

Monthly Operating Support System (OSS) Report of Mobile Services



**Bhutan InfoComm and Media Authority
Royal Government of Bhutan**

May 2024

Contents

Background	3
Findings	3
(i) B-Mobile OSS	3
(ii) Tashi Cell OSS	4
Analysis	5

1. Background

The Authority collects the monthly system generated Mobile Operating Support System (OSS) report from the Telecom Operators and does reviews on the average Mobile Quality of Service (QoS). Based on the system generated Mobile OSS reports, the Authority decides the locations of physical verification or a drive test and carries out the Mobile QoS drive test to monitor and report the QoS regularly. The Mobile OSS report contains the mobile QoS for both voice and data services which are based on and measured through the various parameters of key performance indicators (KPI) of Mobile services of the 20 dzongkhags.

These OSS reports contain both operator's averaged Operation Support system (OSS) reports for the month of May 2024.

2. Findings

The results and findings of OSS system generated reports submitted by both the telecom operators are mentioned below:

(i) B-Mobile OSS

a. 3G

BTL monthly OSS report for May, 2024							
Sl. No	Region	CS drop rate (%)	PS drop rate(%)	CS success rate (%)	PS success rate (%)	DL user throughput(Mbps)	UL user throughput(Mbps)
1	Thimphu	0.13	0.45	99.72	97.72	2.05	0.46
2	Paro	0.39	0.52	99.01	96.80	2.63	0.51
3	Haa	0.06	0.71	99.75	98.56	2.92	0.52
4	Wangdi	0.06	0.62	99.78	98.61	2.95	0.57
5	Gasa	0.09	0.99	99.82	97.47	3.18	0.51
6	Punakha	0.08	0.73	99.79	97.97	2.17	0.55
7	Chukha	0.14	0.56	99.75	98.21	2.96	0.52
8	Samtse	0.14	0.68	99.74	98.38	2.29	0.49
9	Sarpang	0.25	0.60	99.82	98.80	3.10	0.51
10	Dagana	sunset	sunset	sunset	sunset	sunset	sunset
11	Zhemgang	0.98	1.30	90.80	92.78	2.26	0.42
12	Tsirang	sunset	sunset	sunset	sunset	sunset	sunset
13	Trongsa	0.36	0.89	99.83	99.21	2.30	0.55
14	Bumthang	0.14	0.76	99.78	99.02	1.79	0.44
15	S/Jongkhar	0.21	0.80	99.75	98.52	2.98	0.50
16	Pgytsel	0.13	0.60	99.85	99.09	2.44	0.50
17	Trashigang	0.49	1.11	99.63	98.92	2.55	0.49
18	T/yangtse	0.07	0.35	99.89	99.60	3.21	0.55
19	Mongar	0.08	0.71	99.87	98.91	2.23	0.50
20	Lhuntse	0.08	0.46	99.84	98.90	2.52	0.53

b. 4G

BTL monthly OSS report for May, 2024					
Sl. No	Region	PS drop rate(%)	PS success rate (%)	DL user throughput(Mbps)	UL user throughput(Mbps)
1	Thimphu	0.57	99.72	13.46	3.11
2	Paro	0.42	99.82	15.22	3.13
3	Haa	0.55	99.83	20.93	2.35
4	Wangdi	0.67	99.78	13.20	2.98
5	Gasa	0.49	99.93	36.00	1.97
6	Punakha	0.49	99.73	15.78	2.38
7	Chukha	0.81	99.78	17.25	2.71
8	Samtse	1.02	99.75	16.95	2.69
9	Sarpang	0.45	99.90	22.75	3.09
10	Dagana	0.74	99.75	20.01	1.33
11	Zhemgang	0.89	99.85	32.86	2.06
12	Tsirang	0.47	99.91	16.90	2.45
13	Trongsa	0.65	99.74	30.12	2.03
14	Bumthang	0.73	99.88	19.49	2.08
15	S/Jongkhar	1.30	99.76	19.28	2.00
16	Pgytsel	0.92	99.78	18.53	1.86
17	Trashigang	0.61	99.79	18.86	1.89
18	T/yangtse	0.50	99.88	28.76	2.64
19	Mongar	0.62	99.83	22.37	1.98
20	Lhuntse	0.48	99.88	19.52	1.21

c. 5G

BTL monthly OSS report for May, 2024					
Sl. No	Region	PS drop rate(%)	PS success rate (%)	DL user throughput(Mbps)	UL user throughput(Mbps)
1	Thimphu	1.97	99.86	240.69	1.20
2	Paro	1.63	99.15	284.19	1.66
3	Haa	0.52	99.91	294.74	1.14
4	Wangdi	1.45	99.95	259.31	2.72
5	Gasa	0.49	99.96	153.39	0.55
6	Punakha	1.59	99.96	297.55	2.38
7	Chukha	2.17	99.92	291.46	1.44
8	Samtse	1.25	99.95	298.43	2.24
9	Sarpang	0.97	99.98	102.00	1.33
10	Dagana	1.71	99.99	99.92	0.89
11	Zhemgang	0.16	99.93	347.04	0.67
12	Tsirang	0.67	99.99	193.53	1.11
13	Trongsa	1.20	99.98	139.07	0.62
14	Bumthang	0.72	99.97	136.65	0.96
15	S/Jongkhar	1.85	99.96	159.05	1.31
16	Pgytsel	1.14	99.97	212.22	0.61
17	Trashigang	1.20	99.90	317.28	3.63
18	T/yangtse	0.73	99.95	427.37	2.40
19	Mongar	3.09	99.93	256.04	3.56
20	Lhuntse	0.88	99.90	441.11	1.71

(ii) Tashi Cell OSS

a. 3G

TICPL monthly OSS report for May, 2024							
Sl. No.	Region	CS drop rate (%)	PS drop rate (%)	CS RAB success rate (%)	PS RAB success rate(%)	DL user throughput (Mbps)	UL user throughput(Mbps)
1	Bumthang	0.30	0.15	99.50	99.68	2.83	0.14
2	Chukha	0.28	0.35	99.91	99.52	2.11	0.12
3	Dagana	0.22	0.39	99.49	99.39	2.82	0.14
4	Gasa	0.56	0.54	99.77	99.80	1.80	0.09
5	Haa	0.08	0.11	99.98	99.82	2.79	0.14
6	Lhuntse	0.48	0.67	98.54	98.16	2.11	0.12
7	Mongar	0.23	0.40	98.54	99.14	2.31	0.13
8	Paro	0.14	0.20	99.91	99.69	2.21	0.14
9	Pemagatshel	0.19	0.23	99.86	99.75	2.50	0.13
10	Punakha	0.12	0.20	99.95	99.66	2.51	0.14
11	Samtse	0.19	0.23	99.97	99.74	1.81	0.13
12	Sarpang	0.16	0.27	99.75	99.48	2.21	0.13
13	S/jongkhar	0.19	0.55	99.64	98.81	2.00	0.11
14	Thimphu	0.07	0.17	99.91	99.72	2.72	0.14
15	Trashigang	0.17	0.25	99.80	99.02	2.36	0.13
16	Trongsa	0.09	0.13	99.93	99.70	2.57	0.14
18	Trashi yangtse	0.11	0.15	99.98	99.62	2.71	0.14
17	Tsirang	0.17	0.25	99.73	99.68	1.99	0.13
19	Wangdi	0.22	0.42	99.53	99.43	2.49	0.13
20	Zhemgang	0.23	0.46	99.64	99.53	2.26	0.13

b. 4G

TICPL monthly OSS report for May, 2024					
Sl. No	Region	PS drop rate(%)	PS success rate (%)	DL user throughput(Mbps)	UL user throughput(Mbps)
1	Bumthang	0.14	99.92	12.96	1.54
2	Chukha	0.34	99.74	14.00	1.73
3	Dagana	0.23	99.85	16.43	1.59
4	Gasa	0.57	99.13	21.34	1.03
5	Haa	0.10	99.92	12.58	1.82
6	Lhuntse	0.21	99.79	10.67	1.33
7	Mongar	0.20	99.87	9.80	1.42
8	Paro	0.12	99.88	10.43	1.59
9	Pemagatshel	0.08	99.24	10.06	1.32
10	Punakha	0.17	99.90	12.28	1.48
11	Samtse	0.61	99.65	13.23	1.46
12	Sarpang	0.18	99.87	11.66	1.64
13	S/jongkhar	0.29	99.79	13.57	2.01
14	Thimphu	0.19	99.65	11.12	1.60
15	Trashigang	0.14	99.90	10.51	1.75
16	Trongsa	0.07	99.87	14.08	1.98
17	Trashi yangtse	0.06	99.90	10.07	1.69
18	Tsirang	0.14	99.87	8.35	1.28
19	Wangdi	0.14	99.89	14.87	2.01
20	Zhemgang	0.16	99.79	15.21	1.69

c. 5G

TICPL monthly OSS report for May, 2024					
Sl. No	Region	PS drop rate(%)	PS success rate (%)	DL user throughput(Mbps)	UL user throughput(Mbps)
1	Bumthang	1.15	99.97	50.15	1.08
2	Chukha	1.88	99.94	50.40	1.07
3	Dagana	0.85	99.97	160.49	0.75
4	Gasa	0.14	99.99	51.43	1.02
5	Haa	1.12	99.95	171.16	1.00
6	Lhuntse	1.31	99.98	50.00	1.58
7	Mongar	1.51	98.68	50.96	0.96
8	Paro	0.46	99.92	51.03	1.33
9	Pemagatshel	0.92	99.93	57.41	0.79
10	Punakha	0.88	99.95	82.31	1.58
11	Samtse	1.62	99.94	56.01	1.05
12	Sarpang	0.97	99.90	50.02	0.66
13	S/jongkhar	1.94	99.71	51.36	1.05
14	Thimphu	1.16	99.80	64.21	1.25
15	Trashigang	0.28	99.94	50.58	1.04
16	Trongsa	1.53	99.90	110.56	0.77
17	Trashi yangtse	1.92	99.94	50.10	0.93
18	Tsirang	0.76	99.96	127.56	1.08
19	Wangdi	0.65	99.77	89.40	0.96
20	Zhemgang	0.58	99.47	196.73	1.07

3. Analysis

- a. The download throughput for 3G is within the set standard. The Upload throughput for 3G of both the telcos is below the standard in all Dzongkhags. However, since there are not many users and 3G is being phased out and wherever 3G is available the 4G is also available, **the issue does not have much implications.**
- b. The download throughput for 4G of both the telcos is within the set standard in all Dzongkhags.
- c. The Upload throughput for 4G of BTL is within the standard except for Bumthang and Lhuntse. The Upload throughput for 4G of BTL is within the set standard in all Dzongkhags except for Gasa, Dagana, Mongar and Lhuentse. The upload throughput of TICPL is below the standard in all Dzongkhags except for S/Jongkhar and Wangdue Phodrang.
- d. The Download throughput for 5G of BTL is within the standard for all Dzongkhags except for Dagana Dzongkhag. The Download throughput for 5G of TICPL is below the standard in all Dzongkhags except for Dagana, Haa, Trongsa, Tsirang and Zhemgang.
- e. The Upload throughput for 5G of both the telcos is below the standard for all Dzongkhags.
- f. Both the telcos clarified that the low upload throughput of 5G is due to less number of users uploading through 5G. If there is more upload traffic through 5G, there could probably be an accurate representation of the upload speed obtained by a user.
- g. The throughput for 5G of both the telcos include 5G FWA service throughput along with the cellular service throughput, and therefore the average throughput usually comes less.