

**CONSULTATION PAPER ON
BILLING AND METERING ACCURACY
OF PUBLIC TELECOMMUNICATIONS SERVICES
IN HONG KONG**

30 May 2000

INTRODUCTION

In order to enhance the metering and billing integrity of public telecommunications services, the Office of the Telecommunications Authority (OFTA) had engaged the British Approvals Board for Telecommunications (BABT¹) in March 1996 to study the establishment of a Meter Approval Scheme (hereinafter referred to as the “Scheme”) in Hong Kong. The main objectives of the study were to –

- establish, through appraisal of the quality systems proposed by carriers, that the designs of the meter systems are inherently capable of meeting the accuracy standard;
- ensure, through formal approval of the quality systems operated by the carriers, that the meter systems have been implemented and are being operated such that the inherent accuracy is realised in practice; and
- establish, through periodic measurements, that the meter systems perform in practice as expected and that the measured meter accuracy is within the limits set by the accuracy standard.

2. After a series of meetings and a workshop held to present and discuss the preliminary findings of the study with the public telecommunications operators, BABT completed a report in August 1996 entitled “The Implementation of a Metering and Billing Approval Scheme for the Telecommunications Carriers in Hong Kong”. In the report, BABT proposed to OFTA that -

- a Meter Approval Scheme similar to that implemented in United Kingdom (UK) be applied to Hong Kong;
- the Scheme be introduced in phases in the first instance to the then Hong Kong Telephone Company Limited, HKTC (now renamed as Cable & Wireless HKT Telephone Limited (CWHKTC)) and one mobile network operator; and
- all the remaining operators be given the option to avail themselves of

¹ BABT was the consultant to the Office of Telecommunications (OFTEL), United Kingdom for the detailed implementation of the United Kingdom’s Meter Approval Scheme.

familiarization training to fully appreciate the principles of the Scheme and its practical applications.

3. In June 1996, BABT presented the above report to the Government and industry in a workshop. OFTA also solicited further views and comments from network operators on the BABT's proposal for setting up a metering and billing approval scheme in Hong Kong. The majority view of network operators was that they were in support of the principles of developing such a Scheme in Hong Kong in order to enhance the customer confidence in the bills issued by them. However, they generally considered that the BABT's proposal was far too complicated to implement and not cost effective if they were required to follow the proposal closely. Therefore, it would not be practical and cost effective for Hong Kong to implement exactly the same Scheme currently adopted by the UK.

4. Furthermore, as BABT suggested in its report to select one fixed network and one mobile network operator to implement the Scheme at the first stage, there was concern about the criteria and fairness of selecting particular operators to implement the proposal. A summary of the initiatives proposed in, and OFTA's views on, the BABT's report² and the operators' comments and views are given in Annex 1 and 2 respectively.

5. The existing arrangement is that individual operators perform their own checks on the metering and billing accuracy and ensure that the licence obligations on metering and billing accuracy are met. The TA performs *ad hoc* checks and investigates consumer complaints on metering and billing accuracy.

NEEDS AND BENEFITS OF METER APPROVAL SCHEME

Increase of customer complaints

6. In recent years, as a result of the thriving and liberalised telecommunications industry, there has been a substantial growth and competition in the mobile, international direct dial (IDD) and the Internet services segments of the market. The service prices and call charges have been reduced dramatically. However, it has recently come to the attention of the Telecommunications Authority (TA) that over the past few years the number of customer complaints in the telecommunications industry has been increasing at a substantial rate and many of them are related to the disputes about over or wrong charging by operators in the bills and also about the operators' poor service qualities. The breakdown of the consumer complaints as received and handled by the Consumer Council from January 1996 to the end of April 2000 in different

² Full BABT's report can be downloaded from OFTA's Internet home page <http://www.ofa.gov.hk> at the Reports, Papers & Guidance Notes column

service categories is given in the following table:-

	1996	1997	1998	1999	1-4/2000
Telephone/Fax Services (including IDD/long distance call services)	36	98	130	249	99
Mobile Telephone Services	39	94	213	495	624 ³
Internet Services	8	8	77	131	47
Paging Services	13	14	52	70	13
Others	0	0	2	10	95
Total	96	214	474	955	787

7. It can be seen that as compared to the figures in 1998, the total number of consumer complaints related to charge dispute has increased by 102% last year. From January to the end of April this year, the Consumer Council has already received in total 483 complaint cases of this type. The reason for this substantial increase of consumer complaints against public telecommunications operators was mainly due to the lack of customer confidence in the bills issued by operators and also there had not been any information from operators to customers about the accuracy of charges shown in the bills. *The TA considers that there is a need to address this problem in order to resolve and minimise the amount of disputes between operators and customers on the charging issue.*

Further liberalisation of the telecommunications market

8. As a result of further liberalisation of the local fixed telecommunication network services market using wireless technology and hybrid fibre coaxial networks, and external facilities-based telecommunications market from 1 January 2000 onwards, there will be thirty or more new network operators entering the marketplace for the provision of local and external telecommunications services to customers. It is expected that competition in the local fixed services, IDD and Internet services markets will be further enhanced. This may increase the number of charging disputes between customers and operators and hence customer complaints. *In view of the increasing customer complaints and additional operators in the market, the TA considers that there is a genuine need to re-visit BAPT's proposal and work out a practical and cost effective approach of requiring operators to comply with a set of minimum billing and metering accuracy standards and publishing the results of the compliance status of operators in the public domain.* The purpose is to provide customers with more information, confidence and assurance in the bills issued by operators such that it will minimize the number of charging disputes between operators and customers. It would be necessary for OFTA to closely monitor the performance and quality of individual operators with respect

³ About 304 complaints regarding increasing of monthly charge

to the billing and metering accuracy.

Operators' licence obligations

9. In the licences issued to operators of wireline FTNS, local wireless FTNS and external FTNS, there is a General Condition (GC) 24 specifying the general requirement on "Metering Accuracy". The same condition also appears at the Special Condition (SC) 16 of the licences issued to the six operators of Personal Communications Services. GC24 or SC16 stipulates that -

- "(1) The licensee shall take all reasonable steps to ensure that any metering equipment used in connection with the Service is accurate and reliable.*
- (2) Upon the written request of the Authority, the licensee shall conduct tests on metering equipment to assess its accuracy, reliability and conformity to the technical standards, if any, specified by the Authority. The licensee shall submit the test result to the Authority within 14 days after the date of the test or such other longer period as the Authority may determine.*
- (3) The licensee shall keep such records of any metering equipment in such form as may be specified by the Authority and shall supply such records to the Authority on the written request of the Authority."*

10. Similar special conditions on metering requirement also appear in the Public Non-exclusive Telecommunication Services licences issued to operators of external telecommunication services, virtual private network services, international calling card services, international value-added network services (IVANS), Internet services and international simple resale for facsimile and data services. The content of this SC9 condition is -

- "SC9 (1) The licensee shall take all reasonable steps to ensure that any metering equipment used in connection with the service operated under this licence is accurate and reliable.*
- (2) Upon written request of Telecommunications Authority, the licensee shall conduct tests on metering equipment to assess its accuracy, reliability and conformity to the technical standards, if any, specified by the Telecommunications Authority. The licensee shall submit the test result to the Telecommunications Authority within 14 days after the date of the test or such other longer period as the Telecommunications Authority may determine."*

11. *In pursuance of the above licence conditions imposing obligations on relevant operators to comply with the metering accuracy requirements, the TA is of the view that the industry should adopt a unified and transparent approach of meeting the billing and metering accuracy requirements such that every concerned operator in the field would have to follow and conform to them.*

Benefits

12. The Meter Approval Scheme would benefit both the customers and the operators. Customers would be convinced that their bills are accurate because their operators are in compliance with the billing and metering integrity standards while operators would be willing to invest in the compliance with the scheme because the investment is justified and rewarded. With the Meter Approval Scheme in place, it is anticipated that there would be less doubt from customers on the accuracy of operators' metering or billing system as long as they are in compliance with the required billing and metering integrity standards. It is also anticipated that the number of complaints on billing disputes against operators will be reduced significantly in the future. The company image of those operators who are in compliance with the standards will also be greatly improved.

EXPERIENCE IN OTHER JURISDICTIONS

13. Some overseas countries such as the Singapore, United Kingdom, Australia and the United States have formulated billing and metering requirements and standards for compliance by telecommunications operators.

14. In Singapore, the Infocomm Development Authority (IDA) sets quality of service standards for operators to respond to billing enquiries which must be dealt with within 5 working days. However, it has not set any specific metering and billing standards. Instead, it requires operators to:

- ensure that any metering equipment used in connection with the services operated is accurate and reliable; and
- where required by IDA, the operator must conduct tests on metering equipment to assess its accuracy, reliability and conformity to the technical standards, if any, as specified by IDA. The operator must submit the test results to IDA within 14 days after the date of the tests or such other longer period as IDA may determine.

(Extracted from "Quality of Service", "Policy & Regulation" in IDA's Website at <http://www.ida.gov.sg>)

15. In the United Kingdom, the Office of Telecommunications (OFTEL)'s Meter Approval Scheme was introduced in 1988 with the objective of giving customers more confidence in the accuracy of their bills by ensuring that they are charged correctly. The Scheme initially required British Telecom and Cable & Wireless Communications to have their metering and billing systems checked by an independent body to ensure customers were being charged correctly. The Scheme has subsequently been extended to Kingston Communications, Cellnet and Vodafone. The billing and metering integrity standard used in the United Kingdom is OTR003. However, in its February 2000 Statement: "Ensuring telephone bills are accurate – A statement on the review of the OFTEL Meter Approval Scheme for Public Telecommunications Operators", OFTEL considers that there is a need to extend the Scheme to cover other operators and other services. OFTEL will revise the standards set out in the current Scheme to ensure that they are appropriate to the levels of accuracy required in billing without being unduly onerous.

16. In Australia, the Australian Communications Industry Forum (ACIF) is a communications self-regulation body established in 1997 by the industry to manage communications self-regulation within Australia. ACIF had issued an "Industry Code on Call Charging and Billing Accuracy"⁴ in October 1998 which has embraced the Call Charging and Billing Technical Standard, AUSTEL TS 029. The main objective is to specify the requirements for checking the accuracy of call charging and billing of standard telephone service in a multi-service deliverer, multi-network environment in Australia. It will assure end customers, Regulators and Government that carriers and carriage service providers provide an acceptable level of overall accuracy in the calculation of call charges and is intended to give customers confidence that call charging and billing is correct and to ensure that carriers and carriage service providers are sensitive to consumer billing complaints.

17. In the United States, the Federal Communications Commission⁵ (FCC) has in its rulemaking adopted generally the "truth-in-billing" principles in order to ensure that consumers receive thorough, accurate, and understandable bills from their telecommunications carriers (First Report and Order and Further Notice of Proposed Rulemaking on "Truth-in-Billing and Billing Format" (CC Docket No. 98 - 170) released on 11 May 1999). The "truth-in-billing" principles and guidelines make telephone bills more consumer-friendly by providing consumers with information they need to make informed choices in a competitive telecommunications marketplace and to protect themselves against unscrupulous practices such as "slamming and cramming"⁶. The FCC enacted

⁴ Internet URL address of ACIF is <http://www.acif.org.au>

⁵ Internet URL address of FCC is <http://www.FCC.gov>

⁶ "slamming" means switching a consumer's telephone carrier without his or her knowledge or consent and "cramming" means the practice of placing unauthorised, misleading, or deceptive charges on consumers' telephone bills.

broad guidelines that implement three basic principles -- consumers should know: (1) who is asking them to pay for service, (2) what services they are being asked to pay for, and (3) where they can call to get more information about the charges appearing on their bill.

18. A brief summary of the basic billing and metering requirements of OFTEL, ACIF and FCC are given in Annex 3 for reference.

THE PROPOSAL

19. Having considered the industry comments on the BABT's proposal of the Meter Approval Scheme, the TA intends to adopt a practical approach and work out a simplified version of the Scheme that would best suit the need of customers and the industry and at the same time be economically and technically feasible for implementation in Hong Kong's environment. The simplified scheme will be elaborated upon under the following headings:-

- a) the scope of the proposed scheme
- b) billing and metering integrity standards
- c) self appraisal system
- d) auditing system
- e) monitoring system

Scope of proposed scheme

20. The TA considers that the scope of the proposed scheme should, initially, be applied only to those charged services of local, international and mobile services based on usage or time charge, especially for the IDD type of services. It does not apply to those operators with services having a flat-rate service/call charges such as public radio paging services. Therefore, it is proposed that the following network operators and service providers⁷ would have to participate in the proposed scheme in so far as they operate services which involve usage or time charges:

- Fixed Telecommunication Network Services (FTNS) –
 - wireline-based FTNS operators⁸
 - local wireless FTNS operators
 - satellite-based external FTNS operators
 - cable-based external FTNS operators
- Public Mobile Radiotelephone Services (PMRS)
- Personal Communications Services (PCS)

⁷ Exact figures and names of operators are published at OFTA's home page <http://www.ofa.gov.hk>

⁸ Including the existing 4 wireline FTNS operators and Hong Kong Cable Television Ltd.

- External Telecommunication Services (ETS)
- Internet Service Providers (ISP)
- International Calling Card Services
- Virtual Private Network Services (VPNS)
- International Simple Resale (ISR) for Facsimile and Data (ISR fax and data)
- International Value-Added Network Services (IVANS)

Billing and metering integrity standards

21. Billing and metering integrity standards are important in the proposed scheme such that operators need to ensure that their billing and metering systems are accurate and will comply with these standards.

22. In Hong Kong, some local fixed network operators have adopted their own standards to ensure the accuracy of its bills to the customers. They perform constant checking of the metering accuracy by making test calls in the network regularly. The adopted charging error is around 1 in 10,000 with a sample size of up to 20,000 test calls per month.

23. *The TA considers that in developing the required billing and metering integrity standards for Hong Kong, the industry could make reference to the standards, guidelines and principles adopted by other countries summarised in paragraphs 13-18 and Annex 3 in order that consumers will receive accurate and user-friendly bills from telecommunications operators.*

Self Appraisal System

24. The TA proposes to adopt a self-appraisal approach on the billing and metering systems of operators. The basic principle is that each network operator or service provider is required to perform a self appraisal on its billing and metering system based on a Quality Assurance Manual which is to be submitted to the TA for approval. A director or senior management staff of the network operator or service provider is to be appointed to be responsible for the operation of the billing and metering system. After the self appraisal, the network operator or service provider needs to make a declaration to the TA that it has complied with the agreed billing and metering integrity standards contained in the Manual. It is necessary for the network operator or service provider to perform measurements or test calls in accordance with the requirements and procedures stated in the Manual. The TA envisages that under the Manual, the network operator or service provider will be required to conduct, for major services operated by the operator or provider, a specified number of test calls at specified intervals and assess the accuracy of its entire metering and billing system, from the metering of calls to the generation of bills to customers. The appraisal procedures will be further discussed in the industry forum as mentioned in paragraphs 27 below.

Auditing System

25. To ensure that the measurement results developed in the self-appraisal system are in compliance with the required billing and metering integrity standards, the TA considers that it is necessary for operators to employ certified public auditors to audit and certify the measurement results which have to be submitted to the TA regularly.

Monitoring System

26. In order to have an effective monitoring system to keep track of the performances and compliance status of operators with respect to the billing and metering integrity standards, the TA proposes that all operators should be required to submit to him, apart from the certified measurement results mentioned in paragraphs 24 and 25 above, the number of customer complaint cases (normalised to the number of bills issued) received with respect to bill or charge disputes with customers regularly. The TA will then publish and update from time to time all the received information including the names of operators whether they are in compliance with the billing and metering integrity standards or not on OFTA's homepage. This will allow the public to know the compliance status and performances of individual operators. Customers would also, based on the published information, make their informed choices and decisions of subscribing to specific operators.

INDUSTRY FORUM

27. The TA proposes to set up an industry forum with the participation of representatives from the concerned telecommunications operators, consumer and user groups and OFTA to study again the BABT's proposal together with the proposal given by the TA above. The industry forum would have to devise suitable billing and metering accuracy standards, requirements and procedures with a view to achieving efficiency, cost-effectiveness and transparency for the implementation by the industry and establishing the trusts and understanding of customers towards the bills issued by operators. The TA anticipates that the industry forum should complete its work within the shortest time frame possible, preferably in three months' time from the start of the process of the forum.

INVITATION OF COMMENTS

28. Views and comments from the telecommunications industry and other interested parties should be made in writing and should reach the Office of the Telecommunications Authority **on or before end of June 2000**. The TA intends to publish all views and comments and to disclose the identity of the source. Any part of the submission, which is considered commercially confidential, should be clearly marked. The TA would take such markings into

account in making his decision as to whether to disclose such information or not.

29. Submissions should be addressed to:

Senior Telecommunications Engineer (Technical Support 1)
Office of the Telecommunications Authority
29/F, Wu Chung House
213 Queen's Road East
Wanchai, Hong Kong

Telephone No.: 2961 6766

Fax No.: 2591 0316

E-mail : wkluk@ofta.gov.hk

30. An electronic version of the submission in Word 97 format should be provided to facilitate the publication of the comments.

Office of the Telecommunications Authority

30 May 2000

Annex 1

Summary of Initiatives Proposed in, and OFTA's Views on, the British Approvals Board for Telecommunications (BABT)'s Final Report entitled "The Implementation of a Metering and Billing Approval Scheme for the Telecommunications Carriers in Hong Kong" dated August 1996

BABT had proposed the following four initiatives in its Final Report:

- Initiative A: the establishment of a billing and metering approval scheme to address the local network integrity issues.
- Initiative B: the extension of the terminal equipment certification procedures in Hong Kong to cover the functionality of terminal equipment which impacts on metering/billing and the customers perception of metering/billing accuracy, supported where necessary by the establishment of appropriate standards.
- Initiative C: appropriate action on publicity and the availability of customer information.
- Initiative D: the establishment of an Inter-operator Accounting Approval Scheme (IOAAS).

Views on BABT's Initiative A

BABT proposed that OFTA should implement a metering scheme similar to the UK metering scheme but with an extended scope to cover local loop and mobile interface network integrity. The local operators were of the view that it would not be cost effective to closely follow BABT's scheme. They considered that the benefits derived from such a scheme would be far outstripped by the cost which is required and the burden would ultimately be passed to the public.

OFTA had also obtained views from some operators in the UK. They advised that it was rather time consuming and costly to establish the scheme. The recurrent cost to maintain the scheme was also very high. They remarked that the UK Standard was not easy to maintain and two or three system failures per year would put the company outside the standard if not properly detected, reported and controlled. However, they agreed that the scheme did provide a high degree of assurance to customers and the regulator about the accuracy. They also felt that the scheme added a quality competitive advantage to their business and assisted them to build better control of processes and they saved a significant revenue after the setting up of the scheme.

The introduction of a Metering Approval Scheme will provide customers with the necessary confidence in the accuracy of the meter and billing processes of the

telecommunications service operators to which they have subscribed their services. Hence there are benefits in introducing such a scheme in Hong Kong. However the scheme proposed by BABT (page 15 in BABT's report) is far too complicated and costly, as commented by the local and UK operators. OFTA therefore proposes that a simpler scheme be implemented in Hong Kong. Instead of examining and appraising the meter and billing systems of each operator to the last detail, OFTA proposes that these systems be treated as "black boxes" and the operators are required to demonstrate to OFTA, by means of an agreed measurement methodology backed up by a quality assurance system, that an agreed standard is indeed complied with.

Views on BABT's Initiative B

BABT recommended that OFTA should extend the terminal equipment certification procedures in Hong Kong to cover the functionality of terminal equipment which impact on metering/billing, and the customers perception of metering/billing accuracy, supported where necessary by the establishment of appropriate standards. The operators did not give any comments on this initiative.

OFTA had already prepared the required specifications (HKTA2020 and HKTA2024) for payphones. The requirement of metering accuracy had been included in this specification. To minimize unnecessary administration workloads, it would be sufficient for OFTA to conduct document evaluation or accept operators' self-declaration.

Views on Initiative C

BABT proposed that OFTA should take action on publicity and customer education in order to improve customer awareness of the subject matter. Proposed actions are Appendix 4 of BABT's report. OFTA believes that customer ignorance or misunderstanding can be corrected through publicity.

Views on Initiative D

To address OFTA's objective of providing assurance amongst operators regarding the integrity of inter-operator accounting, BABT proposed the establishment of an Inter-Operator Accounting Approval Scheme (IOAAS). In the past, OFTA received complaints regarding bill settlement problems amongst FTNS operators. OFTA considers that this initiative of IOAAS will be useful to resolve this kind of disputes amongst operators.

Summary of comments received from the industry on BABT's Final Report entitled "The Implementation of a Metering and Billing Approval Scheme for the Telecommunications Carriers in Hong Kong"

1. Cable & Wireless HKT Limited (CWHKT) agreed in principle that telecommunications operators in Hong Kong should develop an accurate and reliable metering and billing system that could assure customer confidence in their metering and billing operations. They would support OFTA in developing a metering and billing scheme that would be practical and cost-effective for the telecommunications industry in Hong Kong. However, CWHKT expressed that it would be very costly to implement. Thus they opined that it would not be cost effective to closely follow the Scheme. If CWHKT had to follow all the recommendations in its proposed scheme actions, they had to work through an Appraisal Process before they could proceed into the next stage, that was, the Measurement Process. In fact, a measurement system/process (the Measurement Process) had already been developed and implemented by CWHKT. It meant that CWHKT was able to deliver the measurement result at this moment without working back on the whole and lengthy Appraisal process.

2. New World Telephone Limited wished to affirm its strong support for the following recommendations made in the report.

- restricting the application of the proposed Meter Approval Scheme to CWHKT and one or more mobile operators in the first phase;
- not including customer terminal equipment within the scope of the proposed Meter Approval Scheme;
- it was premature to introduce comparable performance indicators at this stage in the development of competition and that consideration of such should be deferred until after full implementation of the Meter Approval Scheme etc.

3. New T&T Hong Kong Limited welcomed the BABT's report, as the principles underlying the BABT report would ensure that the consumer and public of Hong Kong would benefit from a metering and billing approval scheme, if such scheme was fairly and reasonably applied across all operators. However, it was extremely concerned that the proposals set out in the BABT report were cumbersome, unwieldy and costly to implement, especially where the new operators were concerned.

4. Hutchison Communications Limited (now renamed as Hutchison Global Crossing Limited) recognized the benefits and importance of a metering and billing approval scheme, and was fully committed to ensuring meter and billing accuracy. It appreciated OFTA's initiatives in this area and would provide its support to OFTA in developing a cost effective, efficient and equitable scheme.

In general, the requirements of the proposed scheme as detailed in the report were very extensive and demanding. The quality requirements basically followed the ISO9001 requirements, which was not adopted by most network operators. From the experience of other organizations, it normally took over 9 months just to implement the quality system. OFTA should recognize the heavy workload involved. The timeframe for different types of assessments should be sufficiently long and a gradual implementation program should be ensured. The proposed total elapse time from submission of application to completion of all the assessments for a network operator will be less than one year. It will not be feasible for an operator to complete the required assessment program within this short time frame.

5. SmarTone Mobile Communications Limited considered that it was an unjustifiable burden on the operators to compile with other schemes without sufficient information as to the extent of benefits to the customers resulting from such schemes. OFTA therefore should collect more such information before considering to introduce them. BABT recommended to have a phased approach with CWHKT and another mobile network operator initially in the schemes. If OFTA were to accept this, the first phase with these two operators should be used as a trial to make any necessary changes to BABT's standards. The other PMRS operators should be consulted throughout such trial. SmarTone already had certain metering and billing process and accuracy program, it was inequitable to require it to change such process and program to be in compliance with other schemes which might be 'geared' towards these 2 operators participating in the trial and such schemes would result no additional apparent benefits to the customers. To make the process more efficient, OFTA should discuss with each operator to agree on the implementation plan prior to the commencement of the schemes. This was to enable the operators to consider any changes required in the existing programs or procedures to comply with such scheme.

6. Hong Kong Institution of Engineers considered that the security issue remained to be a concerned one. Any protection from intrusion, thief or invalid attempt to the metering system had to be carefully addressed, no substantial or specific code of practice / performance standards have been covered in the report.

Basic Billing and Metering Requirements and Standards of OFTEL, ACIF and FCC

Office of Telecommunications (OFTEL), United Kingdom

OFTEL’s standard for Public Telecommunications Operators’ Meter System is OTR 003:1993. In summary, they are:

- Number of inaccurately metered calls shall be no greater than 1 in 10,000 of total calls;
- Number of inaccurately metered calls affected by overmetering shall be no greater than 1 in 50,000 of total calls;
- Value of inaccurately metered calls not exceeding 1 in 20,000 of value of total usage; and
- Value of inaccurately overmetered calls not exceeding 1 in 100,000 of value total usage

Australian Communications Industry Forum (ACIF), Australia

ACIF’s “Industry Code on Call Charging and Billing Accuracy” dated October 1998 has embraced the Call Charging and Billing Technical Standard, AUSTEL TS 029. The charging accuracy parameters are:-

For digital originating calls – calls record charging

Performance Indicator	Minimum Accuracy Level
Call Duration	60 : 100,000
Additional Call	1 : 200,000
Overall	76 : 100,000

For analogue originating calls – calls record charging

Performance Indicator	Minimum Accuracy Level
Call Duration	60 : 100,000
Additional Call	2 : 100,000
Overall	80 : 100,000

Sampling accuracy must be at a 95% degree of confidence with a sample size of 18,000 test calls over an observation period of at least one month and less than three months for each category of calls.

Federal Communications Commission (FCC), United States

In the First Report and Order and Further Notice of Proposed Rulemaking on “Truth-in-Billing and Billing Format” (CC Docket No. 98 - 170) released on 11 May 1999, the FCC has adopted generally the “truth-in-billing” principles in order to ensure that consumers receive thorough, accurate, and understandable bills from their telecommunications carriers. Specifically, it requires:-

- that consumer telephone bills be clearly organised, clearly identify the service provider, and highlight any new providers;
- that bills contain full and non-misleading descriptions of charges that appear therein; and,
- that bills contain clear and conspicuous disclosure of any information the consumer may need to make inquiries about, or contest charges on the bill.
