



Suruhanjaya Komunikasi dan Multimedia Malaysia

Malaysian Communications and Multimedia Commission

**GUIDELINES TO THE COMMISSION DETERMINATION ON THE
MANDATORY STANDARDS FOR QUALITY OF SERVICE
(PUBLIC CELLULAR SERVICE),
DETERMINATION NO. 3 OF 2021**

(SKMM(T)06-SEIR/140.003/Jld.2 (38))

July 2021

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GLOSSARY

GPS	Global Positioning System
LTE	Long Term Evolution
OTT	Over The Top
QoS	Quality of Service
UE	User Equipment
VoIP	Voice over Internet Protocol
VoLTE	Voice over LTE
VoNR	Voice over New Radio
WGS	World Geodetic System

PART A: OBJECTIVE AND SCOPE

1. These guidelines are developed by the Malaysian Communications and Multimedia Commission (the "Commission") pursuant to paragraph '8' of the Commission Determination on the Mandatory Standards for Quality of Service (Public Cellular Service), Determination No. 3 of 2021 ("Mandatory Standards").
2. These guidelines set out the testing procedures, including test parameter and methodology, reporting templates and explanatory notes for the purpose of network QoS assessment.
3. These guidelines are applicable to public cellular access service. All calls including Circuit Switch calls, VoLTE and VoNR shall be considered as voice calls. VoIP calls made over OTT applications are not to be included under Public Cellular Service.

PART B: NETWORK PERFORMANCE QUALITY OF SERVICE

Measurement Methodology

4. The test shall be by way of a drive test, static test, or walk test. The Commission shall, at its sole discretion, decide on which test should be conducted.
5. These tests shall be carried out by the public cellular service providers or service providers' appointed consultant. The measurement report shall be provided to the Commission in accordance with these guidelines.
6. The test shall produce relevant data as required in the network QoS reporting template in Part C of this guideline.
7. The Commission at its discretion may also perform tests on service providers where necessary.
8. All tests must be performed during workdays unless allowed by the Commission.

Routes or Locations Identification

9. Measurement may be conducted at least twice a year for all regions in Malaysia. Same measurement routes shall not be repeated within the same reporting period.
10. The regions shall be categorized as below:

Northern: Perak, Pulau Pinang, Kedah and Perlis.
Central: Selangor, Negeri Sembilan, Wilayah Persekutuan Putrajaya and Kuala Lumpur.
Southern: Johor and Melaka.
Eastern: Pahang, Kelantan, and Terengganu.
Sabah: Sabah and Wilayah Persekutuan Labuan.
Sarawak: Sarawak.
11. Service provider or the Commission may list out the identified test routes or locations prior to the assessment exercise.
12. The tests are to be carried out along federal roads, state roads and highways, or at locations that have been ascertained to have cellular coverage.
13. Cellular coverage shall be ascertained in the following manner:
 - i. Through the coverage information advertised by the public cellular service providers; or
 - ii. Through the network indicator display on test phones; or
 - iii. Where complaints from consumers on individual services by a particular service provider (within service provider's advertised coverage area) are lodged to the Commission.

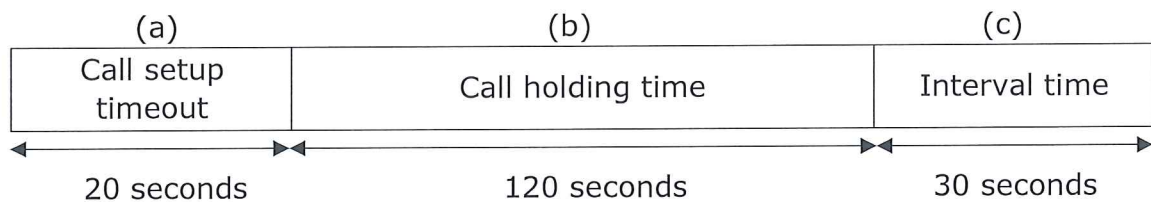
Testing Equipment

14. UE supporting frequency bands in Malaysia are to be installed with QoS monitoring software for cellular based systems measurement and testing.
15. The software/measurement tools used for the tests shall comply with the relevant recommendations from European Telecommunications Standards Institute (ETSI)'s standards or equivalent.

16. The measurement logs produced by the tools must be compatible with the Commission's requirement for the purpose of the Commission's verification and analysis procedure.

Testing Procedures

17. The test call number shall be a switch terminating number (for inter-network and intra-network testing) i.e. the test shall only measure the call setup success rate and dropped call rates of the mobile originated call network.
18. The tests would be based on the following parameters:



Note:

Total Call window = 170 seconds (a + b + c)

Test samples = minimum of 100 call samples for each state

19. The tests shall be carried out with a minimum number of 1,000 call samples each month covering all regions in Malaysia, and the call samples to be evenly distributed between the regions.
20. For the purposes of multi-network testing, the test call windows must be synchronized. If there are calls that have failed or dropped, the next call attempt shall be made only when the next call window arrives.
21. Geographical positioning shall be based on the Global Positioning System (GPS) and the WGS-84 digital map or its equivalent.
22. All test log files shall be kept accordingly and must be presented to the Commission as and when required.
23. The Commission, at its discretion, may conduct sampling audits for the identified locations that have been tested.

Service Prioritization & Misrepresentation

24. A validation procedure shall be applied to avoid any service/application prioritization in order to ensure the test is conducted in a fair manner representing real user experience. These prioritizations include but not limited to the following:
 - i. SIM based prioritization.
 - ii. Service prioritization such as serving site transmit power manipulation during test.
25. Any service provider found to perform alteration to the network configuration or manipulation during test measurement such as service prioritization, shall be considered as non-compliance.
26. The reports of the test shall not be misrepresented. Any intentional misrepresentation or false reporting of measurement and report shall be considered as non-compliance to the Mandatory Standards.

PART C: REQUIREMENT FOR REPORT SUBMISSION

27. All reports that are required to be sent to the Commission should be sent to address and/or email as below. The Commission shall notify the service providers of any changes to the reporting address or email.

Malaysian Communications and Multimedia Commission
MCMC Tower 1, Jalan Impact, Cyber 6,
63000 Cyberjaya
Selangor Darul Ehsan

Email: qos.dept@mcmc.gov.my

28. The reports shall be in the form and format as described below. Each report shall be accompanied by a declaration signed by the Chief Executive Officer (or any other person that holds an equivalent designation) of the service provider duly authorised by the board of directors, stating that each report is true and accurate.

29. The service providers shall submit the report based on the following timelines:

Table 1: Reporting Timeline

No	Item	Reporting Period	Report Submission Date
1	Monthly Measurement Report for Public Cellular Service	Quarterly	By 30 th of the following month

30. The report submitted shall include all relevant information with regards to the test conducted including but not limited to:

- i. Time for each test conducted for each location
- ii. Information on the UE used for the test

31. The service providers shall submit the network QoS assessment report based on the format as described in **Attachment 1** of this document.

Subjected Areas for Mandatory Standards

32. The Mandatory Standards for public cellular service shall be enforceable to all states and federal territories in Malaysia.

33. The Mandatory Standards for public cellular service shall be enforced per state basis, based on the quarterly measurement result.

PART D: EFFECTIVE DATE AND COMMISSION CONTACT

34. These guidelines shall come into effect on **1 August 2021**, and shall continue to be effective unless modified, varied or revoked by the Commission. For avoidance of doubt, all actions under investigation initiated, actions taken and/or decisions made, under the revoked guidelines, shall continue to be valid and effective in relation to whom they apply, until discontinued or revoked, as the case may be.

35. These guidelines shall replace the Guidelines to The Commission Determination on the Mandatory Standards for Quality of Service (Public Cellular Service) - Determination No. 1 of 2015.

Attachment 1

Table 2: Format for Public Cellular Service Measurement Report

No	Region	State	Date	Call Analysis	Result
1				Call attempt	
				Call attempt failure ^[1]	
				Call connected	
				Call dropped ^[2]	
				Successful call	
				Call setup success rate (%)	
				Call dropped rate (%)	

[1] Provide the list of latitude and longitude for the location in the event of call attempt failure.

[2] Provide the list of latitude and longitude for the location in the event of call dropped.