

**COMMUNICATIONS AND MULTIMEDIA ACT 1998**  
**COMMISSION DETERMINATION ON THE MANDATORY STANDARDS FOR**  
**QUALITY OF SERVICE**  
**(BROADBAND ACCESS SERVICE)**  
**DETERMINATION No. 5 of 2003**

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 and 104(2) 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. 5 of 2003.**
2. This Determination shall come into operation on 1 January 2004.

**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;

“broadband access service” means an always-on bandwidth service that has a downstream capacity in excess 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;

“busy hour” means any hour in a busy period;

“busy period” means the period between 9 a.m. to 12 p.m. and 2 p.m. to 5 p.m. on a business day;

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

“IASP” means Internet Access Service Provider;

“network latency” means the round trip delay for traffic within the local broadband network from the end-user to the nearest serving IASP node, based on a standard packet size 36 bit packet and is also known as “ping time”;

“NSP” means Network Service Provider;

“packet loss” means the percentage of packets lost between two designated routers within the local IASP nodes;

“PSTN” means public switched telephone network which is an applications service involving a public circuit switched voice grade interface for delivery of voice and data communications; and

“throughput or bandwidth utilisation” means the amount of data moved to and from the end-user to the nearest serving IASP node successfully in a given time period;

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.

#### **Licencees subject to these mandatory standards**

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

#### **Standards on fulfilment of installation orders**

7. Fulfillment 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.
8. 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;
  - (b) 90% of all installation orders shall be fulfilled within 48 hours of receipt of the order; and
  - (c) 100% of all installation orders shall be fulfilled within 7 business days.

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

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

10. When measuring the time taken to fulfil 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.
11. Complete and accurate records of installation orders shall be maintained by the relevant 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 NSP 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**

12. 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.
13. 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.
14. The measurement of the standard is described by the ratio:

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

15. 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) Deferral of service restoration request by customers.

16. Complete and accurate records of all service restoration requests shall be maintained by the relevant 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 NSP 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 Network Performance**

17. The standard for Network Performance shall be measured based on the following criterias :

- (a) **Network latency** - 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;
- (b) **Throughput or bandwidth utilisation** - Throughput or bandwidth utilisation 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;
- (c) **Packet loss** - Packet loss shall not exceed 1%. Packet loss is measured by averaging sample measurements over the reporting period; and
- (d) **Annual network service availability** - Annual network service availability must be 99.99% for all users and the measurement of the standard is described by the ratio:

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

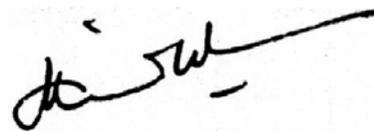
18. The NSP shall install a test server to monitor, record and report on the criterias as stated in paragraph 17(a)-(d) above. The standard end user equipment configuration is a personal computer with the equivalent of at least a 1GHz Pentium IV processor with 256Mb memory running only a standard browser 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 NSP. 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.

19. Complete and accurate records of the Network Performance shall be maintained by the relevant NSP. 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 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**

20. 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.

Made 14 November 2003



DATUK DR. SULAIMAN MAHBOB  
*Acting Chairman*  
*Malaysian Communications and Multimedia*  
*Commission*