



**COMMUNICATIONS AND MULTIMEDIA ACT 1998**  
**COMMISSION DETERMINATION ON THE MANDATORY STANDARDS FOR**  
**QUALITY OF SERVICE (BROADBAND ACCESS SERVICE)**  
**DETERMINATION No. 1 of 2007**

Pursuant to the Ministerial Direction on Quality of Service, Phase Two, Direction No. 3 of 2003, and in exercise of the powers conferred by sections 55, 56, 104(2) and 106 of the Communications and Multimedia Act 1998 [Act 588], the Commission hereby determines as follows:

**Citation and commencement**

1. This Determination may be cited as the **Commission Determination on the Mandatory Standards for Quality of Service (Broadband Access Service), Determination No. 1 of 2007**.
2. This Determination shall come into operation on 1 January 2008.

**Interpretation**

3. For the purpose of this Determination, unless the context otherwise requires,:

“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. Downtime for the purposes of upgrading or maintaining the network system shall be excluded from the calculation of the annual network service availability provided that users shall have been informed in advance of any such upgrading or maintenance action;

“ASP” means Applications Service Provider;

“broadband access service” means an always-on bandwidth service that has minimum downstream capacity of 256 Kbps;

“business day” means a day other than the weekly rest day, the day before the weekly rest day and a public holiday;

“customer” means a person who, for consideration, acquires or subscribes to the broadband access service;

“IASP” means Internet Access Service Provider;

“network latency or ping time” means the round trip delay for traffic within the local broadband network from the end-user to the nearest edge node of the

regional broadband network or Broadband Remote Access Server (BRAS), based on a standard packet size of 32 bytes packet;

“NSP” means Network Service Provider;

“packet loss” means the percentage of packets lost between end user and the nearest edge node of the regional broadband network or BRAS; and

“throughput or bandwidth utilisation” means the amount of data moved to and from the end-user to the nearest edge node of the regional broadband network or BRAS.

4. Any term used in this Determination shall, unless the context otherwise requires, have the same meaning as in the Act or the regulations made under it.

5. Unless the context otherwise requires, words in the singular include the plural and vice versa.

#### **Licensees subject to these mandatory standards**

6. NSPs and ASPs providing wired broadband access service shall be subject to these mandatory standards. NSPs and ASPs are advised to ensure that other facilities and service providers who can affect the quality of service provided by NSPs and ASPs are bound by service level agreements which enable NSPs and ASPs to meet these standards.

#### **Standards on Fulfillment of Installation Orders**

7. Fulfillment of installation orders means the duration taken from time and date requested and agreed by customer for services either on-line or at the ASP's or NSP's business outlet to the time when the service is provided.

8. Installation orders shall be fulfilled in the following time frames:

- (a) 80% of all installation orders shall be fulfilled within 24 hours from time and date requested by customer;
- (b) 90% of all installation orders shall be fulfilled within 48 hours from time and date requested by customer; and
- (c) 100% of installation orders shall be fulfilled within 7 business days from time and date requested by customer.

9. Cancellation or deferment of agreed date of service installation shall be reflected with proof of the same through, but not limited to any of the following means:

- (a) a form signed by customer;
- (b) verbal proof of telephone conversation with proper verification; or
- (c) text sent through the short messaging service (SMS) to official SMS center for cancellation or deferment.

10. The measurement of the standard is described by the ratio:

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

11. 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; or
- (f) network facility not available.

12. Complete and accurate records of installation orders shall be maintained by the relevant NSPs and 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 NSP and ASP 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.

### **Standards on Service Restoration Performance**

13. 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. In the case of a service restoration for which the customer has requested for specific time and date, restoration time is calculated from the specified time and date to the time of restoration.

14. 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;
- (b) 90% of all service restoration requests shall be fulfilled within 48 hours of receipt of request; and
- (c) 100% of all service restoration requests shall be fulfilled within 7 days of receipt of request.

15. The measurement of the standard is described by the ratio:

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

16. 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) genuine deferment of service restoration request by customers.

For the purposes of paragraph 16(g), genuine deferment of service restoration request by customers shall be proved by:

- (i) a signed form;
- (ii) verbal proof of telephone conversation with customer; or
- (iii) text sent through SMS to official SMS center for deferment.

17. Complete and accurate records of all service restoration requests shall be maintained by the relevant NSPs and 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 NSP and ASP 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 Billing Performance**

18. Billing performance means the integrity and reliability of the billing system as shown in billing accuracy and timeliness in resolving billing disputes, which shall be reflected in the number of billing complaints. Billing complaints include payments made and wrongly credited or not credited, double charges, non-refund of deposits, late bills, non-receipt of bills, fraud, wrongly addressed bills and other billing errors.

19. The percentage of billing complaints in any one billing period shall not exceed 2% of the total number of bills issued during the billing period. For this purpose all billing complaints on one bill shall be taken as one complaint.

20. Billing complaints shall be resolved within the following time frames:

- (a) 90% of billing complaints shall be resolved within 15 business days of receipt of the complaint; and
- (b) 95% of billing complaints shall be resolved within 30 business days of receipt of the complaint.

21. The measurement is described by the ratio:

$$\frac{\text{Total number of billing complaints for the billing period} \times 100}{\text{Total number of bills issued over a billing period}}$$

22. Complete and accurate records of billing complaints shall be maintained by the relevant NSPs and 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 NSP and ASP 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 General Customer Complaint Handling**

23. General customer complaint means any complaint received on service matters including late or no service restoration after a report has been made, unprofessional staff or contractors and other complaints related to customer services.

24. The number of customer complaints shall not exceed 50 complaints per 1000 customers in a 12 month period.

25. The measurement is described by the ratio:

$$\frac{\text{Total number of complaints received over a 12 month period} \times 1000}{\text{Customer base at the end of the reporting period}}$$

26. Complete and accurate records of customer complaints shall be maintained by the relevant NSPs and 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 NSP and ASP 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**

27. The standard for Network Performance shall be measured based on the following criteria:

- (a) **Network latency** - Network latency from the broadband user to the nearest edge node of the regional broadband network or BRAS shall be no more than 85ms, 95% of the time;
- (b) **Throughput or bandwidth utilisation** - Throughput or bandwidth utilisation between the user and the nearest edge node of the regional broadband network or BRAS shall be:
  - (i) no less than 80% of the subscribed level for 95% of the time for the purposes of uploading and downloading effective from 1 January 2008; and
  - (ii) no less than 90% of the subscribed level for 95% of the time for the purposes of uploading and downloading effective from 1 January 2009;
- (c) **Packet loss** - Packet loss shall not exceed 1% between the user and the nearest edge node of the regional broadband network or BRAS. Packet loss is measured by averaging sample measurements; and

- (d) **Annual network service availability** - Annual network service availability shall be 99.9% for all users and the measurement of the standard is described by the ratio:

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

28. All measurements for network performance standards shall be conducted at Layer 3 (Network Link Layer).

29. The NSPs and ASPs shall install a test server to monitor record and report on the criteria as stated in paragraphs 27(a) to (d) above. The standard end user equipment configuration is a personal computer with the equivalent of at least a 1GHz Pentium IV processor with 256Mb memory. The test server shall be placed at the edge node of the regional broadband network or BRAS. Sampling tests may be initiated either by the end user or by the NSPs and ASPs. A minimum sample size for any of the tests shall be at least 100 samples per user. At least 1 user location per BRAS or the edge node of the regional broadband network shall be tested for this purpose. Prior approval shall be obtained from the Commission for the test location. Test results accumulated by the test server shall be reported to the Commission.

30. Complete and accurate records of the Network Performance shall be maintained by the relevant NSPs and 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 NSP and ASP 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.

#### **Audit and verification**

31. The Commission may from time to time conduct an audit on the report(s) submitted, perform test call sampling and/or service observation to verify compliance with these mandatory standards.

#### **Revocation and Transitional**

32. With the coming into force of this Determination, the Commission Determination on the Mandatory Standards for Quality of Service (Broadband Access Service), Determination No.5 of 2003 shall be revoked. For avoidance of doubt, all actions taken and decisions made under the revoked Determination shall continue to be valid and effective until revoked.

Made 6 July 2007

  
**DATUK DR. HALIM SHAFIE**

*Chairman*  
*Malaysian Communications and Multimedia*  
*Commission*