



MALAYSIAN COMMUNICATIONS AND MULTIMEDIA COMMISSION

A REPORT ON A PUBLIC INQUIRY THE MANDATORY STANDARDS FOR THE QUALITY OF SERVICE PHASE TWO

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SECTION 1: SUMMARY AND CONCLUSIONS

Introduction

1. Under Sections 7 and 104(3) of the CMA the Minister had issued a Ministerial Direction on the Quality of Service, Direction No.3 of 2003 to the Commission to determine mandatory standards on the quality of service for public payphone, digital leased line and broadband access services for the benefit of consumers.

Public Inquiry

2. The Commission embarked on a public inquiry on 18 August 2003 and released a Public Inquiry Paper on the Proposal for the Determination of Mandatory Standards for the Quality of Service as part of the inquiry process. The paper contained a preface and the proposed quality of service mandatory standards for each of the above services.
3. Submissions were sought on
 - (a) The appropriateness of the items to be listed in the proposed framework;
and
 - (b) Additional items/ service quality quotients that may warrant inclusion in the proposed framework.
4. The deadline for submissions was 12 p.m., 3 October 2003. At the close of inquiry the Commission had received six submissions. A summary of the comments /suggestions are contained in Section 4 of this Report, entitled "Findings".
5. Given the fact that all six submissions did meet the deadline, the Commission was obliged to consider the submissions. As such, any position in this Report emanates from the Commission's deliberation of the submissions and a reassessment undertaken of various positions hitherto adopted.

Conclusions

6. The Commission is of the considered opinion that the proposed mandatory standards for the quality of service play an important role in streamlining further the quality of service frameworks under the new regulatory environment (post Communications and Multimedia Act (CMA) 1998).
7. Currently there are no regulatory frameworks for the quality of service in these three areas.
8. The Quality of Service (Phase Two) initiative reflects in the Commission's view, the long-term developmental horizon of the ICT industry and the national policy objectives in the Communications and Multimedia Act 1998, which can only be achieved if there is sensitivity to an ethos of quality consciousness at a high level.
9. The focus on the quality of service standards are in tandem with Malaysia's Vision 2020 and the Commission's Framework of Industry Development, both of which are aimed at making Malaysia an aggressive and comprehensive information and communication technologies and services player at the global level.
10. The Commission is satisfied that these mandatory standards are objective measures that reflect intrinsic measures of quality and global best practices and standards. In selecting a benchmark for the Quality of Service, the Commission is of the opinion that the benchmark must be meaningful to the customer and enable the customer to assess and make informed decisions on the level of quality that they are enjoying. The benchmark will be equally useful for the Commission to gauge the performance of service providers and operators in fulfilling its role to monitor the industry.
11. The Commission is of the opinion that the mandatory standards in quality of service imposed are capable of implementation from a financial and technical standpoint. Adhering to regulations does increase the cost of doing business to service providers. Therefore the standards proposed as mandatory standards are composed of standards that have been carefully

chosen, reflecting the critical importance of the services in question. Thus the Commission is confident that such an approach will not result in an over-policing of the industry at large that will stifle innovation and development. This also serves to explain why the Commission is careful in selecting the services for which mandatory standards ought to be implemented.

12. The Commission is of the view that the industry as a whole being subjected to a mandated quality of service standard would give rise to quality consciousness and best industry practices that act as an ideal platform for companies with regional or global ambitions to launch or expand their business operations. This is necessary given that technology, knowledge and capital are no longer confined to national boundaries. Thus our business models and practices must be in sync with global norms and expectations.
13. The standards on the quality of service are further clarified through clear **definitions** that avoid ambiguity of the concept / parameters involved. The **standard, measurement and reporting** procedures are clear and precise to facilitate clear-cut compliance on the part of industry.
14. The Commission will issue three separate Determinations on the Quality of Service for each of the above services, as this is operationally more feasible; and allows for easy amendments and reference in the near future.
15. The mandatory standard for public payphone service applies to the application service providers (ASP); whilst for digital leased line services and broadband access services the mandatory standards shall be applicable at the network service provider (NSP) level. This is because it is felt that the network management, design, layout and ownership are the critical factors that impact ultimately upon the quality of service offered.
16. This Report captures the conclusions above and makes reference to the Commission's proposed quality of service framework in the following manner:

(a) Section 2 describes the framework for the proposed mandatory standards for the quality of service. These standards are to be regulated by

the Commission under S 123 of the CMA in its role as a monitor and gauge of industry performance;

(b) Section 3 highlights the methodology used to evaluate the input emanated from the public inquiry;

(c) Section 4 paraphrases the public input received; and

(d) Section 5 highlights the way forward on quality of service principles.

SECTION 2: PROPOSED FRAMEWORK FOR THE QUALITY OF SERVICE

PUBLIC PAYPHONE SERVICE

17. This section applies to all providers of public payphone services. Public payphone service is an applications service, that is provided in public places to which the general public has access, that can only be used for communication (other than a free call or a call made with operator assistance) if the user, immediately prior to use, makes or arranges to make a payment (based on Communications and Multimedia (Rates) Rules 2002) for that particular call but does not include a rented payphone. The proposed quality of service framework is as follows:

PUBLIC PAYPHONE SERVICE AVAILABILITY

Definition

18. Public payphone service availability means that the payphone concerned must be in a proper working condition so that users are able to utilize it to make phone calls. The public payphone must have the following characteristics:
- (a) dial tone;
 - (b) if equipped with a functional card slot, the card slot shall be able to accept, read and return a phone card and/or credit card and/or
 - (c) if equipped with a coin slot, the coin slot shall be able to accept coins in proper denominations as stipulated by the instructions on the public payphone;
 - (d) a handset that is in proper working order enabling the user to speak to the other party at the end of the line;
 - (e) a functioning dial pad; and
 - (f) display clear and conspicuous signage indicating that the service provided is a “public payphone”.

Phone calls here shall refer to all types of calls that can be made from that particular public payphone, such as free calls, emergency calls, local calls, national long distance calls and international calls.

Standard

19. 90% of all public payphones of any one-service provider must have service availability at any one point of time.

Measurement

20. The measurement of the standard shall be by data collected and submitted by the Applications Service Provider (ASP). The data is to be checked and reported by the ASP for the period ending 30/6 and 31/12.

Reporting

21. Complete and accurate records of the public payphone service availability time shall be maintained by the application service providers (ASPs). Such reports shall be in the form and format as may be prescribed by the Commission from time to time. Each report shall be accompanied by a declaration signed by an officer of the service provider duly authorized by the board of directors, stating that the report is true and accurate. These reports shall be submitted to the Commission not later than six weeks after 30 June for reporting period January to June, and 31 December for reporting period July to December respectively.

DIGITAL LEASED LINE SERVICE

22. This section applies to network service providers providing digital leased line service from 64 Kbps and above. The proposed quality framework is as follows: -

ANNUAL DIGITAL LEASED LINE SERVICE AVAILABILITY

Definition

23. Annual digital leased line service availability means the total operational hours of the service, less the total transmission downtime or disruption to the service due to service failure a the period of 12 months.
24. Downtime for the purposes of upgrading or maintaining the network system will be excluded from this ratio, provided users are informed in advance of such maintenance action.
25. Digital leased line encompasses:
- (a) A leased line for Internet access that is established between the user and applications service provider; or
 - (b) A dedicated connection between the two end offices/premises of the user; or
 - (c) A dedicated connection between the two end offices/premises of service providers.
26. The term “leased line” here applies to local leased lines, national long distance leased lines and international long distance leased lines.
27. Local leased lines means lines, which are connected through/within:
- (a) The same switching center area;
 - (b) Switching centers in the same charge area; or
 - (c) Switching centers which are in an adjacent charge area
28. National leased line means two leased lines connected through switching centers, which are not within the same charge district, and not in the charge districts, which are adjacent to each other.
29. International leased lines means leased lines connected through switching centers in Malaysia with any other switching centers outside Malaysia.

Standard¹

30. Local leased line users must be able to stay connected to the Internet and /or another office where a dedicated network path exists, for more than 99% of the time;
31. National leased line users must be able to stay connected to the Internet and/or another office where a dedicated network path exists, for more than 99.9 % of the time and
32. International long distance leased line users must be able to stay connected to the Internet and/or another office where a dedicated network path exists, for more than 99.99 % of the time.

Measurement

33. The measurement of the standard shall be by data collected and submitted by the Network Service Provider (NSP). The data is to be checked and reported by the NSP for the period ending 30/6 and 31/12.
34. Network availability is described by the ratio:

$$\frac{(\text{Total operational hours over a 12 month period} - \text{Total downtime over the 12 month period}) \times 100\%}{\text{Total operational hours over the 12-month period}}$$

Reporting

35. Complete and accurate records of the digital leased line service availability shall be maintained by the NSPs. Such reports shall be in the form and format as may be prescribed by the Commission from time to time. Each report shall be accompanied by a declaration signed by an officer of the service provider duly authorized by the board of directors, stating that the report is true and accurate. These reports shall be submitted to the Commission not later than six weeks after 30 June for reporting period January to June, and 31 December for reporting period July to December respectively.

¹ The recommended standards are consistent with international best practices. The standard for international leased lines are higher compared to the standards for local leased lines due to the fact that the former is often used for high-impact economic and social activities and is crucial in ensuring Malaysia's continuous, uninterrupted linkage to the world.

STANDARDS ON FULFILMENT OF INSTALLATION ORDERS

Definition

36. Fulfilment of installation orders means the time taken from the signing of the agreement for services on-line or at the NSP's business outlet to the time when the service is provided.

Standard

37. 90 % of all installation orders shall be fulfilled in the following time frames:
- (a) 1 week for local leased line services
 - (b) 2 weeks for national long distance leased lines; and
 - (c) 4 weeks for international leased lines
38. Notwithstanding the above 100% of installation orders shall be fulfilled within
- (a) 2 weeks for local leased line services;
 - (b) 3 weeks for national long distance leased line services; and
 - (c) 5 weeks for international leased line services.

Measurement

39. The measurement is described by the ratio:

$$\frac{\text{Total number of installation orders met within a 12 month period} \times 100}{\text{Total number of installation orders for the 12 month period}}$$

40. When measuring the time taken to fulfill installation orders, installation orders not fulfilled within the requisite time due to the following reasons, may be excluded from the total number of installation orders for the 12 month period:
- (a) Wrong address given by the customer;
 - (b) Damage to network facility due to force majeure;
 - (c) Damage to network facility by third parties;

- (d) Customer premises inaccessible;
- (e) Customer premises internal wiring not ready at the committed or agreed time;
- (f) Customer cancels or defers agreed appointment; or
- (g) Network facility not available.

Reporting

41. Complete and accurate records of installation orders shall be maintained by the NSPs. Such reports shall be in the form and format as may be prescribed by the Commission from time to time. Each report shall be accompanied by a declaration signed by an officer of the service provider duly authorised by the board of directors, stating that the report is true and accurate. These reports shall be submitted to the Commission not later than six weeks after 30 June for reporting period January to June, and 31 December for reporting period July to December respectively.

STANDARD ON SERVICE RESTORATION PERFORMANCE

Definition

42. Service restoration performance means the time taken to restore a service from the time the fault was reported by the customer to the time of restoration. The restoration time is calculated from the time of report to the time of restoration, including weekends and public holidays.

Standard

43. Service restoration shall be effected within the following time frames:
- (a) 80% of all service restoration requests shall be fulfilled within 24 hours of receipt of request; and
 - (b) 90% of all service restoration requests shall be fulfilled within 48 hours of receipt of request.

Measurement

44. The measurement is described by the ratio:

$$\frac{\text{Total number of service requests fulfilled within the time frame} \times 100}{\text{Total number of service requests received over a 12-month period}}$$

45. When measuring the time taken to restore service, service not restored within the requisite time due to the following reasons, may be excluded from the total number of service restoration requests received over the 12 month period:

- (a) Faulty customer equipment;
- (b) Network facility damage due to third parties;
- (c) Fault due to other service providers;
- (d) Customer premises inaccessible;
- (e) Damage to network facility due to force majeure;
- (f) Faulty customer infrastructure or internal wiring; and
- (g) Deferment of service restoration request by customers.

Reporting

46. Complete and accurate records of all service restoration requests shall be maintained by the NSPs. Such reports shall be in the form and format as may be prescribed by the Commission from time to time. Each report shall be accompanied by a declaration signed by an officer of the service provider duly authorized by the board of directors, stating that the report is true and accurate. These reports shall be submitted to the Commission not later than six weeks after 30 June for reporting period January to June, and 31 December for reporting period July to December respectively.

STANDARDS ON BROADBAND ACCESS SERVICES

47. This section applies to all Network Service Providers providing broadband access. Broadband access services may be defined as always-on services that have a downstream capacity in excess of 256 Kbps. This definition of broadband excludes PSTN dial up connections and ISDN connections.
48. This standard shall apply to fixed (wired) broadband access services only. The proposed quality framework is as follows:

STANDARDS ON FULFILMENT OF INSTALLATION ORDERS

Definition

49. Fulfilment of installation orders means the time taken from the signing of the agreement for services on-line or at the NSP's business outlet to the time when the service is provided.

Standard

50. Installation orders shall be fulfilled in the following time frames:
- (a) 80% of all installation orders shall be fulfilled within 24 hours of receipt of the order; and
 - (b) 90% of all installation orders shall be fulfilled within 48 hours of receipt of the order.
51. Notwithstanding the above 100% of installation orders shall be fulfilled within 7 business days.

Measurement

52. The measurement is described by the ratio:

$$\frac{\text{Total number of installation orders met within a 12 month period} \times 100}{\text{Total number of installation orders for the 12 month period}}$$

53. When measuring the time taken to fulfill installation orders, installation orders not fulfilled within the requisite time due to the following reasons, may be excluded from the total number of installation orders for the 12 month period:
- (a) Wrong address given by the customer;
 - (b) Damage to network facility due to force majeure;
 - (c) Damage to network facility by third parties;
 - (d) Customer premises inaccessible;
 - (e) Customer premises internal wiring not ready at the committed or agreed time;
 - (f) Customer cancels or defers agreed appointment; or
 - (g) Network facility not available.

Reporting

54. Complete and accurate records of installation orders shall be maintained by the NSPs. Such reports shall be in the form and format as may be prescribed by the Commission from time to time. Each report shall be accompanied by a declaration signed by an officer of the service provider duly authorised by the board of directors, stating that the report is true and accurate. These reports shall be submitted to the Commission not later than six weeks after 30 June for reporting period January to June, and 31 December for reporting period July to December respectively.

STANDARD ON SERVICE RESTORATION PERFORMANCE

Definition

55. Service restoration performance means the time taken to restore a service from the time the fault was reported by the customer to the time of restoration. The restoration time is calculated from the time of report to the time of restoration, including weekends and public holidays.

Standard

56. Service restoration shall be effected within the following time frames:

- (a) 80% of all service restoration requests shall be fulfilled within 24 hours of receipt of request; and
- (b) 90% of all service restoration requests shall be fulfilled within 48 hours of receipt of request.

Measurement

57. The measurement is described by the ratio:

$$\frac{\text{Total number of service requests fulfilled within the time frame} \times 100}{\text{Total number of service requests received over a 12-month period}}$$

58. When measuring the time taken to restore service, service not restored within the requisite time due to the following reasons, may be excluded from the total number of service restoration requests received over the 12 month period:

- (a) Faulty customer equipment;
- (b) Network facility damage due to third parties;
- (c) Fault due to other service providers;
- (d) Customer premises inaccessible;
- (e) Damage to network facility due to force majeure;
- (f) Faulty customer infrastructure or internal wiring; and
- (g) Deferment of service restoration request by customers.

Reporting

59. Complete and accurate records of all service restoration requests shall be maintained by the NSPs. Such reports shall be in the form and format as may be prescribed by the Commission from time to time. Each report shall be accompanied by a declaration signed by an officer of the service provider duly authorized by the board of directors, stating that the report is true and accurate. These reports shall be submitted to the Commission not later than six weeks after 30 June for reporting period January to June, and 31 December for reporting period July to December respectively.

STANDARDS ON NETWORK PERFORMANCE

60. Network Performance covers the following parameters:

Definitions

61. **Network latency or ping time** means the round trip delay for traffic within the local broadband network from the end-user to the nearest serving Internet Access Service Provider (IASP) node, based on a standard packet size (36-bit packet).
62. **Throughput or bandwidth utilization** means the amount of data moved to and from the end-user to the nearest serving IASP node successfully in a given time period.
63. **Packet loss** means the percentage of packets lost from the end-user to the nearest serving Internet Access Service Provider (IASP).
64. Annual network service availability **means the total operational hours of the service, less the total transmission downtime or disruption to the service due to service failure over the period of 12 months.**
65. Downtime for the purposes of upgrading or maintaining the network system will be excluded from this ratio, provided users are informed in advance of such maintenance action.

Standards

66. **Network latency:** The proposed standard for network latency from the broadband user to all connections within the local broadband network shall be no more than 85ms, 95% of the time during busy hours.
67. **Throughput or bandwidth utilization:** The proposed standard for throughput between the user and the nearest serving local IASP node shall

be no less than 70% of the subscribed level for 95% of the time during busy hours; both for the purposes of uploading and downloading.

68. **Packet loss:** The packet loss shall not exceed 1%. Packet loss is measured by averaging sample measurements over the reporting period.
69. **Annual network service availability:** The must be 99.99% for all users. Network availability is described by the ratio:

$$\frac{(\text{Total operational hours over a 12 month period} - \text{Total downtime over the 12 month period}) \times 100\%}{\text{Total operational hours over the 12-month period}}$$

Measurement

70. The Network Service Provider shall be required to install a test server to monitor, record and report the above parameters. The standard end user equipment configuration is a personal computer with the equivalent of at least a 1GHz Pentium IV with 256Mb memory running only a standard browser application. The test server shall be placed at the node or anywhere on the core network of the NSP. Sampling tests may be initiated either by the end user from any point in the network or by the service provider. A minimum sample size for any of the tests shall be at least 30 samples per user. A minimum of 10 user locations per node shall be tested for this purpose. The test results accumulated by the test server shall be reported.

Reporting

71. Complete and accurate records of all the above shall be maintained by the NSPs. Such reports shall be in the form and format as may be prescribed by the Commission from time to time. Each report shall be accompanied by a declaration signed by an officer of the service provider duly authorized by the board of directors, stating that the report is true and accurate. These reports shall be submitted to the Commission not later than six weeks after 30 June for reporting period January to June, and 31 December for reporting period July to December respectively.

SECTION 3:

METHODOLOGIES USED TO ANALYSE INPUT FROM PUBLIC INQUIRY

National policy objectives

72. The Commission believes that national policy objectives should act as a background against which all comments/information given should be evaluated. In particular the Commission feels that the mandatory quality of service obligations are in tandem with the aim to establish Malaysia as a global centre and hub for communications and multimedia information; and content services. It will equally be pertinent to our intent to achieve a high level of consumer confidence in the industry.
73. The objectives that are particularly relevant to this initiative in S 3(2) of the CMA are:
- (a) To establish Malaysia as a major global centre and hub for communications and multimedia information and content services;*
 - (d) To regulate for the long term benefit of the end user; and*
 - (e) To promote a high level of user confidence in service delivery from the industry*
74. The macro objectives of this policy aim at creating an educated and information-rich society through a modern and sophisticated communications network. The objectives of the above include the provision of modern sophisticated and quality communications services at a reasonable cost. A mandatory quality of service standard would encourage the growth of value added services to facilitate long-term industry development.
75. The Commission further believes that this further encourages competitiveness in a healthy and orderly manner; as such an approach would result in efficiency and excellent service quality levels. This is expected to strengthen and develop further basic communications services, value added communications services and a superhighway network

infrastructure in an effort to use technology to support national development and national aspirations as we usher in a new technology based century.

Relevance of comments vis-à-vis the selection criteria utilized

76. Comments received were also evaluated vis-à-vis the selection criteria utilized by the Commission in choosing the services for which the quality of service is to be mandated. The selection criteria used is based on the applicability of one or more of the following factors:

(a) Services, which are critical to support downstream activities in an economy that is knowledge-based;

(b) The necessity for quality of service benchmarks will act as instruments that can effectively arrest service degradation and congestion. The benchmarks are meant to indicate what is the minimum service level acceptable to the consumer and thus set the stage for industry to excel through quality;

(c) Services that have the potential to develop Malaysia as a global communications hub; and

(d) The introduction of mandatory standards, which are not premature due to the evolution of technology that may facilitate the introduction of new services.

77. Objective, measurable and auditable standards are vital to ascertain whether the minimum quality of service is being offered. The approaches to be undertaken in this respect include test sampling; observed measurements and recourse to section 268 of the CMA 1998 to facilitate record keeping and auditing where appropriate. International standards and best practices have been considered carefully in the course of this exercise, in an effort to ensure that Malaysia evolves into a competitive and dynamic global communications hub.

SECTION 4: FINDINGS

78. The following section deals with the input/ comments received from the public. Inputs were evaluated using the methodology as described above (Section 3). The main concerns raised from the various submissions received were as follows:

Area of comment	Comments	Response
Public payphone service availability	The proposed target of service availability should be 70%. The high cost of maintenance, vandalism and wide area of coverage have been cited as constraints in ensuring that public payphone service availability remains at 90%.	This suggestion is not acceptable and undermines consumers' interest. Public payphones offer consumers a less costly alternative, play an important role as back up communications, and act as an essential means by which emergency services can be accessed. A survey of international standards and best practices warrant that we mandate at least a 90% public payphone service availability rate. British Telecom is able to make certain that well above 90% of its public payphones are working at any one time. Telstra, in Australia is able to achieve a 98% payphone availability. ²

² See www.aca.gov.au for details. Payphone availability means the number of payphones available to make successful calls either via the use of coins or cards, and for the purposes of making calls to operators and accessing emergency services.

		<p>This service can only be unregulated in two circumstances in the opinion of the Commission, namely if there is more than sufficient competition in this market, or if service providers are able to show that they can meet/exceed this benchmark.</p>
Digital Leased Line Service Availability	<p>Should cover digital leased lines from 64 Kbps upwards and not start at 128 Kbps as there are many 64Kbps users.</p>	<p>This suggestion has been adopted into our proposed quality parameter. This will ensure that consumers across the board are protected. The Commission has already put in place a Determination to ensure appropriate levels in the quality of service for Internet Dial-Up customers in 2002.</p>
Digital Leased Line Service Availability	<p>The use of “switching centers” to define local, national and international leased lines should be replaced with “geographical distances” instead.</p>	<p>The definitions adopted by the Commission using switching centres as a reference point is fairly standard and clear. It is in tandem with how the Commission designates the charging areas for the PSTN service.</p>

	<p>The measurement of the different leased line types should be done on a separate basis. Local leased lines, which consist of Customer Access Networks, and Customer Premise Equipment is more vulnerable to faults thus justifying the lowest level of service availability amongst all three types of lines.</p>	<p>The service quality is always measured end to end as opposed to a sectional or segmented basis. National and international lines are important applications and hence are priced accordingly.</p>
<p>Digital Leased Line Service Availability</p>	<p>Mandating service availability at 99.99% for the International long distance leased line is costly and not necessarily required by customers. Foreign carriers seldom guarantee the quality of the foreign portion of International long distance leased lines and reject requests for service level agreements.</p>	<p>The parameter of availability is a crucial quality parameter from the perspective of consumers. The International portion is used for mission critical applications and hence there is a need to specify the benchmark. The Commission cannot accept that there are technical or commercial limitations in this respect, as the standards proposed are in line with international best practices.</p> <p>Most international carriers provide service guarantees in the form of service level agreements with rebate clauses. The international part of a line is always provided, based</p>

		<p>on mutual agreements of any two carriers by way of a service level agreement. Hence arguments' stating a lack of control is not sustainable. Rebates should be mutually agreed upon between the customer and the service provider. However rebates should be enforceable as per the current standard.</p>
Standards on Network Performance (for Broadband Access Services)	Measurement area should be clearly identified	An explanatory diagram will be included in the "Determination" issued by the Commission for the purposes of clarity.
Broadband Access Services	Does this cover ISDN connections?	The definition of broadband as stipulated in the Public Inquiry Paper states that it is an always-on service that has a downstream capacity in excess of 256 Kbps. This definition of broadband excludes all Public Switched Telephone Network (PSTN) dial-up connections and ISDN connections.

SECTION 5:

THE DETERMINATION OF A MANDATORY QUALITY OF SERVICE STANDARD: THE WAY FORWARD

79. The Commission is of the view that the proposed mandatory standards can act as a first definitive step towards the formulation of a voluntary industry code that reflects self-regulation. Such a code will function as an operational guide for industry effectiveness with less intervention from the Commission.
80. In the ultimatum, the intent must always be to identify with the concerns of users with respect to a wide variety of services, and to formulate meaningful definitions of acceptable quality.
81. A user of a service of poor quality is in the Commission's view more concerned with issues such as:
- (a) The correction of the problem or interference in a timely manner, or
 - (b) An assurance from the service provider that the best efforts are being applied to deal with the problem, or
 - (c) Assurances that the problem will not recur
82. The Commission has therefore deemed it fit pursuant to a Ministerial Direction on Quality Service, Direction No.3 of 2003 under S7 and 104(3) of the CMA to determine mandatory standards on the quality of service for services identified in Section 1 of this report. A mandatory code that invokes monetary penalties and imprisonment or both is a necessary step to ensure this issue is prioritized, obligations are recognized and fulfilled; and users are assured of easily accessible and high quality services with transparent, consistent and reliable procedures to monitor, respond and resolve problems.
83. These standards should come into force from 1 January 2004 with the exception of the quality of service mandatory standard for public payphone application services, which is expected to be in force from 1 June 2004 to facilitate operators to take preparatory measures, to ensure that they are ready and able to comply with these standards.