



Suruhanjaya Komunikasi dan Multimedia Malaysia

Malaysian Communications and Multimedia Commission

**PROPOSAL FOR REVIEW OF THE MANDATORY STANDARDS FOR QUALITY OF
SERVICE (PUBLIC CELLULAR SERVICE) (DETERMINATION NO.1 2015)**

25 October 2019

This Public Inquiry Paper is prepared in fulfilment of Sections 58 and 61 of the Communications and Multimedia Act 1998.

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PREFACE

The Commission is hereby holding a Public Inquiry on the proposal for the revision of Mandatory Standards for Quality of Service (Public Cellular Service Network Performance) and invites members of the public and interested parties to participate in this inquiry by making written submissions on any matter they consider relevant to the inquiry. Written submissions, in both hard copy and electronic form, should be provided to the Commission in full by **12 noon, 9 December 2019 (45 days)** and addressed to:

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

Attention : Quality of Service Department
Or E-mail : qos.dept@cmc.gov.my
Or Fax : +60 3 86 88 10 00

In the interest of fostering informed and robust consultative process, the Commission may make available extracts of or entire submissions for others to read. Any commercially sensitive information should be provided under a separate cover and clearly marked "CONFIDENTIAL". Respondents are encouraged to support their comments with reasons and where appropriate provide or refer to evidence or other relevant information in support of their comments.

Incomplete and/or late submissions will not be considered.

The Commission thanks the public and all interested parties for their participation in this consultative process and for providing their submissions and feedback.

GLOSSARY

CMA1998	Communications and Multimedia Act 1998 (Act 588)
Commission	Malaysian Communications and Multimedia Commission
MS	Mandatory Standards
MSQoS	Mandatory Standards for Quality of Service
PI	Public Inquiry
QoS	Quality of Service

PREAMBLE

1. The Determination No.1 of 2015, Commission Determination on the Mandatory Standards for Quality of Service (Public Cellular Service) came into force on 1 January 2016. This MSQoS covers the standards for Quality of Service for delivery of voice over the public cellular platform. The MSQoS standards are segregated into two parts; network performance and customer service.
2. The review of the MSQoS for Public Cellular Service will separate the customer service standards into a new Mandatory Standards specifically focusing on customer service aspects. This PI will only cover modifications made on network performance standards in light of customer expectations and perception towards service delivery.
3. The review of this MSQoS will solely focus on QoS standards relating to network performance. Therefore, pursuant to section 104 and 106 of the CMA1998, the Commission hereby undertakes a review of Determination No.1 of 2015.
4. The proposed revision for network performance will be retained into this revised MSQoS (Public Cellular Service). The proposed revision also seeks to strengthen existing standards in relation to public cellular service in Malaysia. This MSQoS is targeted to be effective in 2020.

PUBLIC INQUIRY PROCESS

5. Section 58(2) of the CMA1998 provides that the Commission may hold a public inquiry if it is satisfied that the matter is of significant interest to either the public or to current or prospective licensees under the CMA1998. The objective of such a public inquiry is to inform as well as to invite views of the public and the licensees under the CMA1998 on the matter at hand.
6. The Commission is of the view that it is appropriate in the circumstances to hold a public inquiry under section 58 (2)(b) of the CMA1998 in order to obtain industry and public comment, and to promote transparency in the exercise of its powers.
7. Under section 61 (1) (d) of the CMA1998, the Public Inquiry period shall be a minimum of forty-five (45) days, within which public submissions are invited. In the present Public Inquiry, licensees and the public are given 45 days to formulate and submit their views on the matter.
8. The Commission shall take into consideration all submissions received within the Public Inquiry period. The Commission is required under section 65 of the CMA1998 to publish a report setting out its findings as a result of any inquiry it conducted, and such report shall be published within thirty (30) days of the conclusion of the inquiry. The Commission shall summarize the submissions received and publish the same in the report.

PART A: THE INTERPRETATION PART OF THE STANDARDS

9. The following interpretation shall be used in this revised MSQoS (Public Cellular Service):

“ASP” means Applications Service Provider;

"designated routes and areas" means those routes and areas as specified by the Commission in the guidelines;

“guidelines" means a guidelines issued by the Commission pursuant to paragraph 8 of the Commission Determination on the Mandatory Standards for Quality of Service (Public Cellular Service);

“NSP” means Network Service Provider;

“public cellular service” means an applications service involving a network of base stations or cells for the delivery of voice.

PART B: PROPOSED REVISION ON THE QUALITY OF SERVICE STANDARDS

10. A summary of the proposed revision of the QoS standards are outline in the Table 1 below:

Table 1: Proposed Revision of the Quality of Service Standards

	Quality of Service Indicator	Present Quality of Service Standard	Proposed Revision of the Quality of Service Standard
i.	Call setup success rate (CSSR)	Call setup success rate must be not less than 95.0%, for intra or inter network calls.	Call setup success rate must be not less than 99.0% , for intra or inter network calls.
ii.	Dropped call rate (DCR)	Dropped call rate for Designated Routes and Areas must be not more than 2.0%, for intra or inter network calls; and	*No change in standard.

		Dropped call rate for areas other than Designated Routes and Areas must be not more than 3.0%, for intra or inter network calls.	
iii.	Advance notice of scheduled downtime	<p>Every session of scheduled downtime due to occur in a quarterly reporting period must be notified to customers not less than 24 hours in advance; and</p> <p>Every session of scheduled downtime due to occur in a quarterly reporting period must be notified to the Commission in writing not less than 72 hours in advance.</p>	*To be mandated under the new MSQoS for Customer Service.
iv.	Service Disruption	<p>Any Mobile Switching Centre (MSC) must not be out of service for 30 minutes or longer.</p> <p>Service provider must notify the Commission within 60 minutes of any single service disruption incident that involves a Mobile Switching Centre (MSC) being out of service for any duration.</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 involves a Mobile Switching Centre (MSC) being out of service for 30 minutes or longer.</p>	*To be mandated under the new MSQoS for Customer Service.

v.	Percentage of billing related complaints	Percentage of billing related complaints must not be more than 1.0% per quarterly reporting period.	*To be mandated under the new MSQoS for Customer Service.
vi.	Non-billing related complaints per 1,000 customers	Non-billing related complaints must not be more than 6.0 complaints per 1,000 customers per quarterly reporting period.	*To be mandated under the new MSQoS for Customer Service.
vii.	Promptness in resolving customer complaints	<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> <p>Not less than 60.0% must be resolved within 3 business days;</p> <p>Not less than 90.0% must be resolved within 5 business days, and</p> <p>Not less than 95.0% must be resolved within 15 business days.</p>	*To be mandated under the new MSQoS for Customer Service.
viii.	Promptness in answering calls to Customer Hotline	<p>At least 80.0% of calls to a 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 a Customer Hotline that opted for human operator in a quarterly reporting period must be answered within 40 seconds.</p>	*To be mandated under the new MSQoS for Customer Service.

PART C: REVISION ON THE QUALITY OF SERVICE INDICATORS, MEASUREMENTS, STANDARDS, NOTIFICATION AND REPORTS

11. Revised standards for Network Performance are outlined in Table 2 below:

Table 2: Network Performance

	Quality of Service Indicator	Definition	Quality of Service Standard	Remarks / Rationale / Justification
i.	Call setup success rate (CSSR)	<p>Call setup success rate measure the percentage of calls successfully established by a cellular mobile device which enable communication to proceed.</p> <p>Formula:</p> $\frac{\text{Number of successful call attempts}}{\text{Number of call attempts}} \times 100\%$ <p>Intra- network call means a call connection within the network service of same provider.</p> <p>Inter-network call means a call connection between the network services of two providers</p>	Call setup success rate must be not less than 99.0% , for intra or inter network calls.	<ul style="list-style-type: none"> • Previous PCS results¹ showed Service Provider able to achieve above the required existing standards of 95.0%. • Higher voice call setup success rate standard will benefit the end user in terms of service availability

¹ The Network Performance Report 2018 - MCMC

12. Six (6) QoS indicators within MSQoS for Public Cellular Service to be placed under the new MSQoS for Customer Service. The 6 items are:
 - a. Advance notice of scheduled downtime;
 - b. Service disruption;
 - c. Percentage of billing related complaints;
 - d. Non-billing related complaints per 1000 customers;
 - e. Promptness in resolving customer complaints; and
 - f. Promptness in answering call to Customer Hotline.
13. The review of the MSQoS for Public Cellular Service will contain the revised and existing standards for network performance.
14. The demarcation of customer service standards into a new Mandatory Standards seeks to streamline customer service QoS indicators under one new unified document. Customer service standards focuses on service providers' responsibilities in regards to service disruptions, customer complaint related matters, notifications and reporting timelines between service providers and the Commission. Network performance standards will solely focus on network and technical matters in regards to network service delivery.
15. This will also enable the Commission to review future network performance standards more efficiently and keeping up to date with the evolution of technology in telecommunication industry.

PART D: APPLICABLE GUIDELINES

16. The Commission has developed a set of guidelines that sets out the testing procedures, examples of computations, reporting templates, explanatory notes and list of designated routes and areas to the standards proposed in this document. The said guideline is annexed in **Appendix** – Guidelines to the Commission Determination on the Mandatory Standards for Quality of Service (Public Cellular Service).

PART E: VIEW SOUGHT

17. The Commission seeks views on the proposed interpretations and the proposed Mandatory Standards highlighted in Parts A, B and C above, including comments on the proposed Guidelines stated in Part D which will be used for the purpose of the Determination.

18. The Commission also welcomes comments on related matters that stakeholders or respondents believe are relevant to improve the Mandatory Standards for Quality of Service (Public Cellular Service).

19. The Commission also seeks views on other possible approaches that may be employed to improve quality of service for the public cellular services in Malaysia.

APPENDIX



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. "X" OF 2020**

(SKMM(T)06-SEIR/140.003/Jld.1('x'))

DD MM 2020

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PART A: OBJECTIVE AND SCOPE

1. These guidelines are developed by the Malaysian Communications and Multimedia Commission (the "Commission") pursuant to paragraph 'x' of the Commission Determination on the Mandatory Standards for Quality of Service (Public Cellular Service), Determination No. 'x' of 2020 ("Mandatory Standards").
2. These guidelines set out the testing procedures, examples of computations, explanatory notes and list of designated routes and areas to the standards proposed in the Mandatory Standards.

PART B: NETWORK PERFORMANCE QUALITY OF SERVICE

Test Methodology

3. Number of successful call attempts means the number of call attempts less the number of blocked calls. A blocked call means that the call failed to be established due to a lack of available resources or no alerting within the call setup timeout.
4. The tests to measure the compliance with the standards on call setup success rate and dropped call rate shall be by way of a drive test or static test, or both drive and static tests. The Commission will, at its sole discretion, decide on which test should be conducted.
5. These tests will be carried out by the Commission, or the Commission's appointed consultant, in accordance with these guidelines. However, the Commission may, at its sole discretion, request the Public Cellular Service Providers to conduct the tests and provide the report to the Commission, if necessary.
6. The Commission at its discretion, may perform test on any selected service provider deemed necessary.

Route or Location Identification

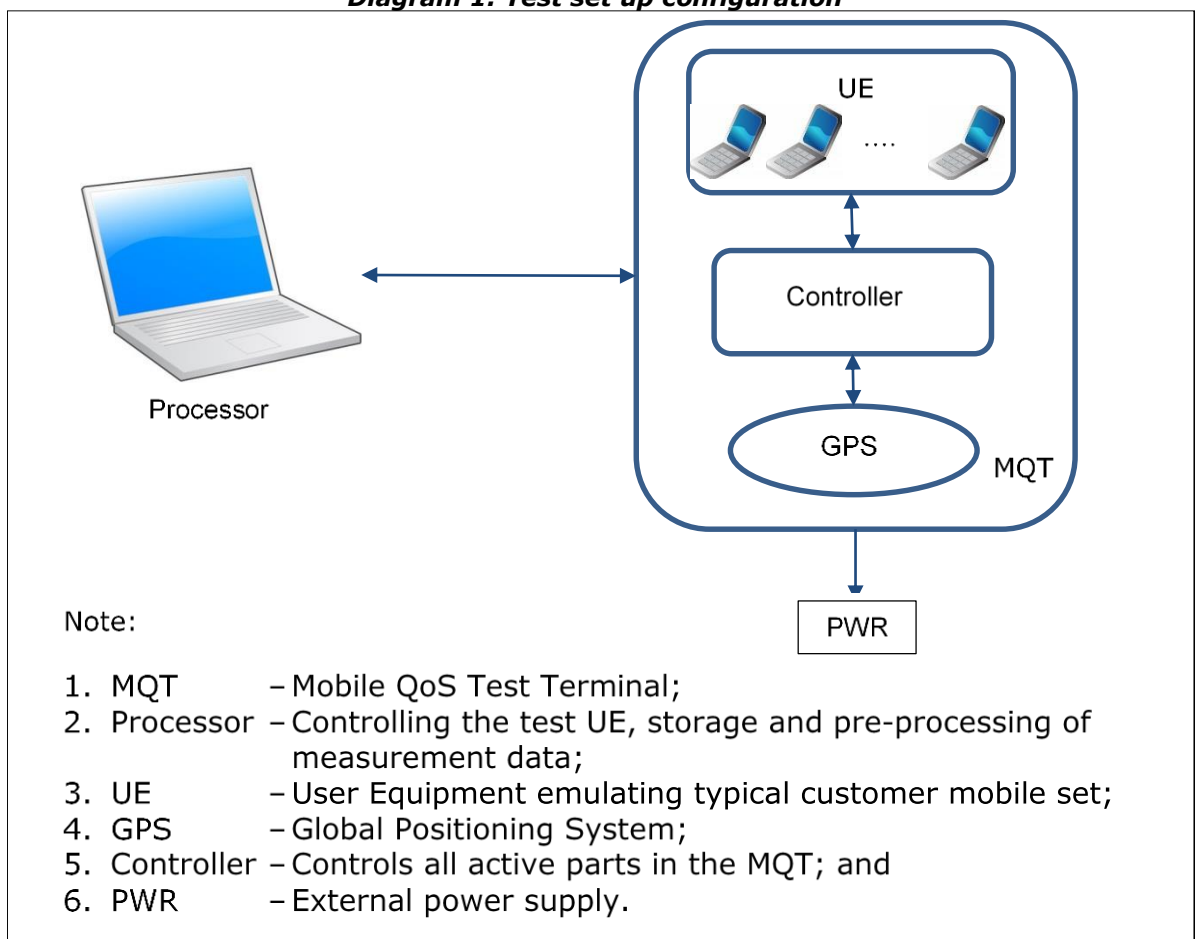
7. The tests are to be carried out along routes (for the drive test) or locations (for the static test) that have been ascertained to have cellular coverage.

8. Cellular coverage will be ascertained in the following manner:
- Confirmation from the public cellular service providers; or
 - Through the coverage information advertised by the public cellular service providers; or
 - Through the network indicator display on test phones; or
 - Where complaints from consumers on individual services by a particular Service provider is lodged to the MCMC.

Testing parameters

9. The test set up configuration is as shown below:

Diagram 1: Test set up configuration



10. The test call number will be a switch terminating number (for inter-network and intra-network testing) i.e. the test will only measure the call setup success rate and dropped call rates of the mobile originated call network.
11. The tests would be based on the following parameters:
 - Call holding time = 120 seconds
 - Interval time = 30 seconds
 - Call setup timeout = 20 seconds
 - Test samples = minimum of 100 samples

Note: Call window = 170 seconds = (a + b + c)

12. The software/measurement tools used for the tests shall be in compliance with the relevant European Telecommunications Standards Institute (ETSI)'s standards.
13. 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.
14. Geographical positioning will be based on the Global Positioning System (GPS) and the WGS-84 digital map or its equivalent.
15. 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:
 - SIM based prioritization.
 - Service based prioritization such as, application name, port number, IP address, type of service and etc.
16. Any service provider found to perform alteration to the network configuration or manipulation during test measurement such as service prioritization, which did not represent real user experience will be penalized with the following, but not limited to:
 - All results found to be manipulated during the said test will be zeroed.
 - The zeroed results will be included into the overall calculation for compliance.

Designated routes and areas

17. For the purpose of dropped call rate measurement, the designated routes and areas are as follows (detailed maps are annexed in **Appendix** of this document):
- Selected routes and areas in Putrajaya;
 - Selected routes and areas in Cyberjaya;
 - Maju Expressway;
 - Selected routes from Kuala Lumpur International Airport (KLIA) to Sultan Abdul Aziz Shah (Subang) Airport via ELITE Highway; and
 - Selected routes from Sultan Abdul Aziz Shah (Subang) Airport to Jalan Duta via North Klang Valley Expressway (NKVE).

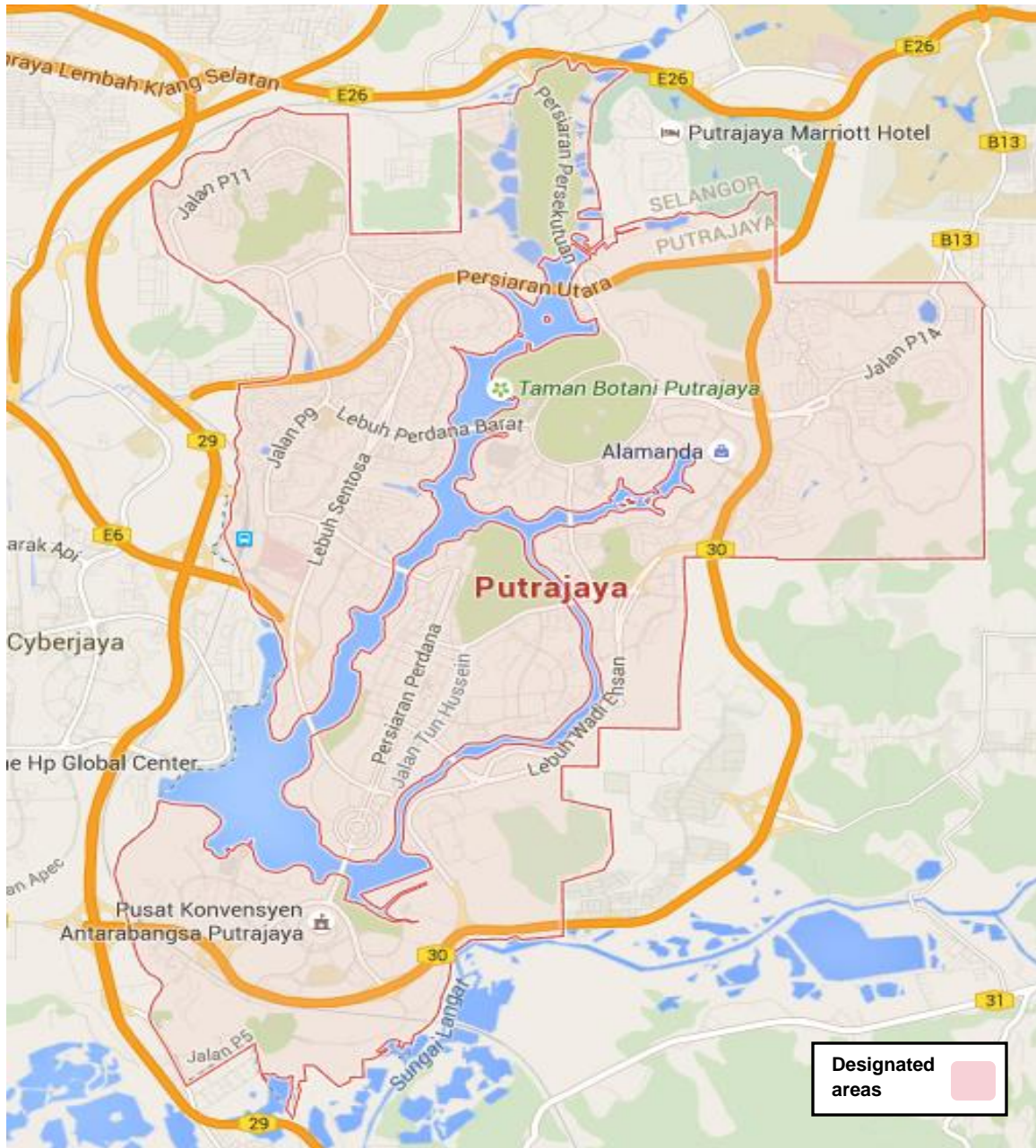
PART C: EFFECTIVE DATE AND COMMISSION CONTACT

18. These guidelines shall come into effect on **DD MM 2020**, and shall continue to be effective unless modified, varied or revoked by the Commission.
19. 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.
20. For any queries and further information on these Guidelines please contact:
- Quality of Service Department
Service Quality and Spectrum Operations Division
Phone : 03-8688 8000
Email : qos.dept@mcmc.gov.my

DETAILED MAPS OF THE DESIGNATED ROUTES AND AREAS

The designated routes and areas are as follows:

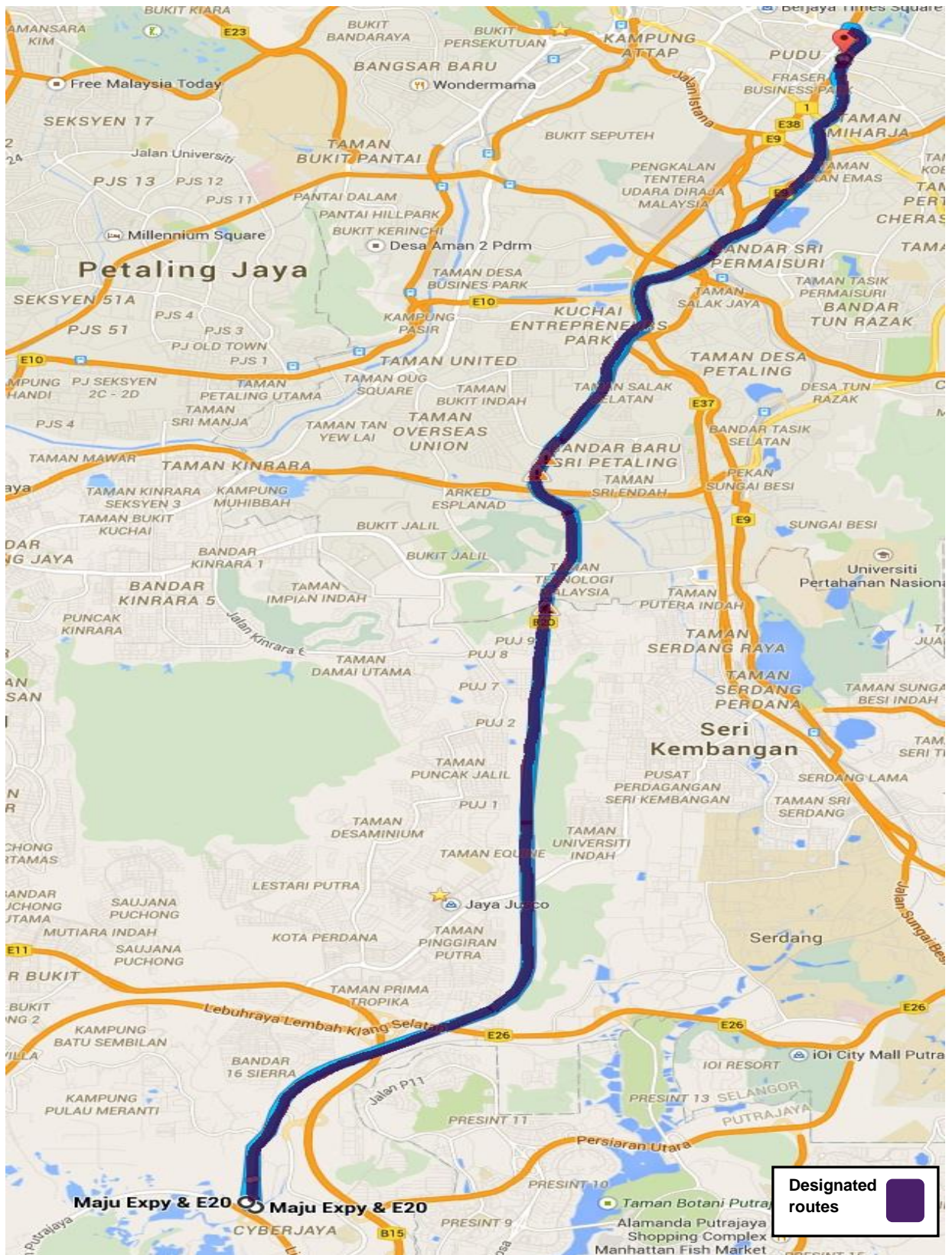
- a. Selected routes and areas in Putrajaya.



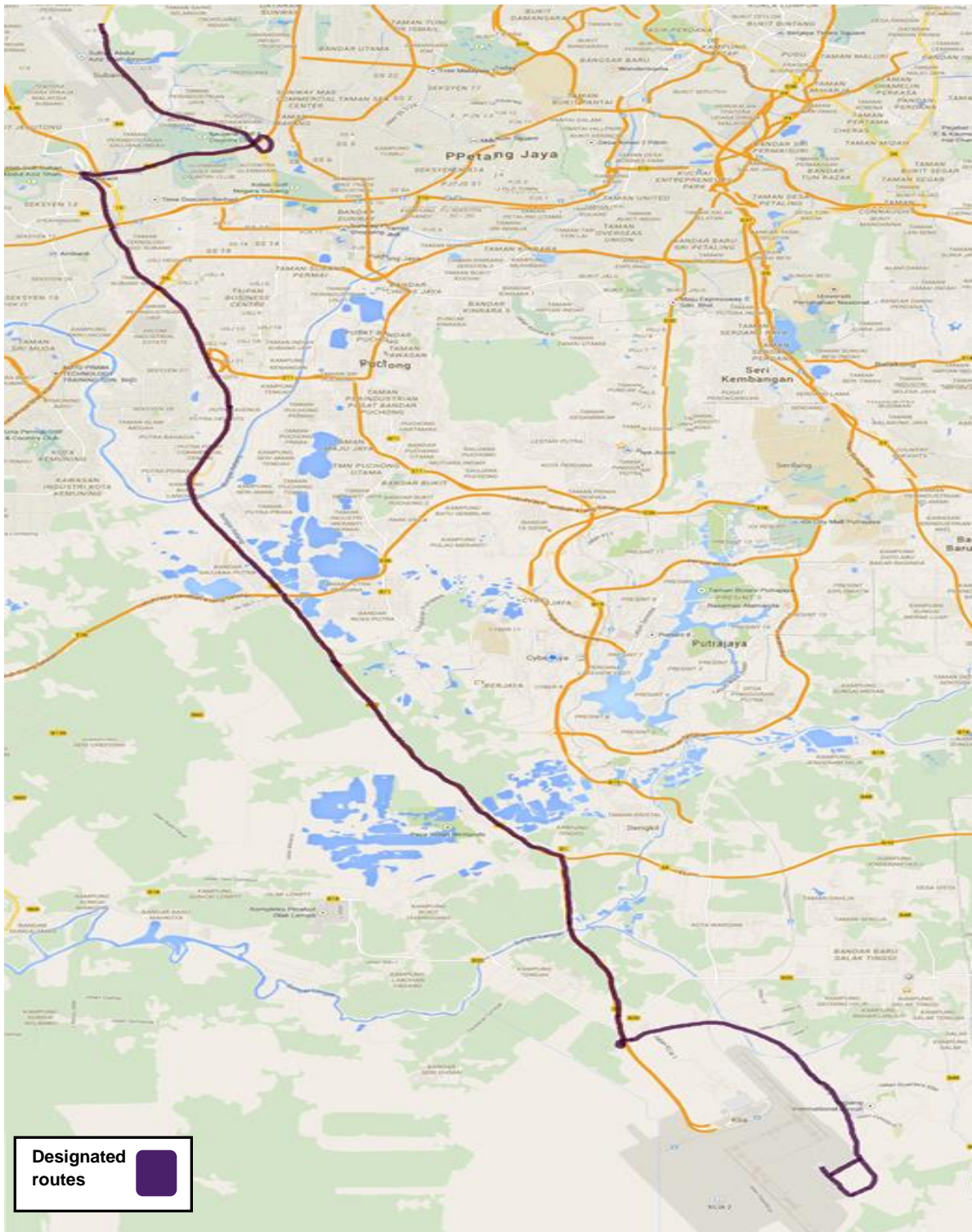
b. Selected routes and areas in Cyberjaya.



c. Maju Expressway.



- d. Selected routes from Kuala Lumpur International Airport (KLIA) to Sultan Abdul Aziz Shah (Subang) Airport via ELITE Highway.



- e. Selected routes from Sultan Abdul Aziz Shah (Subang) Airport to Jalan Duta via North Klang Valley Expressway (NKVE).

