS costs into BS Costs for Voice and BS Costs for SMS; or
- (ii) converting Short Messages into equivalent units of voice traffic.

In the absence of Batelco's providing a description of its methodology, the Authority has constructed the following methodology to convert Short Messages into equivalent units of voice traffic and thereby estimate the number of voice minutes that apply to SMS termination:

- (i) GSM transmits at a data rate of 270.83 kbit/s. Each Frame consists of 1,250 bits. Therefore, 216.67 Frames ($270.83 \div 1250$) are transmitted each second.
- (ii) Each Time Slot (TS) consists of 148 information-bearing bits (8.25 bits are for guard purposes). 114 bits are used for either voice or data (including SMS), which are transmitted as two 57-bit sequences.
- (iii) One TS can transmit 24,738 bit/s (= 114×216.67). If the maximum length of an SMS is 1,120 bits, then it takes 0.045 seconds ($1,120 \div 24,738$) to transmit an SMS.
- (iv) Hence, 22 SMSs can be transmitted in one second in any one TS, or 1,320 SMSs per minute. Therefore, the cost of an SMS should be 1/1320th of the cost of a minute of mobile voice traffic.
- (v) According to Batelco's 2004 Accounts (FAC), there were [...] SMSs in 2004. This is equivalent to [...] minutes of voice traffic.

The Authority has reworked the network charge for an SMS taking into account the methodology above. Where Batelco has allocated a route factor of 1 the Authority has recalculated this to be 0.00076 (1/1320), as the Authority is satisfied that the cost of an SMS message is 1/1320th of a mobile minute. Applying the lower route factors now gives a lower SMS network charge than that supplied by Batelco. The table below shows the network charge that the Authority is satisfied as being fair and reasonable.

Network Component	Component Charge	Route Factor
BTS	[...]* Fils	0.00076
BTS – BSC	[...]* Fils	0.00076
BSC	[...]* Fils	0.00076
BSC – MSC	[...]* Fils	0.00076
MSC	[...]* Fils	0.00076
MSC – GMSC	[...]* Fils	0.00076

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Network Component	Component Charge	Route Factor
GMSC – SMS Platform	[...]* Fils	2.00
SMS Platform	[...]* Fils	1.00
HLR/VLR	[...]* Fils	1.00
GMSC	[...]* Fils	0.00076
Total Network Charge	[...]* Fils	N/A

The Authority is satisfied that to this network charge no more than [...]* Fil/min could be added to represent the cost of Interconnection-specific services as calculated above.

In its Response, Batelco states that the 2004 Audited Accounts show an SMS platform cost of [...]* Fils per SMS compared to [...]* Fils per SMS in the 2004 Un-audited Accounts, and which the Authority has used to calculate the SMS termination charge. The Authority received Batelco's Audited 2004 Accounts on 22 June 2006 and thereafter tabled a number of questions to Batelco in relation to these accounts.

On 25 July 2006 Batelco replied with a summary of the [.....]* The Authority is currently considering the best approach to take with reference to the audited 2004 Accounts;

Until and at such time as the Authority's concerns with the [.....]* have been settled, the Authority considers it more appropriate to continue to use costs derived from Batelco's 2004 un-audited Accounts unless and until Batelco is in a position to supply 2005 Accounts.

(f) MMS Terminating Access Charge

The Authority is satisfied that there are a number of concerns with this charge:

- (i) because MMS termination is an interconnection service and not an access service, the proposed charge basis for this charge which seems to be FAC based, should in fact be LRAIC based;
- (ii) the proposed total charge of [...]* Fils (as per the supporting documentation provided by Batelco and based on the 2004 Accounts) does not match the charge of [...]* Fils that appears in the Reference Interconnection Offer. The Authority cannot account for the difference in the two charges;
- (iii) incorrect route factors have been used. The route factors correspond to [...]* MMSs per minute. The actual number is smaller. For example, if a 4+1 GPRS handset is used together with coding scheme CS-3, then the data transmission rate is 42 kbit/s. At this rate it would take 24 seconds to download 1 MB of data or 2.4 seconds for 0.10 MB. Hence it is possible to download 25 0.10 MB MMSs per minute. The Authority has

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adjusted the route factors to reflect 25 MMSs per minute instead of [...] MMSs per minute as proposed by Batelco; and

- (iv) the MMS Platform and SMS Platform have been used twice in calculating the MMS Terminating Access charge. The Authority is satisfied that this is not correct for MMS which terminates only on Batelco's mobile network. The Authority has removed those network elements that appear twice in the MMS termination charge.

The Authority has reworked the MMS network charge to take into consideration points 3 and 4. The table below shows the network charge the Authority is satisfied as being fair and reasonable.

Network Component	Component Charge	Route Factor
MMS Platform	[...] MMS	1.00
SMS Platform	[...] MMS	1.00
GMSC – SMS Platform	[...] MMS	1.00
GMSC	[...] MMS	0.04
MSC – GMSC	[...] MMS	0.04
MSC	[...] MMS	0.04
BSC – MSC	[...] MMS	0.04
BSC	[...] MMS	0.04
BTS – BSC	[...] MMS	0.04
BTS	[...] MMS	0.04
BSC – GPRS Platform	[...] MMS	1.00
Total Network Charge	[...] MMS	N/A

The Authority is satisfied that to this network charge no more than [...] MMS/min could be added to represent the cost of Interconnection-specific services as calculated above.

(g) **Inter-Operator Transit Access Services**

For this service the network components and route factors present in Batelco's 2004 Accounts imply connection to a mobile switch only. To allow fixed-line interconnection it appears to the Authority that Inter-Operator Transit Access tariffs should be split into two network element tariffs – fixed and mobile. The network elements for both Mobile and Fixed Transit Access Services are directly reconcilable back to Batelco's 2004 Accounts. The tables below show the network charges that the Authority is satisfied as being fair and reasonable.

- (i) Inter-Operator Transit Access Services (Fixed)

Network Component	Component Charge	Route Factor
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TX	[...]* Fils	2.00
TX - TX	[...]* Fils	1.00
Total Network Charge	[...]* Fils	N/A

and

(ii) Inter-Operator Transit Access Services (Mobile)

Network Component	Component Charge	Route Factor
TX	[...]* Fils	1.00
TX – GMSC	[...]* Fils	1.00
GMSC	[...]* Fils	1.00
Total Network Charge	[...]* Fils	N/A

The Authority is satisfied that to these network charges no more than [...]* Fil/min could be added to represent the cost of Interconnection-specific services as calculated above.

(h) **Directory Enquiries Services**

The Authority is satisfied that Batelco has indicated in supporting documentation a network charge of [...]* Fils per minute, whereas in the calculation of the final charge, Batelco instead uses a network charge of [...]* Fils. The Authority does not know how the charge of [...]* Fils is calculated.

Therefore, despite Batelco's supporting documentation, the Authority is unable to verify the cost basis of the Directory Enquiry Service charge and the Authority is satisfied that the current charge as it appears in the Reference Interconnection Offer dated 30 May 2005 should remain for the time being as being fair and reasonable.

(i) **International Inbound Call charges – Fixed**

The Authority has two concerns with this charge:

- (i) the network component costs of this charge are reconcilable with the 2004 Accounts, but Batelco's proposed network charge of [...]* Fils per minute is different from the network component costs of [...]* Fils per minute as calculated from the 2004 Accounts by the Authority. The Authority has not been provided with an explanation as to the difference in the two charges; and
- (ii) the route factors provided imply that an interconnecting operator must interconnect at the GMSC level in order to deliver an international call onto Batelco's network. Again, as the GMSC is a mobile switch, the Authority is satisfied that this is inappropriate.

The Authority has reworked this charge to remove the GMSC component, as it is satisfied that it is the incorrect network

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architecture for a fixed operator. The table below shows the network charge that the Authority is satisfied as being fair and reasonable.

Network Component	Component Charge	Route Factor
RLU	[...]* Fils	1.00
RLU – LX	[...]* Fils	1.00
LX	[...]* Fils	1.00
LX – TX	[...]* Fils	1.00
TX	[...]* Fils	1.00
Total Network Charge	[...]* Fils	N/A

The Authority is satisfied that to this network charge no more than [...]* Fil/min should be added to represent the cost of Interconnection-specific services as calculated above.

(j) **International Inbound Call charges - Mobile**

The Network Component costs for International Inbound Call charges – Mobile are all reconcilable with Batelco's 2004 Accounts. However, the network charge of [...]* Fils per minute as calculated from the 2004 Accounts by the Authority differs from Batelco's proposed network charge of [...]* Fils. The Authority is satisfied that this difference cannot be accounted for.

The table below shows the network charge that that the Authority is satisfied as being fair and reasonable.

Network Component	Component Charge	Route Factor
TX	[...]* Fils	1.00
TX – GMSC	[...]* Fils	1.00
GMSC	[...]* Fils	1.00
HLR/VLR	[...]* Fils	1.00
GMSC – MSC	[...]* Fils	1.00
MSC	[...]* Fils	1.00
MSC – BSC	[...]* Fils	1.00
BSC	[...]* Fils	1.00
BSC – BTS	[...]* Fils	1.00
BTS	[...]* Fils	1.00
Total Network Charge	[...]* Fils	N/A

The Authority is satisfied that to this network charge no more than

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[...]* Fil/min could be added to represent the cost of Interconnection-specific services as calculated above.

(k) PSTN Transit Service

Batelco did not provide supporting documentation to assess the charge for the PSTN Transit Service as part of the proposed Reference Interconnection Offer of 15 February 2006. However, as part of a previously supplied document (Ref: Interconnect Prices Submitted by Batelco Adjusted for Differences in Treatment by TRA) in support of the Approved Reference Interconnection Offer, Batelco supplied Network Components and Route Factors that the Authority has used to calculate the PSTN Transit Service charge. The table below presents the Network Components and Route Factors used by Batelco in support of its current PSTN Transit Service charge of [...]* Fils per minute together with the Network Component costs from the FAC 2004 Accounts.

Network Component	Charge Component	Route Factor
RLU	[...]* Fils	2.00
RLU – LX	[...]* Fils	2.00
LX	[...]* Fils	2.00
LX – TX	[...]* Fils	2.00
TX	[...]* Fils	1.00
Total Network Charge	[...]* Fils	NA

As can be seen, the cost of the PSTN Transit Service as calculated by the Authority does not equal Batelco's proposed charge of 7.10 Fils per minute as it appears in the Reference Interconnection Offer dated 15 February 2006. The Authority has not been provided with an explanation as to the difference in the two charges.

The Authority is satisfied that to this network charge no more than [...]* Fil/min could be added to represent the cost of Interconnection-specific services as calculated above.

The following section assesses the charges for which incomplete documentation was supplied, but by which the Authority was still able to determine the validity of the charge. Finally, the section considers those charges for which limited supporting documentation was supplied and of which the Authority was not able to determine the validity, thus having no option but to maintain the current charge as it stands in the Approved Reference Interconnection Offer.

4.5 Assessment of those charges with an incomplete level of documentation supplied**(a) Those charges whose validity the Authority was able to assess**

In a preliminary response to the Authority's findings submitted by Batelco on 18 June 2006, Batelco provided the TRA with a breakdown

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of [...] rates for 2004 and, importantly, the charges in the Reference Interconnection Offer to which these [...] rates should apply. These services are shown in the table below:

Schedule	Service	Source of Assessment of Charge
1-1.4	2 Mbit/s Switch Port	[...] rates for [...] as shown in Spreadsheet 20060618 TRA BTC [...] Rates provided by Batelco
1-1.9	Route Type Change	[...] rates for [...] as shown in Spreadsheet 20060618 TRA BTC [...] Rates provided by Batelco
1-1.10	Switch Port Rearrangement	[...] rates for [...] as shown in Spreadsheet 20060618 TRA BTC [...] Rates provided by Batelco
1-1.11	Signal Link Connection	[...] rates for [...] as shown in Spreadsheet 20060618 TRA BTC [...] Rates provided by Batelco
1-1.13	Signal Link Rearrangement	[...] rates for [...] as shown in Spreadsheet 20060618 TRA BTC [...] Rates provided by Batelco
1-2.1	CSI Link Interconnection (2 Mbit/s)	[...] rates for [...] as shown in Spreadsheet 20060618 TRA BTC [...] Rates provided by Batelco
1-2.7	Additional CSI Link (2 Mbit/s)	[...] rates for [...] as shown in Spreadsheet 20060618 TRA BTC [...] Rates provided by Batelco
1-2.8	Additional CSI Link (2 Mbit/s)	Error in previous calculation
1-2.9	Inter-building Link Arrangement	[...] rates for [...] as shown in Spreadsheet 20060618 TRA BTC [...] Rates provided by Batelco
1-2.10	Signaling Link Connection	[...] rates for [...] as shown in Spreadsheet 20060618 TRA BTC [...] Rates provided by Batelco
1-2.12	Signaling Link Rearrangement	[...] rates for [...] as shown in Spreadsheet 20060618 TRA BTC [...] Rates provided by Batelco
1-2.13	Route Type Change	[...] rates for [...] as shown in Spreadsheet 20060618 TRA BTC [...] Rates provided by Batelco
1-2.14	Switch Port Arrangement	[...] rates for [...] as shown in Spreadsheet 20060618 TRA BTC [...] Rates provided by Batelco

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Schedule	Service	Source of Assessment of Charge
2-3.12	Scheduled Installation	[...]* rates for [...]* as shown in Spreadsheet 20060618 TRA BTC [...]* Rates provided by Batelco
2-3.13	Scheduled Installation	[...]* rates for [...]* as shown in Spreadsheet 20060618 TRA BTC [...]* Rates provided by Batelco
	Engineer/Construction Costs	[...]* rates for [...]* as shown in Spreadsheet 20060618 TRA BTC [...]* Rates provided by Batelco

Although the Authority considers that the documentation provided by Batelco was incomplete and insufficient for assessing the charges in the table above, the Authority also recognizes that, as a consequence of wage inflation in the Kingdom of Bahrain, a number of charges that involve engineering and installation work could have increased over the past year.

Therefore, based on an increase in [...]* (as specified in Batelco spreadsheet 20060618 TRA BTC [...]* rates) resulting in [...]* and [...]* costs changing from BD [...]* per hour to BD [...]* per hour, the Authority accepts the proposed increases in the charges for the above services as outlined in the Reference Interconnection Offer.

(b) **Those charges whose validity the Authority was not able to assess**

In a preliminary response to the Authority's findings submitted by Batelco on 18 June 2006, Batelco provided the TRA with a spreadsheet which displayed 2004 FAC for CSI and ISI link services. This was the second spreadsheet supplied by Batelco in relation to the costs for these services, the first having been supplied by Batelco on 9 April 2006. The assessment of interconnection link charges in relation to the spreadsheet supplied on 9 April 2006 has been considered above in the section '**Assessment of Those Charges with Documentation Supplied**'. The spreadsheet supplied on 18 June relates to the following charges:

Schedule	Service	Source of Assessment of Charge
1-1.5	2 Mbit/s Switch Port (Unilateral)	200606 18 TRA BTC ISI CSI Links.xls
1-1.6	2 Mbit/s Switch Port (Bilateral)	200606 18 TRA BTC ISI CSI Links.xls
1-1.12	Signal Link Rental	200606 18 TRA BTC ISI CSI Links.xls
1-2.2	CSI Link Interconnection (2 Mbit/s)	200606 18 TRA BTC ISI CSI Links.xls

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Schedule	Service	Source of Assessment of Charge
1-2.11	Signaling Link Rental	200606 18 TRA BTC ISI CSI Links.xls

Despite Batelco's supporting documentation, the Authority is still unable to verify the cost basis of the Interconnection Link charges listed above. The same reasons apply as to why the Authority is still unable to verify the cost basis of the Interconnection Link charges as those outlined in Section 4.4(a); primarily the Authority was unable to link these charges to Batelco's 2004 Accounts. Therefore, the Authority is satisfied that the current charges as they appear in the Approved Reference Interconnection Offer should remain for the time being as being fair and reasonable.

4.6 **Other Concerns with the 2004 Accounts**

The Authority is satisfied that there are other concerns arising out of the 2004 Accounts submitted by Batelco in order to support the charges that appear in the Reference Interconnection Offer. The nature of these concerns is explained below. The Authority has, at this stage, not corrected the charges in the Reference Interconnection Offer for any of the concerns with the 2004 Accounts that are listed below.

The reason for this is that the Authority expects that some of the concerns listed below will be corrected when the annual audit process of the regulatory accounts is complete. However, the Authority notes that, after the audit process is undertaken, should the following concerns continue in subsequent reference interconnection offers, the Authority will be minded to consider the appropriate action to fully assess these cost concerns and implement the appropriate corrections where they appear justified.

(a) **The Value of the Access Network**

An inspection of the 2004 Accounts by the Authority revealed that 2004 FAC and LRAIC Fixed Assets figures for the Access Network were identical (BD [.....]*). Given that:

- (i) the FAC 2004 Accounts are prepared on an [.....]* basis;
- (ii) the LRAIC 2004 Accounts are prepared on a [.....]* basis; and
- (iii) there exist common and joint costs between the Access Network and the Core Network,

the Authority would expect the value of Fixed Assets for the Access Network on an LRAIC [.....]* basis to be different from the Access Network on an FAC [.....]* basis.

(b) **The Value of Fixed Assets**

The Authority is satisfied that the replacement value of Batelco's Fixed Assets is BD [.....]* more than the historical Net Book Value (NBV) of these assets. The Authority is unable to account for the difference. As a consequence of the generally accepted fact of falling network costs in telecommunications, the Authority is satisfied that this is incorrect. The Authority is satisfied that the, replacement value

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of Batelco's Fixed Assets should be lower than the historical NBV of these assets. This is considered in more detail below.

The Authority has based its assessment of the net value of Batelco's Fixed Assets on information/data supplied by Batelco. The table below presents the Net Replacement Cost (NRC) and Net Book Value (NBV) of Fixed Assets as set out in Batelco's 2004 Accounts (LRAIC and FAC). The source reference for LRAIC NRC as supplied by Batelco to the Authority is *20060313 AS Accounts to Authority_v3.5 2004_Amended LRAIC.xls*. The source reference for FAC NBV as supplied by Batelco to the Authority is *AS Accounts to Authority_v2.2 2004_FAC_01032006.xls*.

As shown in the table, the difference between the NBV and NRC for Batelco's Business Units appears to be BD [.....]*.

Business Unit	Net Replacement Cost (LRAIC)	Net Book Value [.....]*	Difference
Access	BD [.....]*	BD [.....]*	-
Network	BD [.....]*	BD [.....]*	BD [.....]*
International	BD [.....]*	BD [.....]*	BD [.....]*
Mobile	BD [.....]*	BD [.....]*	BD [.....]*
Other Network	BD [.....]*	BD [.....]*	BD [.....]*
Fixed Retail	BD [.....]*	BD [.....]*	-
Int'l Retail	BD [.....]*	BD [.....]*	-
Internet	BD [.....]*	BD [.....]*	-
Mobile Retail	BD [.....]*	BD [.....]*	-
Other	BD [.....]*	BD [.....]*	-
Combined	BD [.....]*	BD [.....]*	-
VAS	BD [.....]*	BD [.....]*	-
Wholesale	BD [.....]*	BD [.....]*	-
Total	BD [.....]*	BD [.....]*	BD [.....]*

The Authority notes that in its Preliminary Response, Batelco states that it "provided the TRA with a document on 13 March 2006 which, by oversight, appears to have [only] included fixed assets assessed on a [.....]* basis." This, Batelco implies, may be the reason for the lower value of the assets valued on a [.....]* basis. However, the document of 13 March 2006 has not been used by the Authority in compiling the table above, as this document contains no balance sheet information on the value of Batelco's fixed assets.

(c) **Returns to Working Capital**

According to Batelco's 2004 Annual Report/Accounts, Mean Capital Employed (MCE) amounted to BD 305,933,000. Working Capital

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came to BD 128,559,000, representing 42.02% of Means Capital Employed.

The figures above from the Annual Report are virtually similar to those presented in Batelco's 2004 Accounts. As a result, the Authority is satisfied that virtually all of Batelco's Working Capital balances in its 2004 Accounts represent cash balances. As such, these cash balances are earning regulated rates of return of between 9% and 13% depending on the business. While the Authority accepts that a portion of working capital is allocated to the different businesses, the table of Statutory Accounts Working Capital Balances below shows that Batelco's working capital balances are considerably higher than those of all operators except Jordan Telecom.

Telco^{2, 3}	Working Capital (000s)	Mean Capital Employed (000s)	WC/MCE
Batelco	128,205	305,926	41.91%
BT ⁴	-2,165,000	14,489,000	14.94%
Eircom	197,000	2,860,000	6.89%
JT ³	151,637	428,824	35.36%
KCH ³	6,038	441,921	1.37%
Maltacom	10,433	86,940	12.00%
STC	1,737,227	33,558,586	5.18%
SingTel	-282,000	28,738,000	0.98%

The Authority notes that in the assessment of its proposed Reference Interconnection Offer charges Batelco has *not* made any adjustments to its Working Capital balances. The Authority is satisfied that Batelco's Working Capital balances under LRAIC may not conform to those that would be incurred by an efficient operator seeking to optimize working capital balances.

The table below presents Working Capital balances for each Business Unit presented in Batelco's 2004 LRAIC Regulated Accounts⁵.

Business Unit	MCE	WC	WC/MCE%
Access	BD [.....]*	BD [.....]*	[.....]*%

² Taken from 2005 Annual Reports except Maltacom (2004) and STC (2004).

³ JT – Jordan Telecom, KCH = Kingston Communications Hull, STC= Saudi Telecom Company.

⁴ For 2004, BT's WC = £2,027m, MCE = £18,042m and WC/MCE = 11.23%.

⁵ In calculating Working Capital balances, Batelco includes Inter-business Balances (IBBs). Across all Business Units the sum of IBBs is zero. However, the inclusion of IBBs does impact net Working Capital balances for individual Business Units.

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Business Unit	MCE	WC	WC/MCE%
Network	BD [.....]*	BD [.....]*	[.....]*%
International	BD [.....]*	BD [.....]*	[.....]*%
Mobile	BD [.....]*	BD [.....]*	[.....]*%
Other Network	BD [.....]*	BD [.....]*	[.....]*%
Fixed Retail	BD [.....]*	BD [.....]*	[.....]*%
Int'l Retail	BD [.....]*	BD [.....]*	[.....]*%
Internet	BD [.....]*	BD [.....]*	[.....]*%
Mobile Retail	BD [.....]*	BD [.....]*	[.....]*%
Other	BD [.....]*	BD [.....]*	[.....]*%
Combined	BD [.....]*	BD [.....]*	[.....]*%
VAS	BD [.....]*	BD [.....]*	[.....]*%
Wholesale	BD [.....]*	BD [.....]*	[.....]*%
Total	BD [.....]*	BD [.....]*	[.....]*%

The Authority notes that overall Working Capital balances account for [...] percent of total Mean Capital Employed for all Business Units and [...] percent for regulated Business Units.

The table below presents Working Capital balances for each Business Unit presented in Batelco's 2004 FAC Regulated Accounts:

Business Unit	MCE	WC	WC/MCE%
Access	BD [.....]*	BD [.....]*	[.....]*%
Network	BD [.....]*	BD [.....]*	[.....]*%
International	BD [.....]*	BD [.....]*	[.....]*%
Mobile	BD [.....]*	BD [.....]*	[.....]*%
Other Network	BD [.....]*	BD [.....]*	[.....]*%
Fixed Retail	BD [.....]*	BD [.....]*	[.....]*%
Int'l Retail	BD [.....]*	BD [.....]*	[.....]*%
Internet	BD [.....]*	BD [.....]*	[.....]*%
Mobile Retail	BD [.....]*	BD [.....]*	[.....]*%
Other	BD [.....]*	BD [.....]*	[.....]*%
Combined	BD [.....]*	BD [.....]*	[.....]*%
VAS	BD [.....]*	BD [.....]*	[.....]*%
Wholesale	BD [.....]*	BD [.....]*	[.....]*%

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Business Unit	MCE	WC	WC/MCE%
Total	BD [.....]*	BD [.....]*	[.....]*%

The Authority notes that overall Working Capital balances account for [.....]* percent of total Mean Capital Employed for all Business Units and [.....]* percent for regulated Business Units.

Batelco did not provide a breakdown of Current Assets into cash, accounts receivable, etc., within its 2004 Accounts (LRAIC or FAC). Without knowing this, it is difficult for the Authority to assess how much cash is contributing to the overall Working Capital balances. However, the Authority observes that Batelco's 2004 Annual Report/Accounts do provide such a breakdown.

According to Batelco's 2004 Annual Report/Accounts, MCE amounted to BD 305,933,000. Working Capital came to BD 128,559,000, representing 42.02 percent. Current Assets not including cash amounted to BD 45,972,000. Cash amounted to BD 127,958,000. Current Liabilities amounted to BD 45,371,000. As a result, virtually all of Batelco's (Net) Working Capital balances in its 2004 Annual Report/Accounts represent cash balances.

Assuming the same distribution applies to Batelco's 2004 LRAIC Accounts, and no other basis is available to the Authority currently, nor did Batelco argue otherwise, then the Authority considers that virtually all Working Capital balances represent cash balances. Because Batelco applies its regulated Weighted Average Cost of Capital (WACC) to Means Capital Employed, this implies that Batelco is earning a return equal to the appropriate WACC on cash balances.

(d) Specification of Forward-Looking Costs

The Authority is satisfied that Batelco's proposed charges (and hence its methodology for calculating interconnection charges) are not forward-looking in any meaningful sense of the word. The charges are based on costs and traffic volumes for the year 2004. The Authority has not found evidence of any attempts being made to take wage and equipment cost trends, productivity improvements, traffic volume increases and economies of scale into account.

(e) Incorrect Cost Basis

The following charges which appear under Section 1 of the Reference Interconnection Offer 'Interconnection Services' have been stated by Batelco to have an FAC costing base (Ref: CL/89/06, Question. A3). As outlined in Section 57(b) of the Telecommunications Law, all interconnection services should be based on *forward-looking incremental costs*, which the Authority is satisfied means long-run average incremental cost (LRAIC). [.....]* Therefore, the Authority is satisfied that as the three following services are interconnection services they should be based on LRIAC:

- (i) Service Description 1.1 ISI Links;
- (ii) Service Description 1.2 CSI Links;

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(iii) Service Description 1.11 MMS Delivery Service;

The Authority expects these services to have a LRAIC basis to the charge in all subsequent reference interconnection offers published pursuant to section 57(b) of the Telecommunications Law. However, at this stage, for the purpose of the Order those charges as concluded in Section 4.4(a) for Service Descriptions 1.1 and 1.2 and Section 4.4(f) for the Service Description 1.11 will apply.

Additionally, the following services appear in the Reference Interconnection Offer under Section 2 'Access Services':

- (A) Service Description 2.1: PSTN Transit Service; and
- (B) Service Description 2.9: Inter-operator Transit Access Service.

The Authority is satisfied that the two services above are interconnection services and not access services, and should have a LRAIC costing base and not an FAC one as currently applies. These services are considered in detail below.

4.7 PSTN Transit Service

The Authority is satisfied that for the purposes of the Telecommunications Law, the PSTN Transit Service ("**PTS**") is not an access service, but an interconnection service. PTS is a specialized form of termination service that enables end users with the same operator with non-Batelco exchange lines to communicate with each other via interconnecting with Batelco's network. The definition of "Interconnection" in the Telecommunications Law expressly does not limit the physical and logical linking of networks to the interconnecting parties' own networks.

This analysis is in line with international precedents, where transit services (particularly for PSTN) are included in interconnection reference offers, for example, in the BT plc Standard Interconnect Agreement Schedule 108, Eircom Limited Interconnect Offer - Switched Transit Routing and Price List and France Telecom SA Offre de référence d'interconnexion Chapter 3 (Trafic commuté).

4.8 Inter-operator Transit Access Service

The Authority is satisfied that for the purposes of the Telecommunications Law, the Inter-Operator Transit Access Service ("**IOTAS**") is not an access service, but an interconnection service. This is because, like PTS, the IOTAS is a specialised form of termination service that enables end users with different operators with non-Batelco exchange lines to communicate with each other via interconnecting with Batelco's network. The definition of "Interconnection" in the Telecommunications Law expressly does not limit the physical and logical linking of networks to the interconnecting parties' own networks.

This is in line with international precedents, where transit services are included in interconnection reference offers (for example, BT Wholesale Reference Interconnection Offer: Schedule 102 – BT Transit Calls; Schedule 184 – Indirect Access Transit Calls).

The Authority expects these services to have a LRAIC basis to the charge in all subsequent reference interconnection offers published pursuant to

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section 57(b) of the Telecommunications Law. However, at this stage, for the purpose of the Order those charges as concluded in Section 4.4(k) for Service Descriptions 2.1 and Section 4.4(g) for the Service Description 2.9 will apply.

4.9 Summary of Charges and Reworked Charges

For those charges with supporting documentation provided by Batelco, the results of the above analysis by the Authority have been imputed into the proposed charges for the Reference Interconnection Offer effective from the date of this Order.

For those charges where only partial supporting documentation was supplied by Batelco to support the increase in charge, the Authority was able to assess the validity of a number of these charges by making assumptions relating to the increase in Engineering and Construction costs in the Kingdom of Bahrain over the past year. For these charges the Authority accepted the proposed charge as it appeared in the Reference Interconnection Offer.

For another set of charges relating to interconnection links where partial supporting documentation was supplied by Batelco, the Authority was unable to assess the validity of a number of these charges. For these charges the Authority had no option for the time being but to maintain the same level of charges as they appear in the approved Reference Interconnection Offer as being fair and reasonable.

For those charges where no supporting documentation was supplied by Batelco to support the increase in charge, the Authority has no option for the time being but to maintain the same level of charges as they appear in the Approved Reference Interconnection Offer as being fair and reasonable.

A full outline of those charges the Authority assessed is provided in the table below:

Schedule	Service	Batelco Proposed Charges – February/May 2006	Batelco Current Charges – May 2005	Authority Proposed Charges – August 2006
1-1.4	2 Mbit/s Switch Port	BD 41	BD 36	BD 41
1-1.5	2 Mbit/s Switch Port (Unilateral)	BD 215	BD 162	BD 162
1-1.6	2 Mbit/s Switch Port (Bilateral)	BD 108	BD 81	BD 81
1-1.7	Adjusted Port Rental	BD 108	N/A	BD81 ⁶
1-1.9	Route Type Change	BD 14	BD 12	BD 14

⁶ Similar service to 1.1.6, therefore same charge should apply.

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Schedule	Service	Batelco Proposed Charges – February/May 2006	Batelco Current Charges – May 2005	Authority Proposed Charges – August 2006
1-1.10	Switch Port Rearrangement	BD 41	BD 36	BD 41
1-1.11	Signal Link Connection	BD 14	BD 12	BD 14
1-1.12	Signal Link Rental	BD 178	BD 151	BD 151
1-1.13	Signal Link Rearrangement	BD 41	BD 36	BD 41
1-2.1	CSI Link Interconnection (2 Mbit/s)	BD 25	BD 22	BD 25
1-2.2	CSI Link Interconnection (2 Mbit/s)	BD 257	BD 179	BD 179
1-2.7	Additional CSI Link (2 Mbit/s)	BD 14	BD 12	BD 14
1-2.8	Additional CSI Link (2 Mbit/s)	BD 50	BD 17	BD 50
1-2.9	Inter-building Link Arrangement	BD 14	BD 12	BD 14
1-2.10	Signaling Link Connection	BD 14	BD 12	BD 14
1-2.11	Signaling Link Rental	BD 178	BD 151	BD 151
1-2.12	Signaling Link Rearrangement	BD 41	BD 36	BD 41
1-2.13	Route Type Change	BD 14	BD 12	BD 14
1-2.14	Switch Port Arrangement	BD 41	BD 36	BD 41
1-3.1	GMSC PSTN Terminating Access	6.50 Fils	4.61 Fils	3.95 Fils
1-3.1	Single Tandem Terminating Access	N/A	N/A	3.01 Fils
1-3.1	Double Tandem Terminating Access	N/A	N/A	4.03 Fils

⁷ Error in stated charge.

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Schedule	Service	Batelco Proposed Charges – February/May 2006	Batelco Current Charges – May 2005	Authority Proposed Charges – August 2006
1-4.1	Mobile Terminating Access	11.20 Fils	12.57 Fils	8.64 Fils
1-5.1	Paging Call Terminating Access	218.90 Fils	2.00 Fils	2.00 Fils
1-6.1	SMS Terminating Access	6.00 Fils	3.82 Fils	2.84 Fils
1-7.1	PSTN Emergency Call	6.50 Fils	4.61 Fils	3.66 Fils ⁸
1-8.1	Freephone from a Mobile Phone	11.20 Fils	12.57 Fils	8.64 Fils ⁹
1-8.2	Freephone from a PSTN Phone	6.50 Fils	4.61 Fils	3.66 Fils ⁸
1-11.1	MMS Termination	353.00 Fils	N/A	153.09 Fils
2.1.1	PSTN Transit Service	7.1 Fils	7.1 Fils	4.03 Fils
2-2.1	DQ Standard Call (181)	200.00 Fils	125.00 Fils	125.00 Fils
2-2.2	DQ Priority Call (181)	200.00 Fils	140.00 Fils	140.00 Fils
2-2.3	DQ (188)	200.00 Fils	145.92 Fils	145.92 Fils
2-3.12	Scheduled Installation	BD 14	BD 12	BD 14
2-3.13	Scheduled Installation	BD 21	BD 18	BD 21
2-7.1	Int'l PSTN Call Termination	9.95 Fils	9.95 Fils	2.91 Fils
2-8.1	Int'l Mobile Call Termination	18.40 Fils	18.40 Fils	8.33 Fils
2-9.1	Inter Operator Transit (Mobile)	5.40 Fils	N/A	2.68 Fils
2-9.1	Inter Operator Transit (Fixed)	N/A	N/A	2.68 Fils

⁸ Average of the 3 PSTN terminating charges

⁹ Mobile terminating charge

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Schedule	Service	Batelco Proposed Charges – February/May 2006	Batelco Current Charges – May 2005	Authority Proposed Charges – August 2006
	Engineer/ Construction Costs	BD 14 (per Hr)	BD 12 (per Hr)	BD 14 (per Hr)

Finally, for those charges not listed in the table above but which appear in the Reference Interconnection Offer, in which Batelco did not implement any change in the level of the charge between those of the proposed Reference Interconnection Offer of 15 February 2006 and the approved Reference Interconnection Offer of 30 May 2005, the Authority has for the time being accepted the proposed charge.

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IN THE EXERCISE OF ITS POWERS UNDER SECTION 57 OF THE TELECOMMUNICATIONS LAW, THE AUTHORITY MAKES THE FOLLOWING ORDER:

1. Reference Interconnection Offer Terms and Conditions

The Authority determines that Batelco shall amend those terms and conditions of its Reference Interconnection Offer as specified and set out in Part 1 of the Annex to this Order.

2. Reference Interconnection Offer Tariffs

The Authority determines that Batelco shall amend those tariffs of its Reference Interconnection Offer as specified and set out in Part 2 of the Annex to this Order.

3. Reference Interconnection Offer Publication

Batelco shall publish the Reference Interconnection Offer as determined by this Order within fourteen (14) calendar days of the date of this Order.

4. Compliance

The Authority hereby warns Batelco that any failure to comply with the terms of this Order will constitute among other things a material breach of Batelco's national fixed services license, which may then be revoked pursuant to the terms of section 35 of the Telecommunications Law.

5. Entry into force

This Order shall enter into force on 6 August 2006, which shall be the effective date for the purposes of section 57(b) of the Telecommunications Law.

A. Andreas Avgousti

General Director

for and on behalf of the Telecommunications Regulatory Authority

6 August 2006

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Annex

Part 1 – Amendments to Terms and Conditions of the Reference Interconnection Offer

Main Body

Clause 1.1 (a) shall be amended to reflect that there are 7 clauses.

Clause 3.1 (b) shall be amended by the addition of the phrase "as agreed by the parties".

The reference in clause 3.4 shall be amended to section 6.

The implementation timescales at clause 6.1 shall be reduced to one month for a Simple Case, two months for an Intermediate Case and three months for a Complex Case.

Service Descriptions 1-9 and 1-10

The first sentence of each of the descriptions shall be amended to read, "The offer of this service on the terms set out in a previous Batelco reference offer were withdrawn by the reference offer dated 15 August 2005."

Schedule 2 Notification and Acceptance of Service Request

The indemnity at paragraph 6 shall be qualified by the insertion of the following phrase at the end of the paragraph: ", subject to Batelco using all reasonable endeavors to mitigate against the effects of any such breach of the representations or warranties".

The incorrect cross-reference to paragraph 4 in paragraph 6 shall be amended to refer to paragraph 5.

The first part of paragraph 10 shall be amended to read: "A Service Request shall be deemed to conform with the requirements of Schedule 2 from the period three (3) weeks from the date of the Service Request, unless Batelco finds in that period that the Service Request is non-conforming because:"

Schedule 4 Billing and Collection

Paragraph 4 shall be amended to compensate for the additional administrative effort of the Billing Party in preparing an Estimated Invoice under paragraph 4.6, or for continuous late delivery month by month of the other party's figures, by inserting the following term:

"4.7 Where a Billing Party prepares an Estimated Invoice pursuant to paragraph 4.6, it shall be entitled to invoice the Billed Party an administration charge equal to BD1,000 multiplied by the number of times it has prepared such Estimated Invoices in the previous twelve (12) months."

Schedule 8 - Part 1 Dictionary

The new definition of "Offered Services" shall be inserted, as follows:

"**Offered Service** means a service relating to the interconnection of the parties' respective Networks (including any commercial services required to facilitate that interconnection) that is currently provided under the Reference Interconnection Offer or subsequent reference interconnection offers published by Batelco pursuant to section 57(b) of the Telecommunications

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Law and approved by the Regulator, but has not previously been supplied pursuant to the Supply Terms, as they may be amended or varied from time to time, or any other agreement between the Access Provider and Access Seeker;”

The definition of *Reference Interconnection Offer* shall be amended to read as follows:

“**Reference Interconnection Offer** means that part of the Reference Offer which is the reference interconnection offer published by Batelco pursuant to section 57(a) of the Telecommunications Law and approved by the Regulator as at the date of the formation of the Supply Agreement for the provision by it of Interconnection Services.”

Schedule 9 Supply Terms

Clause 2.2 shall be amended to read:

“These Supply Terms shall continue in full force and effect, as varied from time to time, for an initial period of one (1) year from the Effective Date (**Minimum Term**) and shall automatically renew for further periods of one (1) year, unless terminated earlier in accordance with this clause or clauses 13.6 or 14.”

Clause 2.3 shall be amended to read:

“Subject to clauses 2.4, 2.5 and 2.5A, if the Regulator approves or mandates any change to the Reference Interconnection Offer, or, if applicable, the Reference Access Offer, then these Supply Terms are automatically amended to incorporate the same change in respect of Regulated Services only, covered by the changes, or, if the same change does not directly apply, then with the necessary changes to ensure that these Supply Terms are consistent with the Reference Interconnection Offer or Reference Access Offer (as the case may be).”

Clause 2.4(b) shall be amended to read:

“a ruling, determination, approval, order or directive of the Regulator (other than any adverse effect on Batelco as a result of a mandated or approved change to the Reference Interconnection Offer or Reference Access Offer); or”

and the phrase “ruling or directive” in the last part of clause 2.4 shall be amended to read “ruling, determination, approval, order or directive”.

Clause 2.5 shall be amended to read:

“Batelco shall have the right on reasonable notice to the Licensed Operator to change its Charges, provided that the Licensed Operator shall have the right to refer any Material Change as a Dispute (as defined at clause 24.1) to dispute resolution under clause 24 and if the Dispute is not resolved within the period of notice of the change the Licensed Operator may terminate the Services subject to the Material Change.”

New clauses 2.5A and 2.5B shall be inserted as follows:

“2.5A If any part of the Supply Agreement is terminated following any Material Change, then the Licensed Operator shall, notwithstanding the terms of Schedule 5 or any other schedule of this Supply Agreement, not be liable for any compensation, other than where the Licensed Operator terminates a service in which discounts associated

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with the period of the service (1-year, 2-year etc) are applicable, with respect to that termination, whether by way of under-utilization charges or removal of capacity charges or liquidated damages.

2.5B For the purposes of clauses 2.5 and 2.5A, “Material Change” means an increase in the relevant Charge by a rate greater than Batelco’s weighted average cost of capital (as determined by the Regulator) or the rate of inflation in the Kingdom of Bahrain over the period from the first effective date of the relevant Charge to the effective date of the increase.”

The second sentence in clause 8.2 shall be deleted.

The phrase “as far as possible” shall be deleted from clause 8.3.

Clause 9.1 shall be amended to read “locates equipment within the Access Seeker’s premises”.

Clause 9.2(a) shall be qualified by the addition of the phrase “, except for fair wear and tear”.

Clause 9.3 shall be amended to read:

“If the Access Seeker fails to remove the Access Provider’s equipment under clause 9.2 within three (3) months of notification that the equipment is no longer required, then the Access Provider may remove it and the Access Seeker will get any consents required for the Access Provider to do this (such as landlord’s or owner’s consent). The Access Seeker shall be responsible for the Access Provider’s reasonable costs to repair or reinstate any premises, fixtures or other equipment from which the Access Provider’s equipment is removed.”

A new clause 11.1A shall be inserted as follows:

“Subject to any written agreement between the parties, Batelco shall use all reasonable endeavors to implement a request for an Offered Service within the timescales set out in the timetable at clause 6.1 of the main body of the Reference Interconnection Offer, subject to Batelco and the Licensed Operator using all reasonable endeavors as necessary to implement the Offered Service to:

- (a) deliver information and reply to correspondence promptly;
- (b) procure prompt attendance at meetings by qualified personnel; and
- (c) adopt a commercial approach to negotiation.”

Clause 11.2(c) shall be amended so that “monthly” is replaced by “quarterly”.

Clause 11.9 and clause 11.11(c) contain numbering typographical errors, which shall be deleted.

Part 2 – Tariffs for Interconnection Services

1 INTERCONNECTION SERVICES

1-1: ISI Link

Item	Chargeable Activity	Effective Date	Charge	Charge Basis
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Item	Chargeable Activity	Effective Date	Charge	Charge Basis
1-1.1	Footway Box construction and preparation work	6 August 2006	Cost per construction	Half the total costs of work performed on time and materials basis at the rates from time to time set out in Annex 1
1-1.2	Fiber installation charges where the Footway Box is less than or equal to 100m from the Batelco Switch Connection	6 August 2006	Free of charge	
1-1.3	Extended fiber installation charges where the Footway Box is more than 100m from the Batelco Switch Connection	6 August 2006	Cost per installation	Half the total costs of work performed on time and materials basis at the rates from time to time set out in Annex 1
1-1.4	Switch Port and line Connection charge	6 August 2006	BD41	Per 2 Mbit/s connection/ per connection
1-1.5	Port and E1 line rental for unilateral traffic routes	6 August 2006	BD162	Per 2Mbit/s/per month
1-1.6	Unadjusted Port Rental for bilateral traffic routes	6 August 2006	BD81	Per 2Mbit/s/per month
1-1.7	Adjusted Port Rental (idle ordered ports) for bilateral traffic routes	6 August 2006	BD81	Per 2Mbit/s/per month
1-1.8	Adjusted Port Rental traffic balance calculation for bilateral traffic routes	6 August 2006	Per 2Mbit/s/per quarter in accordance with Annex 2	Per 2Mbit/s/per quarter in accordance with Annex 2
1-1.9	Route type change or addition	6 August 2006	BD14	Per software alteration
1-1.10	Switch Port rearrangement	6 August 2006	BD41	Per E1/per rearrangement

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Item	Chargeable Activity	Effective Date	Charge	Charge Basis
1-1.11	Signaling Link connection	6 August 2006	BD14	Per link
1-1.12	Signaling Link rental	6 August 2006	BD151	Per link/ per month
1-1.13	Signaling Link rearrangement	6 August 2006	BD41	Per rearrangement

1-2: Customer Sited Interconnection

Item	Chargeable Activity	Effective date	Charge	Charge Basis
1-2.1	CSI Link Connection Charge	6 August 2006	BD25	Per 2Mbit/s per connection
1-2.2	CSI Link Rent (Basic)	6 August 2006	BD179	Per 2Mbit/s/ per month for link up to first km
1-2.3	CSI Link Rent (per additional km or part)	6 August 2006	BD1	Per 2Mbit/s/per month/per km
1-2.4	Local End Separation Surcharge	6 August 2006	Price on application	Per 2Mbit/s/ per month
1-2.5	Site Entry Separation Surcharge	6 August 2006	Cost of Work	As per time and materials in Annex 1
1-2.6	Full Separation Surcharge	6 August 2006	Price on application	Per 2Mbit/s/per month/per km
1-2.7	Additional Intrabuilding Link connection (Customer Site)	6 August 2006	BD14	Per 2 Mbit/s per connection
1-2.8	Additional Intrabuilding Link rental (Customer Site)	6 August 2006	BD50	Per 2Mbit/s/per month
1-2.9	Intrabuilding Link rearrangement	6 August 2006	BD14	Per rearrangement
1-2.10	Signaling Link connection Charge	6 August 2006	BD14	Per link/per connection
1-2.11	Signaling Link rental	6 August 2006	BD151	Per link/ per month

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Item	Chargeable Activity	Effective date	Charge	Charge Basis
1-2.12	Signaling Link rearrangement	6 August 2006	BD41	Per rearrangement
1-2.13	Route type change or addition	6 August 2006	BD14	Per software alteration
1-2.14	Switch Port rearrangement	6 August 2006	BD41	Per E1 port/ per arrangement
1-2.15	Alternative radio link	6 August 2006	Price on application	

1-3: PSTN Terminating Access

Item	Chargeable Activity	Effective date	Charge	Charge Basis
1-3.1	Conveyance of Calls as set out in Service Description GMSC PSTN Terminating Access	6 August 2006	3.95 Fils	Per Fils, calculated per second
1-3.X	Conveyance of Calls as set out in Service Description Single Tandem Terminating Access	6 August 2006	3.01 Fils	Per minute, calculated per second
1-3.X	Conveyance of Calls as set out in Service Description Double Tandem Terminating Access	6 August 2006	4.03 Fils	Per minute, calculated per second
1-3.2	Delivery to tone or announcement as set out in Service Description	6 August 2006	2 Fils	Per event

1-4: Mobile Terminating Access

Item	Chargeable Activity	Effective date	Charge	Charge Basis
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Item	Chargeable Activity	Effective date	Charge	Charge Basis
1-4.1	Conveyance of Calls as set out in Service Description	6 August 2006	8.64 Fils	Per minute, calculated per second
1-4.2	Delivery to tone or announcement as set out in Service Description	6 August 2006	2 Fils	Per event
1-4.3	Calls to and from Test SIMs	6 August 2006	SIM provider's retail rates	Per call made or received

1-5: Paging Terminating Access

Item	Chargeable Activity	Effective date	Charge	Charge Basis
1-5.1	Call Delivery as set out in Service Description	6 August 2006	2 Fils	Per termination/per Paging Number
1-5.2	Delivery to tone or announcement as set out in Service Description	6 August 2006	2 Fils	Per event

1-6: SMS Terminating Access

Item	Chargeable Activity	Effective date	Charge	Charge Basis
1-6.1	Message Delivery, other than as below	6 August 2006	2.84 Fils	Per Message
1-6.2	Messages to or from Test SIMs	6 August 2006	SIM provider's retail rate	Per Message sent or received

1-7: Emergency Call Access Service

Item	Chargeable Activity	Effective date	Charge	Charge Basis
1-7.1	Conveyance of Emergency Call	6 August 2006	3.66 Fils	Per minute, based on the average of the current Batelco PSTN termination rates in item 1-3.1, calculated per second

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1-8: Freephone Call Originating Access Service

Item	Chargeable Activity	Effective date	Charge	Charge Basis
1-8.1	Origination of Calls as set out in Service Description from a Mobile Telephone	6 August 2006	8.64 Fils	Per minute, based on the then current Batelco Mobile termination rate in item 1-4.1, calculated per second
1-8.2	Origination of Calls as set out in Service Description from a fixed PSTN Telephone	6 August 2006	3.66 Fils	Per minute, based on the average of the current Batelco PSTN termination rates in item 1-3.1, calculated per second

1-9: International Inbound Connection and Termination Service to Mobile Telephones

Item	Chargeable Activity	Effective date	Charge	Charge Basis
1-9.1	International Connection Services	6 August 2006	Set out in Annex 3	Per minute, calculated per second, subject to any applicable minimum charge

1-11: MMS Delivery Service

Item	Chargeable Activity	Effective date	Charge	Charge Basis
1-11.1	MMS message delivery as set out in the service description	6 August 2006	153.09 Fils	Per message

2 ACCESS SERVICES**2-1: PSTN Transit Service**

Item	Chargeable Activity	Effective date	Charge	Charge Basis
2-1.1	Per Transit Call as set out in Service Description	6 August 2006	4.03 Fils	Per minute

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2-2: Directory Assistance Service

Item	Chargeable Activity	Effective date	Charge	Charge Basis
2-2.1	For standard Call to 181 as set out in Service Description	6 August 2006	125 Fils	Per call
2-2.2	For priority service Call to 181 as set out in Service Description	6 August 2006	140 Fils	Per call
2-2.3	For Call to 188 as set out in Service Description	6 August 2006	145.92 Fils	Per call and sent SMS
2-2.4	Delivery to tone or announcement as set out in Service Description	6 August 2006	2 Fils	Per event

2-3: Facilities Access Service

Item	Chargeable Activity	Effective date	Charge	Charge Basis
2-3.1	Processing Access Application Fee	6 August 2006	BD100	Per application
2-3.2	Site Survey if required	6 August 2006	BD300	Per site visit
2-3.3	Reprocessing Fee	6 August 2006	BD 50	Per resubmission or amendment of application
2-3.4	Access Site Lease Administrative Charge	6 August 2006	BD 200	Per lease processed
2-3.5	Access Site Sub-Lease Administrative Charge	6 August 2006	BD 900	Per sub-lease processed
2-3.6	Make Ready and installations charges	6 August 2006	Cost of work	Time and materials basis as set out in Annex 1

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Item	Chargeable Activity	Effective date	Charge	Charge Basis
2-3.7	Site Space Charge (Facility other than Ducts) - including power supply limited to 10 kw/mth	6 August 2006	BD 25	Per sq meter/Site/month for space occupied or rendered unusable
2-3.8	Tower Sector Fee	6 August 2006	BD 50	Per sector/month
2-3.9	Duct Rental Charge	6 August 2006	630 Fils	Per meter/per duct bore/month
2-3.10	Additional Power Supply or other Equipment Request Charge	6 August 2006	On application	On application
2-3.11	Security and Site Access Administration Fee	6 August 2006	BD 2	Per card/per site/per month
2-3.12	Scheduled installation, maintenance and removal Charges (Business Hours)	6 August 2006	BD 14	Per hour (two hour minimum call out)
2-3.13	Scheduled installation, maintenance and removal Charges (Out of Hours)	6 August 2006	BD 21	Per hour (two hour minimum call out)
2-3.14	Unscheduled installation, maintenance and removal Charges (Urgency Surcharge)	6 August 2006	BD 36	Per hour (two hour minimum call out)
2-3.15	Additional Requested Services	6 August 2006	Cost of work	Time and materials as set out in Annex 1

2.7 International Inbound calls to Batelco Fixed Telephones

Item	Chargeable Activity	Effective date	Charge	Charge Basis
2-7.1	Conveyance of Calls as set out in Service	6 August 2006	2.91 Fils	Per minute, calculated per second

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	Description			
2-7.2	Delivery to tone or announcement as set out in Service Description	6 August 2006	2 Fils	Per event

2.8 International Inbound calls to Batelco Mobile Telephones

Item	Chargeable Activity	Effective date	Charge	Charge Basis
2-8.1	Conveyance of Calls as set out in Service Description	6 August 2006	8.33 Fils per minute	Per minute, calculated per second
2-8.2	Delivery to tone or announcement as set out in Service Description	6 August 2006	2 Fils	Per event

2.9 Inter-Operator Transit Access Service

Item	Chargeable Activity	Effective date	Charge	Charge Basis
2-9.X	Fixed: Per Transit Call as set out in Service Description, payable by the Access Seeker	6 August 2006	2.68 Fils plus charges as set out below	Per min, chargeable per second
2-9.1	Mobile: Per Transit Call as set out in Service Description, payable by the Access Seeker	6 August 2006	2.68 Fils plus charges as set out below	Per min, chargeable per second
2-9.2	Per Transit Call as set out in Service Description, payable by the Access Seeker	6 August 2006	The applicable rate for termination of calls (or origination of calls in the case of freephone/reverse charge scenarios) on the other Licensed Operator's	Same charging basis as applied by the terminating operator (or originating operator in the case of freephone/reverse charge scenarios), which is usually per min, chargeable per second

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Item	Chargeable Activity	Effective date	Charge	Charge Basis
			Network	

3 WHOLESALE SERVICES**3-1: Speaking Clock Service**

Item	Chargeable Activity	Effective date	Charge	Charge Basis
3-1.1	Conveyance of Speaking Clock Call and provision of time information	6 August 2006	Retail charge at the Time of the call minus 20%	Per call

3-2: National Collect Call Service

Item	Chargeable Activity	Effective date	Charge	Charge Basis
3-2.1	Originating conveyance of National Collect Call as set out in Service Description from Fixed PSTN Telephone	6 August 2006		Per min based on the then current Batelco PSTN termination rate in item 1-3.1
3-2.2	Originating conveyance of National Collect Call as set out in Service Description from Mobile Telephone	6 August 2006		Per min based on the then current Batelco Mobile termination rate in item 1-4.1
3-2.3	Collect Call Assistance as set out in Service Description	6 August 2006	220 Fils	Per attempt
3-2.4	Delivery to tone or announcement as set out in Service Description	6 August 2006	2 Fils	Per event
3-2.5	Batelco charges in relation to an agreement for a third party operator to accept	6 August 2006	Batelco's retail charges as at the Commencement Date, minus	Per min subject to any applicable minimum charge or increment set out in Batelco's retail tariff from time

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Item	Chargeable Activity	Effective date	Charge	Charge Basis
	and bill National Collect calls		25%, plus the difference between the charges for origination imposed by a third party Access Seeker and the rates for origination set out in item 3-2.1 or 3-2.2 as the case may be.	to time

3-3: Inbound International Collect Call Service

Item	Chargeable Activity	Effective date	Charge	Charge Basis
3-3.1	Conveyance of Inbound International Collect Call as set out in Service Description	6 August 2006	As set out in Batelco's retail tariff as at the Commencement Date minus 15%	Outbound international direct dial rates per min subject to any applicable minimum
3-3.2	Collect Call Assistance as set out in Service Description	6 August 2006	220 Fils	Per successful assistance

3-4: International Operator Assistance Service

Item	Chargeable Activity	Effective date	Charge	Charge Basis
3-4.1	Conveyance of International Call and provision of Operator Assistance, except as in item 3-4.2 below	6 August 2006	The retail tariff for international operator assisted calls to the relevant Authorized Destination as at the Commencement Date minus 10%	Per min with any applicable minimum charge
3-4.2	If the Called International	6 August	No charge/75	No charge, provided that there is no retail

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Item	Chargeable Activity	Effective date	Charge	Charge Basis
	Party agrees to pay the charges (i.e. international collect call)	2006	Fils	charge imposed by the Access Seeker. If there is a retail charge, then the access cost is 75 Fils per call

3-5: Wholesale International Switched Service

Item	Chargeable Activity	Effective date	Charge	Charge Basis
3-5.1	Conveyance of International Switched Call as set out in Service Description	6 August 2006	As set out in Annex 4	Per min with any applicable minimum charge
3-5.2	Delivery to tone or announcement as set out in Service Description	6 August 2006	2 Fils	Per event

3-7: Directory Listing Service

Item	Chargeable Activity	Effective date	Charge	Charge Basis
3-7.1	Provision of Directory Information by Access Seeker in accordance with Service Description	6 August 2006	Nil	
3-7.2	Modification by Batelco of Directory Information provided by Access Seeker in incorrect format	6 August 2006	Cost of modification	Work performed on time and materials basis at the rates from time to time set out in Annex 1

Miscellaneous Services

Item	Chargeable Activity	Effective date	Charge	Charge Basis
M.1	Exchange Data Modification -	6 August 2006	Cost of work performed	Time and materials as set out in Annex

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Item	Chargeable Activity	Effective date	Charge	Charge Basis
	Complex Number Conditioning being data build contemplating examination of digits beyond 3 rd dialed digit/per additional digit to be added to number range/per exchange			1/per exchange

SCHEDULE 3 – ANNEX 1

RATES FOR TIME AND MATERIALS WORK

Item	Chargeable Activity	Effective date	Charge	Charge Basis
A-1.1	Time-based work	6 August 2006	BD14	Per hour, subject to minimum of: Four hours for construction work; Two hours for maintenance work; One hour for clerical work; and Two hours for any other work
A-1.2	Materials	6 August 2006	Cost plus a fair and reasonable margin	Per item, margin to be assessed and agreed on a case by case basis