

DRAFT BILLING AND METERING REGULATION

ARTICLE 1 DEFINITIONS

- 1.1 For the purpose of this Regulation, unless the context otherwise requires, any word, phrase or expression used in this Regulation shall have the meaning given to it in article 1 of the Legislative Decree No. (48) of 2002 Promulgating the Telecommunications Law of the Kingdom of Bahrain (the "**Telecommunications Law**"), and the following terms and expressions shall have the following meaning:

Term	Definition
Affected Licensee	A Licensed Operator who holds an Individual Mobile Telecommunications Licence issued by the Authority.
Allowance Tolerances	The allowable tolerances for Chargeable Events set out in paragraphs 3 to 6 of Annex 1.
Audit Body	One or more third-party organisation(s) appointed by the Authority to undertake compliance audits of Affected Licensees.
Bill	The information issued, or made available, by the Licensed Operator to a User and/or Subscriber about the charges levied and due for payment or the debits and credits applied to a User and/or Subscriber's account.
Billing and Metering System or "BMS"	The totality of all equipment, data, procedures and activities used to determine the charges to be sought for provision and use of Relevant Services and/or to present those charges on User's or Subscriber's Bills. For purposes of clarity, a BMS incorporates all processing steps from the original recording of a Chargeable Event to its readiness for presentation on a Bill to the User and/or Subscriber whether performed by one or more Affected Licensees.
Business Day	A day, other than a Friday, Saturday or public holiday in the Kingdom of Bahrain.
Business Support Systems (BSS)	Business support systems, when used in conjunction with the OSS, to integrate network components and elements in order to deliver and support the operation of customer services.
Category 1 Deficiency	A failure to maintain performance of the BMS within the Allowable Tolerances for the Measurement Criteria set out in paragraphs 3 – 6 of Annex 1.
Category 2 Deficiency	A non-compliance with a requirement of this Regulation other than a Category 1 Deficiency.
Chargeable Event	An event or circumstance which results in a charge being incurred by a User or Subscriber which can either be a Usage Event or a Non-Usage Event.
Effective Date	Means: (a) the date on which this Regulation comes into force in the Kingdom of Bahrain; or (b) if this Regulation does not apply to a Licensed Operator from such date, the date upon which this Regulation is determined by the Authority to apply to a Licensed Operator.

Event Data Record (EDR)	A data record produced by telecommunications equipment that documents the details of a voice call, SMS or data.
Framework Controls	The framework controls set out in Annex 2.
Initial Assessment	Has the meaning given in ARTICLE 6.4(a).
International Roaming Partners	Third parties with which an Affected Licensee contracts for the purposes of international mobile roaming services.
Measurement Criteria	Means the criteria set out in paragraphs 3 to 6 of Annex 1 to be measured across all Chargeable Events.
Ongoing Programme Audit	Has the meaning given to it in ARTICLE 7.1.
Operations Support Systems (OSS)	Operations support systems utilised by, or on behalf of, Affected Licensees to manage their networks and to support network management functions including network configuration, service provisioning and fault management.
Overcharge	means: (a) a Chargeable Event for which the charge to the User or Subscriber exceeds that calculated on the basis of the applicable published Tariffs and/or any bespoke Tariff agreed with a particular Subscriber; or (b) any other incident which results in a charge being logged or added erroneously to a Bill.
Performance Reports	The document prepared by the Affected Licensee in accordance with ARTICLE 6.3.
Pre-Compliance Programme Audit	Has the meaning given in ARTICLE 6.5.
Project Plan	Has the meaning given in ARTICLE 6.4(b).
Recurring Event(s)	Has the meaning given in paragraph 1(b)(i) of Annex 1.
Relevant Product	A product, service, or bundle of products or services offered by an Affected Licensee to Users and/or Subscribers as part of a Relevant Service.
Relevant Services	Any mobile telecommunications services provided to Users and/or Subscribers and any additional services which the Authority specifies from time to time.
Risk Register	Has the meaning given in ARTICLE 5.3(b).
SME	Any enterprise employing up to 250 employees.
System Functional Description Document	The document prepared by the Affected Licensee in accordance with ARTICLE 5.2(a) and 6.1(c).
Tariff(s)	The tariffs charged by an Affected Licensee for the Relevant Services.
Usage Event(s)	Has the meaning given in paragraph 1(a) of Annex 1.

- 1.2 Any reference to an enactment includes:
- (a) that enactment as amended, extended, consolidated, re-enacted or applied by or under any other enactment before or after the Effective Date of this Regulation; and
 - (b) any subordinate legislation made (before or after the Effective Date of this Regulation) under that or any other applicable enactment, including one within ARTICLE 1.2(a) above.

ARTICLE 2 PURPOSE

The purpose of this Regulation is to:

- (a) establish the principles and processes required to implement a Billing and Metering Regulation defining the circumstances and Persons to which it applies and the requirements placed on such Persons in order to demonstrate and maintain ongoing compliance;
- (b) ensure that Users and/or Subscribers are provided with transparent information in relation to, and are charged accurately for, their use of the Relevant Services; and
- (c) define the role, and overarching rights and obligations relating to billing and metering, of the Telecommunications Regulatory Authority (the "**Authority**"), the Audit Body and the Affected Licensees in order to achieve the purposes of this Regulation set out above and as more particularly described in the remainder of this Regulation.

ARTICLE 3 SCOPE OF THE REGULATION

- 3.1 Except as provided for in Article 3.2, this Regulation applies to the Affected Licensees.
- 3.2 Article 4.2 and ARTICLE 8 of this Regulation shall apply to all Affected Licensees.
- 3.3 Overarching rights of the Authority
- (a) Without prejudice to the other rights of the Authority under the Telecommunications Law, the Authority may from time to time, at its absolute discretion, issue directions under this Regulation in respect of the following subject-matter:
 - (i) modifying existing or adopting new processes, standards and other requirements that Affected Licensees must comply with in order to obtain, or to maintain, approval in respect of their Billing and Metering Systems;
 - (ii) the appointment of third parties to undertake such functions and tasks as the Authority considers reasonably necessary to fulfil the purpose and objectives of this Regulation; and
 - (iii) subject to compliance with Article 3(f) of the Telecommunications Law:
 - (A) modifying or extending the category of services that shall constitute Relevant Services for the purpose of this Regulation;
 - (B) the extension of this Regulation to apply to additional Affected Licensees or to vary the terms on which the Regulation applies to the existing Affected Licensees;

- (C) such other matters as the Authority considers appropriate, in its absolute discretion, in order to fulfil the purpose and objectives of this Regulation.

**ARTICLE 4
LIABILITY OF AFFECTED
LICENSEES**

4.1 The Affected Licensees shall ensure that:

- (a) Each User and/or Subscriber is given transparent information on Tariffs and billing practices so that they can verify the accuracy of the charges made by an Affected Licensee for the provision of the Relevant Services; and
- (b) Each User and/or Subscriber is able to dispute the charges made by Affected Licensees in respect of the Relevant Services in accordance with the Consumer Protection (Telecommunications Services) Regulation dated 4th December 2017.

4.2 Overarching obligations of all Licensed Operators

- (a) Licensed Operators shall not charge a User or Subscriber, or render or make available any Bill to a User or Subscriber, in respect of the provision of any Relevant Services unless every amount charged and/or stated on the Bill:
 - (i) represents and does not exceed the true extent of any such service actually provided to the User or Subscriber in question; and
 - (ii) is charged in accordance with the Tariff provided, or made available to, the User and/or Subscriber in question.
- (b) Licensed Operators shall, subject to compliance with relevant data privacy legislation:
 - (i) retain such records as may be necessary for the purpose of establishing compliance with this Regulation for a period which is the later to occur of:
 - (A) at least twelve (12) months from the date on which the relevant record was created; and
 - (B) in the event that there is a complaint relating to a Bill from a User and/or Subscriber, twelve (12) months from the date on which the complaint in question was first submitted to the Licensed Operator.
 - (ii) provide to each of their Users and/or Subscribers, on request and at no extra charge, access to adequate billing information (including any Chargeable Events applied by the Licensed Operator) to allow the User and/or Subscriber to verify and control the charges made for Relevant Services, to adequately monitor their usage and expenditure in respect of Relevant Services and to verify that the charges are in line with the Licensed Operator's Tariffs; and
 - (iii) deal with billing complaints in accordance with the Consumer Protection (Telecommunications Services) Regulation dated 4th December 2017, and retain the relevant records in respect of billing complaints in accordance with the requirements of the Consumer Protection (Telecommunications Services) Regulation dated 4th December 2017.

ARTICLE 5
SCOPE OF BILLING PROCESSES INCLUDED WITHIN A BMS

5.1 Process Management

- (a) The Affected Licensee shall ensure that all processes that constitute or impact on the operation of the BMS are included within the scope of a quality management system that has implemented the requirements of ISO9001: 2015 (and any subsequent editions) or an equivalent management standard acceptable to the Authority.
- (b) It is not a requirement of the Regulation that the quality management system is certified. If an accredited certification of the quality management system is in place and the scope of that certification covers the operation of the BMS, then the Authority may determine that the duration of the initial and ongoing audits as described in ARTICLE 6 and ARTICLE 7 can be reduced.
- (c) If certification to ISO9001: 2015 (or any subsequent edition) is held, the Affected Licensee shall provide copies of the certificate, audit reports and audit findings to the Authority and Audit Body on request. The Affected Licensee shall inform the Authority if the ISO 9001: 2015 (or subsequent edition) certification is withdrawn, suspended or the scope of certification is changed.

5.2 Mandatory Documents

The Affected Licensee shall produce the following two (2) documents in accordance with ARTICLE 6.1(c):

- (a) System Functional Description Document
 - (i) This document will provide a description of the BMS to include all Telecommunications Network, Operational Subsystem (OSS) and Business Subsystem (BSS) elements, and process flows to include interactions with Users and Subscribers, third-party supplied services, other Licensed Operators, and where appropriate International Roaming Partners. The System Functional Description Document shall refer to lower level documents so that it is clear how the system and process elements inter-operate.
 - (ii) The System Functional Description Document needs to be sufficient to enable a person with no personal knowledge of the BMS, but whom has a reasonable technical understanding, to understand the principles of the operation of the BMS and its associated risks.
 - (iii) As a minimum requirement, the following shall be included:
 - (A) a diagrammatic representation of the network, OSS and BSS elements and their interactions with people, processes, Users and Subscribers;
 - (B) technical and geographic footprint;
 - (C) description of the services and products provided;
 - (D) User/Subscriber profile, by service type and locations;
 - (E) third party relationships (suppliers providing services that impact on compliance with the Regulation, Licensed Operator and International Roaming Partners);

- (F) detailed descriptions of the process management system;
 - (G) risks to the accuracy of the BMS and an associated impact assessment, estimates of likely occurrence and the mitigation actions to be taken by the Affected Licensee;
 - (H) risk management / change controls; and
 - (I) a responsibility assignment matrix.
- (iv) The Authority (and any Audit Body appointed by the Authority) shall consider the System Functional Description Document as part of the approval process set out in ARTICLE 6 and in considering whether to approve the System Functional Description Document, shall assess whether mitigation actions are adequately documented and are sufficient to address identified risks to the accuracy of the Billing and Metering System.
 - (v) Any changes to the Billing and Metering System will be notified to the Authority and/or Audit Body in accordance with ARTICLE 7.2 and the Affected Licensee shall promptly provide the Authority and/or Audit Body with an updated copy of the System Functional Description Document.
- (b) Performance Reporting Document
- (i) To demonstrate compliance with the Regulation the Affected Licensee shall produce a performance reporting document which documents the intrinsic accuracy of the metering elements of the BMS for Chargeable Events and reports on all Category 1 Deficiencies and Category 2 Deficiencies.
 - (ii) The Performance Reporting Document will detail how risks identified and documented in the Risk Register are monitored and if one or more of the risks were to occur, how the risk occurrence would be detected, quantified and reported.
 - (iii) The Performance Reporting Document will detail how the Affected Licensee will identify, monitor and report on the performance of the BMS against the Measurement Criteria set out in Annex 1.
 - (iv) The Performance Reporting Document shall define the information to be submitted by the Affected Licensee to the Authority and/or Audit Body on a quarterly basis as part of its Performance Reports in accordance with ARTICLE 6.3.

5.3 Risk Management

- (a) The Affected Licensee shall fully implement the requirements of clause 6.1 (Actions to address risks and opportunities) of ISO9001: 2015 (or equivalent in any subsequent editions). The Affected Licensee shall ensure that all risks that:
 - (i) could impact on the ability of the BMS to deliver accurate Bills, Event Data Records, as applicable, or
 - (ii) could impact on compliance with the Regulation,
 have been identified.

- (b) All risks identified in compliance with ARTICLE 5.3(a) shall be compiled as part of a risk register together with the actions that the Affected Licensee has taken or intends to take in order to mitigate each such risk ("**Risk Register**"). The Risk Register shall be maintained by the Affected Licensee and a copy of the Risk Register shall be provided to the Authority (or any Audit Body appointed by the Authority) as part of each Performance Report submitted in accordance with ARTICLE 6.3.
- (c) Any planned changes to the BMS shall be subject to an impact analysis and risk review and the output shall be recorded in the Risk Register.

5.4 Controls Framework

- (a) An Affected Licensee shall implement the controls detailed in Annex 2. If a similar control has already been implemented within the quality management system or another controls framework this may be accepted as an alternative approach to meeting the requirement. Any alternative approaches shall be subject to documentation review and audit. The Audit Body shall determine whether any alternative approaches are acceptable.

ARTICLE 6 APPROVAL PROCESS

6.1 Initial review and assessment

- (a) Initial meeting. Within one month of the Effective Date, each Affected Licensee shall meet with the Authority and/or Audit Body in order to discuss and determine the scope of the Billing and Metering System to be assessed and submitted for approval.
- (b) Initial On-Site Review. Within three (3) of the Effective Date, the Audit Body will undertake an initial on-site review of the Affected Licensee to determine the extent of the BMS ("**Initial On-Site Review**"). The outcome of this review shall determine the scope of the BMS and shall be used by the Affected Licensee to determine the resources, activities and timescales within the Project Plan for achieving compliance. Each Affected Licensee shall provide the Authority (or the Audit Body appointed by the Authority) with access to all locations, systems, people and data necessary that constitute the BMS to establish compliance with the Regulation. The Affected Licensee shall have in place processes that ensure disclosure of information to the Authority and/or the Audit Body by the Affected Licensee in relation to its compliance with the Regulation.
- (c) Initial Document Review. Within three (3) of the Effective Date, the Affected Licensee shall submit its initial draft of the System Functional Description Document and Performance Reporting Document for initial assessment and approval by the Authority and/or Audit Body ("**Initial Document Review**"). The Authority and/or Audit Body shall, as part of the Initial Document Review, review the following:
 - (i) tariff information and pricing;
 - (ii) management processes and reporting processes;
 - (iii) billing operational and audit processes;
 - (iv) Subscriber management processes;
 - (v) transaction data processing activities; and

- (vi) complaints handling.
- (d) The Authority and/or Audit Body will confirm approval of the System Functional Description Document and Performance Reporting Document in writing to the Affected Licensee. If the Authority and/or Audit Body does not approve the System Functional Description Document and/or Performance Reporting Document prepared in accordance with ARTICLE 6.1(c) then the Authority and/or Audit Body shall inform the Affected Licensee of its reasons for not approving it. The Affected Licensee shall then revise the System Functional Description Document and/or Performance Reporting Document taking into account such reasons and re-submit a revised version for the Authority's and/or Audit Body's approval within ten (10) Business Days of its rejection by the Authority and/or Audit Body.

6.2 System Functional Description Document

- (a) The Authority and/or Audit Body will review the System Functional Description Document to assess:
 - (i) whether there are any inherent weaknesses within the design of the BMS and whether the BMS is capable of complying with the requirements of the Regulation;
 - (ii) whether the processes surrounding the operation of the BMS are being operated correctly to achieve compliance with this Regulation;
 - (iii) the on-going performance of the BMS in meeting the requirements of this Regulation based on a minimum of twelve (12) months' results;
 - (iv) how to plan the Pre-Compliance Audit Programme and Ongoing Audit Programme.

6.3 Performance Reporting Document and Performance Reports

- (a) As part of the Performance Reporting Document, the Authority and/or Audit Body will agree with the Affected Licensee the information which the Affected Licensee will report to the Authority and/or Audit Body provided always that the Performance Reporting Document contains the details required under ARTICLE 5.2(b) (the "**Performance Reports**"). The Performance Reports shall include an up-to-date copy of the Risk Register maintained by the Affected Licensee.
- (b) The Performance Reports shall be submitted on a quarterly basis and the Affected Licensee shall measure the performance of the BMS in accordance with the Measurement Criteria and shall include a 12-month rolling average result for each Measurement Criteria and/or reportable measure (broken down on a month-to-month basis).
- (c) Each Performance Report shall be submitted to the Authority and/or Audit Body no later than four (4) weeks after the end of the relevant reporting period and shall be submitted within one (1) week of its production.
- (d) The first Performance Report shall relate to the three-month period commencing on the first day of the month following approval of the Performance Reporting Document in accordance with ARTICLE 6.1(d).

6.4 Project Plan

- (a) Following completion of the Initial On-Site Review and Initial Document Review in accordance with ARTICLES 6.1(b) and 6.1(c), the Authority and/or Audit Body will document its findings and

categorise any potential non-compliances of the BMS as Category 1 Deficiencies and/or Category 2 Deficiencies ("**Initial Assessment**") and discuss the Initial Assessment with the Affected Licensee.

- (b) Within one (1) month of receipt of the Initial Assessment from the Authority and/or Audit Body, the Affected Licensee shall produce for the Authority and/or Audit Body's approval a draft project plan which includes appropriate milestones that ensure that the Affected Licensee achieves compliance with the Regulation in accordance with this ARTICLE 6 within twenty-four (24) months of the Effective Date ("**Project Plan**").
- (c) If the Authority and/or Audit Body does not approve the Project Plan prepared in accordance with ARTICLE 6.4(b) then the Authority and/or Audit Body shall inform the Affected Licensee of its reasons for not approving it. The Affected Licensee shall then revise the Project Plan taking into account such reasons and re-submit a revised version for the Authority's and/or Audit Body's approval within ten (10) Business Days of its rejection by the Authority and/or Audit Body.
- (d) The Affected Licensee shall take such corrective action as is necessary to remedy the non-compliances and deficiencies identified by the Authority and/or Audit Body in the Initial Assessment in accordance with the agreed Project Plan.
- (e) The Affected Licensee may propose amendments to the Project Plan from time to time by notifying the Authority and/or Audit Body in writing and shall require the prior written approval of the Authority and/or Audit Body.

6.5 Pre-Compliance Audit Programme

- (a) The outcome of the Initial Assessment and the Affected Licensee's Project Plan shall be used to establish the Pre-Compliance Audit Programme ("**Pre-Compliance Audit Programme**"). The Pre-Compliance Audit Programme shall be a combination of internal audits conducted by the Affected Licensee and external audits undertaken by the Authority and/or Audit Body to monitor the Affected Licensee's progress in accordance with the Project Plan. The Pre-Compliance Audit Programme shall be developed by the Audit Body with appropriate input from the Affected Licensee and will be approved by the Authority.
- (b) The Affected Licensee shall take such corrective action as is necessary to remedy the non-compliances and deficiencies identified by the Authority and/or Audit Body through the Pre-Compliance Audit Programme and the Authority and/or Audit Body shall be offered an opportunity to review the impact of the Affected Licensee's remedial activities on the BMS and provide the Affected Licensee with its updated findings if necessary.

6.6 Compliance

- (a) Once the Authority and/or Audit Body is satisfied that all the requirements of the Regulation have been met, in that:
 - (i) the Affected Licensee has demonstrated compliance with the relevant Framework Controls as documented in Annex 2; and
 - (ii) the Authority and/or Audit Body is satisfied with the performance of the BMS as documented in the Performance Reports; and
 - (iii) the Affected Licensee has addressed any Category 1 Deficiencies or Category 2 Deficiencies in accordance with this Regulation and any directions of the Authority and/or Audit Body,

it shall inform the Authority that the Affected Licensee is compliant with the Regulation.

- (b) Failure to achieve compliance in accordance with ARTICLE 6.6(a) in accordance with the timescales set out in the Project Plan may, at the discretion of the Authority, be deemed a breach of this Regulation.

ARTICLE 7 ON-GOING COMPLIANCE

7.1 Ongoing Compliance and Measurement of Performance

- (a) Once approval of the BMS has been granted, the Affected Licensee shall be required to maintain the approval which will be assessed by means of a three (3) year on-going audit and compliance programme operated by the Authority and/or Audit Body and by having regard to the ongoing submission of Performance Reports by the Affected Licensee to the Authority ("**Ongoing Audit Programme**") which will include a programme of audits to be developed by the Audit Body with appropriate input from the Affected Licensee and approved by the Authority.
- (b) The Affected Licensee shall continue to document and categorise any compliance issues with the BMS as part of its Risk Register. In the event that the Affected Licensee experiences a Category 1 Deficiency it shall undertake the actions required by Annex 2.
- (c) The Affected Licensee shall continue to measure the performance of its BMS and assess whether the BMS consistently performs in accordance with the Allowable Tolerances for the Measurement Criteria over a rolling twelve-month period by continuing to submit Performance Reports to the Authority on a quarterly basis in accordance with the Performance Reporting Document and terms of this Regulation. Where the Authority reasonably believes that insufficient action is being taken to address any significant causes of routine performance issues related to the BMS, the Authority and/or Audit Body may:
 - (i) require the Affected Licensee to undertake remedial action in order to address any underlying or business as usual performance issues that relate to the performance of the BMS resulting from normal conditions and/or the measurement capabilities of the BMS; and/or
 - (ii) carry out such audits, in addition to the audits set out in the Ongoing Audit Programme, as the Authority and/or Audit Body consider necessary in their sole discretion.

7.2 Changes to the BMS

- (a) Changes to the BMS will be assessed through the review of documentation and audit. The Affected Licensee shall notify the Authority of any significant proposed changes to the BMS a minimum of 8 weeks before the proposed initial implementation date to allow the Authority to review the potential changes and if deemed necessary undertake additional reviews and/or audits.
- (b) Where the scope of compliance changes either by the addition or withdrawal of a Relevant Product, the Audit Body will undertake a review/audit. The addition or withdrawal of any Relevant Product is deemed a significant change and shall be notified to the Authority in accordance with ARTICLE 7.2(a).
- (c) Any compliance issues identified during internal and external audits shall be documented and categorised as Category 1 Deficiencies and/or Category 2 Deficiencies, and included within the Affected Licensee's Risk Register. Any Category 1 Deficiencies and/or Category 2 Deficiencies

that are not satisfactorily addressed within a timescale agreed with the Audit Body will lead to withdrawal of Compliance. Withdrawal of Compliance is a breach of the Regulation.

7.3 Reassessment of Compliance

- (a) Compliance is granted for a three (3) year period after which the Audit Body will undertake a full review of the Affected Licensees compliance with the Regulations.
- (b) The Audit Body will inform the Authority that Compliance has been demonstrated, or has not been demonstrated. Withdrawal of Compliance is a breach of the Regulation.
- (c) Granting of Compliance initiates a further three (3) year Ongoing Audit Programme and continued submission of Performance Reports in accordance with ARTICLE 7.1.

ARTICLE 8 ENFORCEMENT

- 8.1 An Audit Body or the Authority may issue, and a Licensed Operator shall comply with, directions issued to the Licensed Operator in respect of the provisions of this Regulation. Failure to comply with any such direction or otherwise to comply with the provisions of this Regulation may lead to enforcement action against the Licensed Operator under article 35 of the Legislative Decree No.48 of 2002 Promulgating the Telecommunications Law of the Kingdom of Bahrain.
- 8.2 Any breach of this Regulation by a Licensed Operator shall be deemed to constitute a material breach of its license(s) and the provisions of the Telecommunications Law.

ARTICLE 9 ROLE OF THE AUDIT BODY

- 9.1 The Authority shall appoint one or more Audit Bodies to undertake the reviews and audits detailed in this Regulation. Any appointed Audit Body shall hold Accreditation to ISO17021: 2015 (and any subsequent editions) with a scope that includes Telecoms (Storage & Communication) and Information Technology (IAF codes 31/2 and 33, SIC Code 481).
- 9.2 The Audit Body will:
 - (a) Undertake the Initial On-Site Review and advise the Authority of the suitability and proposed timescales of the Project Plan,
 - (b) Undertake the review of the System Functional Description Document and in consultation with the Authority approve its contents or otherwise,
 - (c) With the Affected Licensee plan and agree the Pre-Compliance Audit Programme, keeping the Authority informed of progress, any changes to the programme and of any issues that are preventing completion of the programme,
 - (d) Assess the Affected Licensee against the requirements of the Regulation and confirm when Compliance is achieved or that compliance will not be achieved,
 - (e) In discussion with the Authority and Affected Licensee, produce a 3-year Audit Programme keeping the Authority informed of progress, any significant changes to the programme and of any issues that are preventing completion of the programme,

- (f) At the end of each 3-year cycle, reassess the Affected Licensee against the requirements of the Regulation and confirm ongoing Compliance, or confirm that Compliance has not be achieved,
- (g) At the completion of each audit provide a copy of an audit report and any audit findings to the Affected Licensee and to the Authority, identifying any issues that are preventing compliance from being achieved or putting compliance with the Regulation at risk, or a breach of the Regulation has been identified.

9.3 Costs of Audit

- (a) The costs of the audits required by this Regulation shall be borne exclusively by the Affected Licensee.

Annex 1– Indicative Measurement and Performance Requirements for Billing and Metering Systems

1. The Affected Licensee shall ensure that the BMS shall record two distinct types of Chargeable Event:
 - (a) Usage Event: A Chargeable Event that is generated by a telecommunications switch, triggered by the use of the Relevant Service by a User or Subscriber including, without limitation, phone calls, data downloads and access to content;
 - (b) Non-Usage Events: A Chargeable Event made up of:
 - (i) recurring events including, without limitation, subscription and/or rental charges for equipment and/or services that are applied to the Bill on a regular basis irrespective of any Usage Event or Non-Usage Event) ("**Recurring Events**"); and
 - (ii) non-recurring events including, without limitation, costs for the provision, change or removal of services, products and equipment ("**Non-Recurring Events**").
2. The Audit Body shall assess the Affected Licensee's BMS against the following Measurement Criteria that the Audit Body or the Authority would ordinarily expect to see for Usage Events and Non-Usage Events.
3. Measurement Criteria for Usage Events

	Variable	Allowable Tolerances
A	Call Duration	+/- 1 second or +/- 0.01% (whichever is the less stringent)
B	Data Volume	+/- 100 kilobytes or +/- 0.01% (whichever is the less stringent)
C	Time of Day	+/- 1 second
D	Value of Charges	+/- 1000 BHD or +/- 0.01% (whichever is the less stringent)
E	Count of Events	+/- 0.004% (1:25,000)

4. Measurement Criteria for Recurring Events

	Variable	Allowable Tolerances
A	Duration	+/- 1 day
B	Value of Charges	+/- 1000 BHD or +/- 0.01% (whichever is the less stringent)
C	Count of Events	+/- 0.01% (1:10,000)

5. Measurement Criteria for Non-Recurring Events:

	Variable	Allowable Tolerances
A	Value of Charges	+/- 1000 BHD or +/- 0.01% (whichever is the less stringent)
B	Count of Events	+/- 0.05% (1:2,000)

6. Measurement Criteria for Total Billing and Metering System reliability

Chargeable Events	Allowable Tolerances		
	Logging/Metering	End to End	Billing
Number under or not charged	0.01%	0.1%	0.09%
Number Overcharged	0.002%	0.004%	0.002%
Value under or not charged	N/A	0.05% (1:2,000)	0.05%
Value Overcharged	N/A	0.002% (1:50,000)	0.002% (1:50,000)

Annex 2 – Controls Framework

1. Identifying and remedying Category 1 Deficiencies
 - 1.1 Where Category 1 Deficiencies are identified then the Affected Licensee shall undertake the following actions:
 - (a) Inform the Authority and/or Audit Body within five (5) Business Days of the Category 1 Deficiency being identified;
 - (b) Ensure that Users and/or Subscribers are not financially disadvantaged;
 - (c) Ensure that an initial recovery plan shall be made available to the Audit Body as soon as practicable and, in any event, no later than ten (10) working days after the initial notification of the Category 1 Deficiency;
 - (d) Undertake a root cause and impact analysis exercise and record the corrective actions undertaken by the Affected Licensee; and
 - (e) Record the details of the Category 1 Deficiency, its perceived impact on Users and Subscribers and make such records and details available to the Authority at the regular meetings with the Authority and in planned audit and assessment meetings with the Audit Body.
 2. Individual Bill Accuracy & Error Handling and Complaints by Users and/or Subscribers
 - 2.1 The Affected Licensee shall employ and document processes for receiving, identifying, investigating and dealing with incorrect charges (including refunds), including processes whereby Users and Subscribers can readily question the accuracy of their charges. The Affected Licensee shall ensure that all incorrect charges are measured, documented and included in the quarterly Performance Reports to be submitted to the Authority and/or Audit Body.
 - 2.2 As a minimum, the Affected Licensee's processes for monitoring accuracy shall include:
 - (a) billing pipeline controls, including rating, suspense management and write-off;
 - (b) delayed event processing;
 - (c) timely decrementing of prepay account balances;
 - (d) testing of published and contractual tariffs, including national and international voice calls, SMS and data usage, outbound roaming voice calls, SMS and data usage;
 - (e) Bill accuracy checks;
 - (f) detection of large billing errors and the effectiveness of Bill caps;
 - (g) handling and analysis of Bill adjustments; and
 - (h) timeliness of billing and Bill despatch /availability.
 - 2.3 As a minimum, the Affected Licensee's processes for managing User and/or Subscriber complaints shall include:
 - (a) the methods of receiving Subscriber/User complaints,

- (b) the identification, investigation and crediting or debiting of incorrect charges,
 - (c) where a trend of incorrect charges is identified, escalation to billing error management,
 - (d) retention of complaint volume, analysis, cause and resolution data.
- 2.4 When a Affected Licensee identifies that a User and/or Subscriber has been Overcharged, either through a User or Subscriber query or from its own investigations, it shall take appropriate and proportionate corrective action within twenty (20) Business Days of being notified or becoming aware of the Subscriber having been Overcharged including:
- (a) Undertaking a root cause analysis for verified Overcharges;
 - (b) Identifying the cause and establishing proportionate remedial action to correct it;
 - (c) Where the root cause affects multiple Users or Subscribers, including all affected bills in a recovery programme.
3. Measurement of Billing errors
- 3.1 The Affected Licensee shall, in accordance with the requirements of the Performance Reporting Document, assess and report on as part of the Performance Reports any billing errors including the following:
- (a) Late billing (as a result of delays between calls completing and being presented on a Bill) which causes problems when a User is charged on the basis of a bundle of calls;
 - (b) Inadvertent Roaming – the User can be charged for the call on the network that provided the service (even if the User did not intend to use that licensed operator or roaming provider);
 - (c) Termination of mobile calls – where calls originating from mobiles maintain the connection even after the User has terminated the call
 - (d) Minimum call charges and durations – these must be clearly stated in the Tariffs and the BMS must accurately measure the minimum call charges and durations;
 - (e) Rounding within bundles and initial connection charges – these charges must be clearly stated in the relevant Tariffs and the BMS accurately measure these metrics;
 - (f) Excluded number ranges and national and international roaming charges.
4. Detection of significant billing errors
- 4.1 Each Affected Licensee shall employ a suitable process, to be approved in writing by the Authority, for the detection of significant billing errors including any Bills that contain significant deviations from the expected norm including the following:
- (a) Detection of any Bill which differs by a set percentage from historical Bills for that User or Subscriber;
 - (b) Detection of any billing run which differs in total value by a set percentage from historical billing runs that would be expected to be similar;
 - (c) Trend analysis of rejected Chargeable Events;

- (d) Manual analysis/recalculation of a representative sample of Bills;
- (e) Specific analysis of the reasons for unexpected reports produced by the BMS;
- (f) establishing a team of Subject Matter Experts from within the Affected Licensee and third parties as appropriate, to investigate the cause(s) of the Incident;
- (g) establish immediate actions to be taken to prevent further occurrences;
- (h) undertake a full investigation and Root Cause Analysis to determine;
- (i) when the Incident was detected and how;
- (j) when the Incident started and ended, if it is no longer continuing;
- (k) the number of Subscribers impacted;
- (l) the value of the incorrect billing;
- (m) what was the cause(s) of the Incident;
- (n) what corrective actions are required to prevent a reoccurrence;
- (o) establish a recovery programme to credit Subscribers within 60 days (is this acceptable to the TRA?) of the date the Incident was identified;
- (p) ensure best endeavours to trace all Subscribers that have left the Affected Licensee to issue any credit;
- (q) any incorrect charges (credits) and the volume of Bills impacted shall be included within the Performance reporting data for the period of the Incident; and
- (r) implement the corrective actions and confirm their effectiveness.

5. Tariff Controls

5.1 This Annex contains guidance as to the appropriate details Affected Licensees should consider including within a Tariff schedule and/or terms and conditions in respect to broadband and mobile data (Publicly Available Internet Access Services). The information should be on the Affected Licensee's website and within other published material. Illustrations and/or graphical representations should be used where appropriate.

5.2 As a minimum, the information provided shall include:

- (a) Tariff description and details;
- (b) Periodic package / plan charges;
- (c) Initial call connection charges;
- (d) Minimum call charges and durations;
- (e) Service fees;
- (f) Details of any included ("bundled allowance") voice minutes, SMS or data allowance;

- (g) Charges incurred when bundled allowance limits are exceeded;
- (h) Outbound international call charges to fixed and mobile numbers;
- (i) Call and data charges whilst outbound roaming on foreign networks;
- (j) The risks associated with inadvertent roaming;
- (k) Rounding of call durations and data usage, or any other Chargeable Events;
- (l) the application of VAT;
- (m) a definition of a kilobyte (kB), Megabyte (MB) and Gigabyte (GB);
- (n) A statement on the Affected Licensee's data rounding rules and data units, if appropriate;
- (o) An explanation of what is 'upstream' and 'downstream' data flow, in relation to the Subscriber and/or User and the Telecommunications Network;
- (p) A statement on the flow of data over the Telecommunications Network and whether it includes re-sent data packets;
- (q) How data usage is calculated, i.e. data that travels over the network in both directions upstream and downstream, (the measurement of which may differ from the data the end-user's device consumes and differs from the data usage reported by the device);
- (r) How does encryption and addressing data (i.e. the 'headers' on each packet of data) affect the amount of end-user data used to download or upload content; and
- (s) Which services do not consume chargeable data, i.e. the Affected Licensee's portal or application. The impact of Subscribers and/or Users using proxy servers or VPNs to access the Affected Licensee's portal.

5.3 The Affected Licensee shall have a process for managing the publishing of tariff and Terms & Conditions information in all media formats, including advertising that contains tariff information. This shall address the release of new tariffs and/or products, changes to existing tariffs and the withdrawal of tariff information, noting the requirement of section 5.4 below.

5.4 Where an Affected Licensee withdraws a tariff from sale, a process shall exist where a Subscriber or User on a withdrawn tariff can access information about their tariff charges.

5.5 An Affected Licensee shall have a Tariff change management process, addressing as a minimum;

- (a) the introduction of new tariffs,
- (b) the amendment of existing tariffs,
- (c) the withdrawal of existing tariffs,
- (d) urgent tariff changes due to changes in legislation or regulation,
- (e) it shall include a responsibility assignment matrix.