

INDEPENDENT QUALITY OF SERVICE SURVEY REPORT

INTRODUCTION

1.1. In order to measure the performance and service quality of Cellular Mobile Operators (CMOs), an independent Quality of Service (QoS) Survey has been carried out in Three (03) different cities of Azad Jammu & Kashmir (AJK) and Two (02) roads. The name of cities & roads along with survey dates and testing samples are shown in **Table 1.1: QoS Survey Dates**:

S. #.	City / Road Name	Survey Dates
1.	Islamabad to Muzaffarabad	8 th March 2021
2.	Muzaffarabad	9 th ~ 10 th March 2021
3.	Bagh	16 th ~ 17 th March 2021
4.	Rawalpindi to Mirpur	22 nd March 2021
5.	Mirpur	23 rd ~ 25 th March 2021

Table 1.1: QoS Survey Dates

DRIVE TEST DETAILS

2.1. The QoS survey was carried out using the newly procured Automated QoS Monitoring & Benchmarking Tool i.e. "SmartBenchmarker". Drive test teams selected survey routes in such a manner to cover main roads, service roads and majority of sectors/colonies. During Voice Calls and SMS Sessions, both A-Party and B-Party mobile handsets were kept in auto detect mode, whereas, in case of Data Sessions the mobile handset were locked in 4G/LTE mode. The Voice Calls and SMS Samples were distributed as 70% ON-NET and 30% OFF-NET.

VOICE SERVICE

3.1. 5 x QoS KPIs have been measured while testing voice services. The results of voice QoS KPIs are as under:

- a. **NETWORK ACCESSIBILITY**. All CMOs have achieved the QoS KPI **Network Accessibility > 99%** in all surveyed cities and roads.
- b. **SERVICE ACCESSIBILITY**. None of the CMOs have achieved the QoS KPI **Service Accessibility of > 98%** in surveyed cities and roads.
- c. **CALL CONNECTION TIME**. The analysis of QoS KPI **Call Connection Time of < 6.5 Seconds** in all the surveyed cities and roads revealed following:
 - i. **COMPLIANCE**. The cities where CMOs remained compliant is mentioned in **Table 3.1: Compliance of Call Connection Time < 6.5 Seconds**.

S. #.	Operator	Cities	
		Count	Names
1.	SCOM	4	Muzaffarabad, Mirpur, Bagh, Islamabad to Muzaffarabad Road
2.	Ufone	1	Islamabad to Mirpur Road

Table 3.1: Compliance of Call Connection Time < 6.5 Seconds

- ii. **NON-COMPLIANCE.** The cities and roads where CMOs remained non-compliant is mentioned in **Table 3.2: Non-Compliance of Call Connection Time < 6.5 Seconds.**

S. #.	Operator	Cities	
		Count	Names
1.	Jazz	5	Muzaffarabad, Mirpur, Bagh, Islamabad to Muzaffarabad Road, Islamabad to Mirpur Road
2.	Telenor	5	Muzaffarabad, Mirpur, Bagh, Islamabad to Muzaffarabad Road, Islamabad to Mirpur Road
3.	Ufone	4	Muzaffarabad, Mirpur, Bagh, Islamabad to Muzaffarabad Road
4.	ZonG	5	Muzaffarabad, Mirpur, Bagh, Islamabad to Muzaffarabad Road, Islamabad to Mirpur Road
5.	SCOM	1	Islamabad to Mirpur Road

Table 3.2: Non-Compliance of Call Connection Time < 6.5 Seconds

- d. **CALL COMPELTION RATIO.** The analysis of QoS KPI **Call Completion Ratio of > 98%** in surveyed cities revealed following:

- i. **COMPLIANCE.** The cities and roads where CMOs remained compliant is mentioned in **Table 3.3: Compliance of Call Completion Ratio > 98%.**

S. #.	Operator	Cities	
		Count	Names
1.	Jazz	2	Mirpur, Bagh
2.	Telenor	4	Muzaffarabad, Mirpur, Bagh, Islamabad to Muzaffarabad Road,
3.	Ufone	2	Muzaffarabad, Bagh
4.	ZonG	3	Muzaffarabad, Bagh, Rawalpindi to Mirpur Road
5.	SCOM	2	Muzaffarabad, Islamabad to Muzaffarabad Road

Table 3.3: Compliance of Call Completion Ratio > 98%.

- ii. **NON-COMPLIANCE.** The cities and roads where CMOs remained non-compliant is mentioned in **Table 3.4: Non-Compliance of Call Completion Ratio > 98%.**

S. #.	Operator	Cities / Roads	
		Count	Names
1.	Jazz	3	Muzaffarabad, Islamabad to Muzaffarabad Road & Rawalpindi to Mirpur Road
2.	Telenor	1	Rawalpindi to Mirpur Road
3.	Ufone	3	Mirpur, Islamabad to Muzaffarabad Road & Rawalpindi to Mirpur Road
4.	ZonG	2	Mirpur, Islamabad to Muzaffarabad Road
5.	SCOM	2	Mirpur, Bagh

Table 3.4: Non-Compliance of Call Completion Ratio > 98%

- e. **END-TO-END SPEECH QUALITY / MEAN OPINION SCORE.**

- i. **COMPLIANCE.** The cities where CMOs remained compliant is mentioned in **Table 3.5: Compliance of Mean Opinion Score > 3.**