

**Suruhanjaya Komunikasi dan Multimedia Malaysia**  
Malaysian Communications and Multimedia Commission

**COMMUNICATIONS AND MULTIMEDIA ACT 1998**

**COMMISSION DETERMINATION ON THE MANDATORY STANDARDS  
FOR QUALITY OF SERVICE (WIRED BROADBAND ACCESS SERVICE)**

**DETERMINATION NO. 2 OF 2016**

Pursuant to the Ministerial Direction on Quality of Service, Direction No. 3 of 2003, and in exercise of the powers conferred by sections 55, 56 and 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 (Wired Broadband Access Service), Determination No. 2 of 2016**.
2. This Determination shall come into operation on:
  - (i) 1 February 2016 for Standards for Network Performance Quality of Service; and
  - (ii) 1 July 2016 for Standards for Customer Service Quality of Service.

**Interpretation**

3. For the purpose of this Determination, unless the context otherwise requires,
  - (i) any terms used in this Determination shall have the same meaning as in the Act or the regulations made under it;
  - (ii) words in the singular include plural and vice versa; and
  - (iii) the following terms used in this Determination shall have the stated meaning:

“ASP” means Applications Service Provider;

“ATM” means Asynchronous Transfer Mode;

“business day” means a day in which commercial banks in the respective states in Malaysia are normally open for business, and excludes gazetted public holidays;

“uplink” means connectivity between access layer (not limited to DSLAM, MSAN or OLT) to aggregation layer (not limited to Metro-Ethernet or ATM switch);

“complaint” means any verbal or written expression of dissatisfaction by customer to service provider regarding the service provider’s service and product, which requires action by the service provider to address the issues raised. A request by customer for information or advice or an inquiry seeking clarification will not be classified as a complaint. However, if no or inadequate action was taken by the service provider upon a request for information or advice or inquiry seeking clarification, the subsequent follow up to the service provider would be classified as a complaint;

“CPE” means customer premises equipment;

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

“Digital Subscriber Line (DSL)” means a technology for bringing high bandwidth information over copper telephone lines;

“DSLAM” means Digital Subscriber Line Access Multiplexer;

“end user” means a person who receives, requires, acquires, uses or subscribes to the wired broadband service and may include a customer;

“fibre” means optical fibre cable used for broadband which is connected directly to customer premises equipment;

“guidelines” means guidelines issued by the Commission pursuant to this Determination;

“MSAN” means Multi-service Access Node;

“MyIX” means the Malaysia Internet Exchange;

“NSP” means Network Service Provider;

“OLT” means Optical Line Terminal;

“reporting period” means the calendar quarters ending 31 March, 30 June, 30 September and 31 December of each year;

“resolved” means that a complaint was addressed and the problem was rectified;

“service provider” means an Applications Service Provider or a Network Service Provider which provide wired broadband access service; and

“wired broadband access service” means a wired connectivity of communication bandwidth service that has a minimum downstream capacity of 650Kbps, with a minimum subscribed package of 1Mbps.

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

4. All NSPs and ASPs providing wired broadband access service are subject to these mandatory standards. NSPs and ASPs should ensure that other providers who can affect the quality of service provided by the NSPs and ASPs are bound by a service level agreement which enables the NSPs and ASPs to meet these standards.

#### **Obligation to maintain Quality of Service records**

5. The relevant NSPs and ASPs shall maintain complete and accurate performance records of all Quality of Service indicators stated in this mandatory standards.

#### **Quality of Service Performance Report Submission**

6. Quality of Service performance reports shall be submitted to the Commission no later than 30 days from the end of every quarterly reporting period. These 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 each report is true and accurate.

#### **Audit and verification**

7. The Commission may from time to time conduct audits:
  - (i) on any of the access network (not limited to DSLAM, MSAN, OLT, etc.) when and if necessary; and
  - (ii) on the reports submitted, perform test or make service observations to verify NSPs and ASPs' compliance with these mandatory standards.

#### **Applicable Guidelines**

8. The Commission may at any time issue guidelines that sets (but not limited to) the testing procedures, examples of computations, reporting templates, explanatory notes and list of designated routes and areas in respect of any provision in this Determination.

## Network Performance Quality of Service

	Quality of Service Indicator	Description / Definition / Formula / Measurement / Reporting Requirement	Quality of Service Standard
i.	Network Latency (ping time)	<p>This indicator measures the round-trip time taken by a standard packet size of 64 bytes to travel across the network from the end user to MyIX and back to the end user.</p> <p>Formula:</p> $\frac{\text{Number of test samples} \leq 85\text{ms}}{\text{Total number of test samples}} \times 100\%$	Network Latency must be not more than 85 ms, 95.0% of the time based on test sample.
ii.	Throughput (Broadband Speed)	<p>This indicator measures the speed of uploading and downloading data measured in units of megabits per second (Mbps) between the end user and MyIX. This is to be measured and reported separately for uploading and downloading.</p> <p>Formula:</p> $\frac{\text{Number of test samples} \geq \text{QoS Throughput Standard}}{\text{Total number of test samples}} \times 100\%$	<p>Throughput must be not less than</p> <p>(a) 70.0% of the subscribed level of broadband speed, for 90.0% of the time effective from 1 February 2016 for DSL; and</p> <p>(b) 90.0% of the subscribed level for 90.0% of the time effective from 1 February 2016 for fibre.</p>
iii.	Packet Loss	<p>This indicator measures the percentage of data packets transmitted from the source that fails to arrive at their destinations. It is computed based on the average of sample measurements between the end user and MyIX.</p> <p>Formula:</p> $\frac{\text{Total Number of Packet Loss}}{\text{Total Number of Sent Packet}} \times 100\%$	Packet Loss must be not more than 1.0%, computed based on the average of the test sample.
iv.	Access Network Utilization	This indicator measures the total traffic between access node (not limited to DSLAM, MSAN, OLT, etc.) to aggregation node e.g. Metro-Ethernet.	Access network (not limited to DSLAM, MSAN, OLT, etc.) uplink traffic utilization must be not more than 70.0% of the uplink bandwidth provided in every calendar month.

v.	Network Service Availability	<p>Network Service Availability is the measure of the degree to which the broadband access network equipment is operable and not in a state of failure or outage at any point of time for all users.</p> <p>Formula:</p> $\frac{\text{Total operational minutes in a month for each of access network equipment} - \text{Total minutes of service downtime in a month for each of access network equipment}}{\text{Total operational minutes in a month for each of access network equipment}} \times 100\%$ <p>The total minutes of service downtime in a month referred to in the formula above measures the network's total downtime in a month for each of access network equipment including, but not limited to the switches, multiplexers, routers, servers, and connectivity to service providers. All Customer Premise Equipment are excluded.</p> <p>For the purpose of the formula above, all scheduled downtime (as described in this Determination) for the purposes of maintenance and upgrading of the network are to be excluded from the computation.</p>	<p>Network Service Availability of the access network must be not less than 95.0% every calendar month.</p> <p>Service provider must measure the Network Service Availability every month for each of access network equipment.</p> <p>These measurements shall be made available to the Commission for audit purposes if required.</p>
vi.	Advance Notice of Scheduled Downtime	<p>Service provider is required to inform customers and the Commission in advance in respect of any network service downtime planned and scheduled by the service provider for the purposes of maintenance and upgrading of the network.</p>	<p>Every session of scheduled downtime due to occur which affects customers must be notified to customers not less than 24 hours in advance.</p>
vii.	Service Disruption	<p>Service Disruption means the unplanned interruption of the services that a customer subscribes to but does not include disruption of service from scheduled downtime. A service provider is considered to have breached the Service Disruption standard where a single Service Disruption</p>	<p>Any single incident of Service Disruption must not be out of service for 3 hours or longer and affect 500 or more customers.</p>

		<p>incident affecting 500 or more customers and lasted for 3 hours or longer.</p> <p>A service provider is considered to have breached the Service Disruption standard where the service provider fails to rectify a single Service Disruption incident affecting 500 or more customers and lasted for 3 hours or longer.</p> <p>If more than one Service Disruption incident occurring in a quarterly reporting period breach this standard, each and every one of such incidents are regarded as separate breaches of this standard.</p> <p>Service provider shall notify customers within 90 minutes in respect of any Service Disruption incident.</p> <p>In the event of a single Service Disruption incident that affected 500 or more customers and lasted for 3 hours or longer, the service provider must submit a comprehensive report to the Commission within 7 business days of the incident.</p>	<p>Any single incident of Service Disruption that affects 500 or more customers and lasts for 3 hours or longer which occurs:</p> <p>(a) between 5AM to 12 midnight, must be rectified within 3 hours from the occurrence of the Service Disruption; and</p> <p>(b) between 12 midnight to 5AM, must be rectified no later than 6AM.</p> <p>The service provider must notify customers within 90 minutes of the occurrence of any single Service Disruption incident affecting 500 or more customers and lasts for 3 hours or longer.</p> <p>Service provider must submit a comprehensive report to the Commission within 7 business days of the occurrence of any single Service Disruption incident that affected 500 or more customers and lasted for 3 hours or longer.</p>
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### Customer Service Quality of Service

	Quality of Service Indicator	Description / Definition / Formula / Measurement / Reporting Requirement	Quality of Service Standard
i.	Service Activation Fulfilment	This indicator measures the duration from the time and date agreed by customer for the service to be activated, to the time when the service is activated, excluding non-business days.	<p>Not less than 95.0% of all Service Activation Fulfilment in a reporting period must be fulfilled within 24 hours from the agreed time and date; and</p> <p>100.0% of all Service Activation Fulfilment in a</p>

		<p>Formula:</p> $\frac{\text{Total number of service activations fulfilled within the specific timeframe}}{\text{Total number of service activation scheduled to be activated within the reporting period}} \times 100\%$ <p>For the purpose of this indicator, deferment or cancellation of agreed date and time of service activation shall be upon customer request. Evidence of customer's agreement should be retained.</p> <p>Service activations that fail to meet the standard due to the following reasons are excluded from the computation:</p> <ul style="list-style-type: none"> <li>(a) Damage to network facility due to force majeure or third parties;</li> <li>(b) Faulty Customer Premise Equipment (CPE), customer infrastructure or internal wiring; and</li> <li>(c) Customer premises inaccessible.</li> </ul> <p>When service activation cannot be fulfilled due to the above reasons, new service activation time and date must be set and agreed between service provider and customer.</p>	<p>reporting period must be fulfilled within 72 hours from the agreed time and date.</p>
ii.	Service Restoration Fulfilment	<p>This indicator measures the duration from the time and date a service fault is reported, to the time of service restoration, including non-business days. Where customer has requested for specific time and date of service restoration, restoration time is calculated from the specified time and date including non-business days.</p>	<p>Not less than 95.0% of all Service Restorations Fulfillment in a reporting period must be fulfilled within 24 hours; and</p> <p>100.0% of all Service Restorations Fulfillment in a reporting period must be fulfilled within 48 hours.</p>

		<p>Formula:</p> $\frac{\text{Total number of service restorations fulfilled within the specific timeframe}}{\text{Total number of service fault reports received within the reporting period}} \times 100\%$ <p>For the purpose of this indicator, deferment or cancellation of agreed date and time of service restoration shall be upon customer request. Evidence of customer's agreement should be retained.</p> <p>Service restorations that fail to meet the standard due to the following reasons are excluded from the computation:</p> <ul style="list-style-type: none"> <li>(a) Damage to network facility due to force majeure or third parties;</li> <li>(b) Faulty Customer Premise Equipment (CPE), customer infrastructure or internal wiring; and</li> <li>(c) Customer premises inaccessible.</li> </ul> <p>When service restoration cannot be fulfilled due to the above reasons, new service restoration time and date must be set and agreed between service provider and customer.</p>	
iii.	Percentage of Billing Related Complaints	<p>This indicator measures the percentage of billing related complaints to the number of customers per reporting period.</p> <p>Billing related complaint is any complaint related to the service provider's billing made or charges imposed on customers including, but not is limited to, complaints regarding payments made and wrongly credited or not credited, non-refund of deposits, late billing, non-receipt of bills, fraud, wrongly addressed bills and other billing errors. Bills issued by service provider may include, but are not</p>	Percentage of billing related complaints must be not more than 1.0% per quarterly reporting period.



		<p>limited to, bills sent by postal service, email or accessible online by customer. Billings of pre-paid and post-paid services are included for this indicator.</p> <p>Formula:</p> $\frac{\text{Total number of billing related complaints received at the end of the reporting period}}{\text{Total number of active customers at the end of the reporting period}} \times 100\%$	
iv.	Non-billing Related Complaints per 1,000 Customers	<p>This indicator measures the percentage of Non-billing Related Complaints per 1,000 Customers per reporting period.</p> <p>Non-billing related complaint means any complaint other than billing related complaint. It includes, but is not limited to, complaints received on service matters including late or no service activation after a report has been made, unprofessional staff or contractors and other complaints related to customer service.</p> <p>Formula:</p> $\frac{\text{Total number of non – billing related complaints received in the reporting period}}{\text{Total number of active customers at the end of the reporting period}} \times 1000$	Non-billing related complaints must be not more than 6 complaints per 1,000 customers per quarterly reporting period.

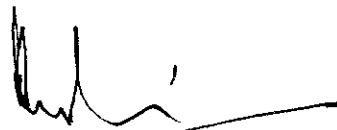
v.	Promptness in Resolving Customer Complaints	<p>This indicator measures the percentage of customer complaints resolved by the service provider within specified timeframes, measured from the day the complaint was received to the time the complaint was resolved.</p> <p>Formula:</p> $\frac{\text{Total number complaints resolved within the specific timeframe}}{\text{Total number of complaints received within the reporting period}} \times 100\%$ <p>This Quality of Service indicator is to be separately measured and reported for billing related complaints and non-billing related complaints, where the same MSQoS is applicable for both categories of complaints.</p> <p>Unresolved complaints due to the following are excluded from the computation:</p> <ul style="list-style-type: none"> <li>(a) Damage to network facility due to force majeure or third parties;</li> <li>(b) Faulty Customer Premise Equipment (CPE), customer infrastructure or internal wiring; and</li> <li>(c) Customer premises inaccessible.</li> </ul> <p>The Commission shall determine whether the service provider has taken steps to address the complaint and whether it is reasonable to conclude that such steps have addressed the dissatisfaction of the complainant.</p> <p>Service provider is required to inform customers of their right to refer any unresolved complaint to the Consumer Forum of Malaysia (CFM).</p>	<p>The standard on promptness in resolving customer complaints, separately measured for billing related complaints and non-billing related complaints, for every quarterly reporting period is:</p> <ul style="list-style-type: none"> <li>(a) Not less than 60.0% must be resolved within 3 business days;</li> <li>(b) Not less than 90.0% must be resolved within 5 business days; and</li> <li>(c) Not less than 95.0% must be resolved within 15 business days.</li> </ul>
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vi.	Promptness in Answering Calls to Customer Hotline	<p>This indicator measures the service provider's promptness in answering customer phone calls to the Customer Hotline, from the time when the customer presses the button opting for a human operator to the time it is answered by a human operator. The duration when the call is attended to by the interactive voice response system (IVRS) before being transferred to a human operator's phone is excluded.</p> <p>Formula:</p> $\frac{\text{Number of calls answered by human operator within the specific timeframe}}{\text{Total number of calls to Customer Hotline opting for human operator assistance in the reporting period}} \times 100\%$	<p>At least 80.0% of calls to Customer Hotline that opted for human operator in a quarterly reporting period must be answered within 20 seconds; and</p> <p>At least 90.0% of calls to Customer Hotline that opted for human operator in a quarterly reporting period must be answered within 40 seconds.</p>
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#### Revocation and transitional

9. With the coming into force of this Determination, the Commission Determination on the Mandatory Standards for Quality of Service (Broadband Access Service), Determination No 1 of 2007 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 on 27 January 2016



**DATO' SRI DR HALIM SHAFIE**  
Chairman

*Malaysian Communications and Multimedia Commission*