

Terms of Reference (TOR) for providing operational support to conduct Quality of Service Drive Test for Cellular Mobile Operators

1. Background

The Bangladesh Telecommunication Regulatory Commission (ANS Operator's Quality of Service) Regulations, 2018 prescribes the standards of Quality of Service (QoS) involving a network of base stations or cells for the delivery of voice and data communications with mobility. The main indicators of the performance of a telecommunication network and of the degree to which such network conforms to the standards are specified in these regulations for specified parameters so that the respective operators shall comply with the specified QoS benchmarks.

Bangladesh Telecommunication Regulatory Commission (BTRC) has been conducting drive test to measure the QoS of ANS operators. The aim is to protect consumer interest and to improve the service quality. To make this process more intense and robust BTRC has decided to assign an experienced firm/company to provide operational support to conduct drive tests across the country for 06 (six) months.

2. Objectives of the assignment

The main objective of this assignment is to receive operational support in conducting drive tests for measuring and assessing the coverage, capacity and Quality of Service (QoS) of cellular mobile networks throughout the country including designated highways, districts, upazilas, unions and villages' roads and at selected spots. The measurement results would be comparable to actual user experiences and thus the operators would be directed to improve their network parameters to achieve better network coverage and better delivery of the services to their subscribers.

3. Scope of Services

BTRC is seeking for an experienced firm/company who will provide operational support to BTRC in conducting drive test in order to measure various Key Performance Indicator (KPI) parameters of QoS of the mobile operators for 6 months. It will cover the supply of personnel and logistics support. BTRC will provide drive test equipment, post processing tool, FTP server, Mobile SIMs and internet connections for FTP server along with the necessary guidance and supervision. All the costs associated with the subscription of mobile SIMs and charges for data package/recharge will be borne by BTRC. All the data/information collected during the tests will be the sole property of BTRC and the selected party cannot reuse, resell or share the data/information collected from the tests with anyone else in any form.

The scope of service also includes, but not limited to, the following:

- 3.1. Carrying out drive tests for voice and data services using BTRC's benchmarking tools under active supervision and guidance of BTRC personnel.
- 3.2. The selected party needs to report the KPIs' in a robust way. It should include all KPIs as mentioned in Bangladesh Telecommunication Regulatory Commission (ANS Operator's Quality of Service) Regulations, 2018 which is available at BTRC's website.
- 3.3. The selected party needs to provide raw data (log file) and it should process report using BTRC's post processing tool. Reporting format to be customizable any time according to BTRC's requirement.
- 3.4. BTRC will provide FTP server, post processing tool/server and storage databases. The selected party shall transfer the data generated by the drive tests to processing tool/server at regular interval as directed by BTRC.
- 3.5. All personnel, vehicles and logistics for the said purpose shall be provided by the selected party. Standard Air Conditioned Vehicle shall have the facility to install the equipment inside the vehicles and with a minimum 07 passengers seating capacity.
- 3.6. The selected party shall have to sign a Non-disclosure Agreement (NDA) with BTRC.
- 3.7. The selected party will have to take full responsibility with its working scope to keep the tool/equipment functional during the contact period.

3.8. The operational support would be provided for 06 months starting from the date of commencement of drive test. Each month will have 25 working days with 8 working (Drive Test) hours in a day. Working hours for a particular day will be guided by BTRC.

3.9. Drive Test area, schedule and extent:

Area/Region/Zone	Total DT time	Estimated total Mileage (minimum)	Estimated total spot tests (minimum number of locations or buildings)		Remarks
			Outdoor (Spot test)	Indoor (Walk test)	
Dhaka Division	2 Months (1 st and 6 th month)	3000 KM	100	50	All selected roads of the City Corporation Areas, selected districts (city and rural areas) and highways.
Chittagong Division	1 Month (2 nd month)	1500 KM	50	30	
Rajshahi and Rangpur Division	1 Month (3 rd month)	2000 KM	-	-	
Sylhet and Mymensingh Division	1 Month (4 th month)	2000 KM	-	-	
Khulna and Barishal Division	1 Month (5 th month)	2000 KM	-	-	

3.10. Selected firm/party need to submit provisional work schedule and road plan in suitable map format. BTRC will finalize the route & schedule and selected party shall have to perform Drive tests as per work schedule and route plan as directed by BTRC from time to time.

3.11. Travel time from hotel/accommodation place to designated Drive Test locations will not be considered or counted in test hours.

4. Qualification

The qualifications of the lead consultant, key technical staff and other staffs are mentioned in the following table.

Title	Nos.	Eligibility Criterion/ Qualification
Lead Consultant	01	Should have at least BSc engineering degree (in CSE/EEE/Telecom) from any reputed institute with a

Title	Nos.	Eligibility Criterion/ Qualification
		minimum of 05 years of proven working experience and at least 01 year of drive test experience.
Key Technical Staff	01	Should have at least BSc engineering degree (in CSE/EEE/Telecom) from any reputed institute with a minimum of 03 years of proven working experience and at least 01 year of drive test experience.
Technical Staff	03	Should have at least diploma engineering degree (in Electrical/ Electronics/ Computer/Telecom) from Government approved institutes with a minimum 03 years of proven working experience.

5. Reporting, Schedule of deliveries, period of performance

- 5.1. The selected party needs to submit report of any particular month within 10 days of the following month.
- 5.2. Final report to be submitted within ten (10) working days after the end of the contract period.
- 5.3. All the reporting formats will be vetted by BTRC.
- 5.4. Any other reporting instructions as directed by BTRC from time to time during the contact period should be followed.

6. Drive Test Methodology

- 6.1. The drive tests of each mobile network shall be conducted between 08 am and 11 pm (8 hours per day window as set by BTRC).
- 6.2. The speed of the vehicle, in case of mobility tests, should be maximum 30 km/hour (up to 50 km/hour for highways).
- 6.3. The selected party shall define Script parameters as per requirement of BTRC.
- 6.4. Drive test methodology and common map for QoS reporting would be finalised by BTRC and accordingly the selected party shall have to follow all the instructions in this respect.