

Report on the Mobile Voice, SMS and Data Tariff Implementation Monitoring



**BHUTAN INFOCOMM AND MEDIA AUTHORITY
ROYAL GOVERNMENT OF BHUTAN THIMPHU, BHUTAN**

(July - September 2023)

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1. Background

The Bhutan InfoComm and Media Authority (Authority) as a regulator of the Information, Communications and Media sector in Bhutan, has been mandated with numerous functions related to ICT and Media services. One of the most important functions is to protect consumers of ICT and Media services, among others, the rates charged for, and the quality of ICT services provided.

The ICT services are provided by the ICT Service Providers to the customers as per the approved rates and tariffs. It is important to monitor and verify whether the Service Providers provide and abide by the approved rates and tariffs.

The Authority thus assesses the tariff implementation of the Service Providers, especially the Telecom Services and it will mainly verify and validate whether the Service Providers are providing the services to the customers as per the tariff rates approved by the Authority.

2. Objectives

The main objective of this tariff implementation monitoring is to measure and verify;

- a. Mobile voice call and Short Message Service (SMS) charges implementation (assess whether the Service providers charges the voice calls and SMS as per the approved tariff rate),
- b. Mobile data allocation (assess whether the subscribed data volumes are provided as per the approved package/tariff rate),

3. Methodology

a. For Cellular/Mobile Voice and Data

(i) Voice Call Monitoring

- The voice call tariff implementation monitoring is carried out using Subscriber Identity Modules (SIMs).
- The random voice calls made using the SIMs and their billing charges are monitored taking into account the duration of voice calls, time of the day, on-net or off-net calls etc.

- The detailed information of voice calls made by each SIM is recorded as per the sample table below.

Sl. No	Voice call from	Voice call to	On-net/off-net call?	Duration of the Day (Time of the call made)	Duration of call	Total billing charged	Tariff/unit charged	BICMA Approved Tariff Rate	Is the call charge as per the approved tariff?
1.	SIM of Operator 1 (BTL)	SIM of Operator 1 (BTL)	On-net						
2.	SIM of Operator 1 (BTL)	SIM of Operator 2 (TICL)	Off-net						
3.	SIM of Operator 2 (TICL)	SIM of Operator 1 (BTL)	Off-net						
4.	SIM of Operator 2 (TICL)	SIM of Operator 2 (TICL)	On-net						

- All the voice call data carried out by each SIMs as per the table above are compiled and analyzed.

(ii) SMS Charges Monitoring

- The SMS tariff implementation monitoring is carried out using Subscriber Identity Modules (SIMs).
- The random SMSs made using the SIMs and their billing charges are monitored taking into account the size (character number) of SMS, time of the day, on-net or off-net SMS etc.
- The detailed information of SMS made by each SIM is recorded as per the sample table below.

Sl. No	SMS from	SMS to	On-net/off-net SMS?	Size (Character number) of SMS	Time of SMS sent	Total billing charged	Tariff/unit charged	BICMA Approved Tariff Rate	Is the SMS charge as per the approved tariff?
1.	SIM of Operator 1 (BTL)	SIM of Operator 1 (BTL)							
2.	SIM of Operator 1 (BTL)	SIM of Operator 2 (TICL)							
3.	SIM of Operator 2 (TICL)	SIM of Operator 1 (BTL)							
4.	SIM of Operator 2 (TICL)	SIM of Operator 2 (TICL)							

- All the SMS charges for each SIMs as per the table above are compiled and analyzed.

(iii) Cellular Data Charges Monitoring

- The data tariff implementation monitoring is carried out using SIM’s (users) data consumption against each data package.
- The data subscription tariff and its consumption will be based on the system generation report at the operator’s end.
- The Authority’s officials inspected the operator's system (office) and generated the real time system report for data package usage from the system, in the presence of operator’s officials.
- The random SIM number and subscription packages have been selected for the report generation and review.
- The consumed data volume is compared with the amount of data volume subscribed as per the sample table below.

Sl. No	Service providers	Total Package data allocated	Time of Package data allocated	Time of Package data consumed fully	Data volume consumed as per the user information	Is the data package allocated by the Operator as per the consumed data?
1.	TICL	e.g. Nu. 199 data package				
2.	BTL					

- All the data consumption information carried out by each SIMs and data packages as per the sample table above are compiled and analyzed.

4. Information on Existing Approved Tariff Rates for Voice and Data packages

(i) Approved Voice Call Tariffs

The approved voice call tariffs for both the operators as mentioned below:

a. TICL

Call Category	Standard Hours (6AM - 6PM)	Peak Hours (6PM - 12 Midnight)	Economy Hours (12 Midnight - 6AM)	Remarks
On-net (TashiCell to TashiCell)	Nu. 0.36/unit	1st Min: Nu 0.45/unit 2nd Min: Nu. 0.41/unit hereafter: Nu.0.36/unit	Nu. 0.10/unit	1 unit = 15 seconds
Off net (TashiCell to BMobile)	Nu. 0.36/unit	Nu. 0.45/unit	Nu. 0.36/unit	
TashiCell to BTL (Fixed Line)	Nu. 0.68/unit	Nu. 0.68/unit	Nu. 0.68/unit	

b. BTL

Category	ON-NET				OFF-NET		
	Off-Peak Hour	Peak Hour	Economy Hour	Late night	Off-Peak Hour	Peak Hour	Economy Hour
Timing	6AM – 3PM	3PM – 10 PM	10 PM – 6 AM	12 AM – 4 AM	6AM – 3PM	3PM – 10 PM	10 PM – 6 AM
Tariff	Nu.0.35/unit	Nu.0.45/unit	Nu 0.25/unit	Nu.0.10/unit	Nu.0.35/unit	Nu.0.45/unit	Nu 0.35/unit

(ii) Approved SMS Rates

The approved SMS tariffs for both the operators as mentioned below:

a. TICL

SMS Category	Charge	Remarks
On-net SMS (TashiCell to TashiCell)	Nu. 0.30 /SMS	A SMS has the character length of 160 characters
Off-net SMS (TashiCell to BMobile)	Nu. 0.30/SMS	

b. BTL

Category	ON-NET		OFF-NET
Timing	12 midnight – 4 AM(Late night)	4am-12 midnight (standard)	Nu 0.45/SMS
Revised Tariff	Nu.0.10/SMS	Nu 0.40/SMS	

(iii) Approved Data Packages

a. TICL

Prepaid Plans	Rate (Nu)	Data Volume in MB	Validity
Daily Plan	19	260	1 day
Weekly Plan	49	660	7 Days
Daza Plan	99	1,330	30 Days
Daza Plus Plan	199	2,720	30 Days
Barma Plan	299	4,500	30 Days
Barma Plus Plan	499	8,260	30 Days

4G Promo Plan	599	19,170	30 Days
4G Chenpo Plan	777	25,975	30 Days
Home Daza Plan	999	37,570	30 Days
4G Chenpo Plus Plan	1,299	52,794	30 Days
Home Chenpo Plan	1,499	62,463	30 Days
Office Daza Plan	1,999	90,000	30 Days
Office Barma Plan	2,499	120,000	30 Days
Office Chenpo Plan	2,999	150,000	30 Days

b. BTL

Prepaid Plans	Rate (Nu)	Data Volume in MB	Validity
Daily Plan	19	260	1 Day
Daily Plan	29	410	1 Day
Weekly Plan	39	520	7 Days
Weekly Plan	49	660	7 Days
Monthly Plan	99	1,330	30 Days
Monthly Plan	199	2,764.8	30 Days

Monthly Plan	299	4,608	30 Days
Monthly Plan	499	8,499.2	30 Days
Monthly Plan	699	22937.6	30 Days
Monthly Plan	799	27033.6	30 Days
Monthly Plan	999	37,570	30 Days
Monthly Plan	1,199	48,730	30 Days

5. Monitoring Results

(i) Voice Call Monitoring Test Results

The test results for voice call monitoring are mentioned in the table below:

Sl. No	Voice call from	Voice call to	On-net/Of f-net	Duration of the Day (Time of the call made)	Duration of call	Total billing charged (Nu)	Tariff/unit charged	BICMA Approved Tariff Rate (Nu)	Is the call charge as per the approved tariff?
1.	SIM Operator (BTL) of 1	SIM Operator (BTL) of 1	On-net	14:00(Off-Peak hour)	14 secs	0.35	$1 * 0.35 = 0.35$	Nu. 0.35	Yes
2.	SIM Operator (BTL) of 1	SIM Operator (BTL) of 1	On-net	15:44 (Peak hour)	3 min 31 secs	6.75	$15 * 0.45 = 6.75$	Nu. 0.45	Yes
3.	SIM Operator (BTL) of 1	SIM Operator (BTL) of 1	On-net	22:58 (Economy Hour)	1 min 4 secs	1.25	$5 * 0.25 = 1.25$	Nu. 0.25	Yes
4.	SIM Operator (BTL) of 1	SIM Operator (BTL) of 1	On-net	01: 38 (Late night hour)	9 secs	0.1	$1 * 0.1 = 0.1$	Nu. 0.10	Yes
5.	SIM Operator (BTL) of 1	SIM Operator (TICL) of 2	Off-net	08:00 am (Off-Peak hour)	10 secs	0.35	$1 * 0.35 = 0.35$	Nu. 0.35	Yes
6.	SIM Operator (BTL) of 1	SIM Operator (TICL) of 2	Off-net	20:30 (Peak hour)	14 secs	0.45	$1 * 0.45 = 0.45$	Nu. 0.45	Yes
7.	SIM Operator (BTL) of 1	SIM Operator (TICL) of 2	Off-net	01:31 am (Economy hour)	5 secs	0.35	$1 * 0.35 = 0.35$	Nu. 0.35	Yes

8.	SIM Operator (BTL)	of 1	SIM Operator (BTL)	of 1	On-net	13:45 (Off-Peak hour)	9 secs	0.35	$1 * 0.35 = 0.35$	Nu. 0.35	Yes
9.	SIM Operator (BTL)	of 1	SIM Operator (BTL)	of 1	On-net	16:16(Peak hour)	1 Min 49 Secs	3.6	$8 * 0.45 = 3.6$	Nu. 0.45	Yes
10.	SIM Operator (BTL)	of 1	SIM Operator (BTL)	of 1	On-net	23:24 pm (Economy hour)	50 secs	1.00	$4 * 0.25 = 1.00$	Nu. 0.25	Yes
11.	SIM Operator (BTL)	of 1	SIM Operator (BTL)	of 1	On-net	01:30 (Late night)	40 secs	0.3	$3 * 0.1 = 0.3$	Nu. 0.10	Yes
12.	SIM Operator (BTL)	of 1	SIM Operator (TICL)	of 2	Off-net	14:41 (Off-peak hour)	22 secs	0.7	$2 * 0.35 = 0.7$	Nu. 0.35	Yes
13.	SIM Operator (BTL)	of 1	SIM Operator (TICL)	of 2	Off-net	15:33 (peak hour)	38 secs	1.35	$3 * 0.45 = 1.35$	Nu. 0.45	Yes
14.	SIM Operator (BTL)	of 1	SI M Operator (TICL)	of 2	Off-net	11:35 pm (Economy hour)	20 secs	0.7	$2 * 0.35 = 0.70$	Nu. 0.35	Yes
15.	SIM Operator (TICL)	of 2	SIM Operator (TICL)	of 2	On-net	14:18 (Standard hour)	6 secs	0.36	$1 * 0.36 = 0.36$	Nu. 0.36	Yes
						19:16 (Peak hour)	23 secs	0.9	$2 * 0.45 = 0.9$	Nu. 0.45	Yes

16.	SIM Operator (TICL)	of 2	SIM Operator (TICL)	of 2	On-net	call duration = 2 minutes, 17 seconds)	0		0	Nu. 0.41	Yes
							0		0	Nu. 0.36	Yes
17.	SIM Operator (TICL)	of 2	SIM Operator (TICL)	of 2	On-net	01:24 (Economy hour)	18 secs	0.2	$2 * 0.1 = 0.2$	Nu. 0.10	Yes
18.	SIM Operator (TICL)	of 2	SIM Operator (BTL)	of 1	Off-net	13:23 (Standard hour)	43 secs	1.08	$3 * 0.36 = 1.08$	Nu. 0.36	Yes
19.	SIM Operator (TICL)	of 2	SIM Operator (BTL)	of 1	Off-net	22:20 (Peak hour)	50 secs	1.8	$4 * 0.45 = 1.8$	Nu. 0.45	Yes
20.	SIM Operator (TICL)	of 2	SIM Operator (BTL)	of 1	Off-net	01:50 (Economy hour)	10 secs	0.36	$1 * 0.36 = 0.36$	Nu. 0.36	Yes
21.	SIM Operator (TICL)	of 2	SIM Operator (BTL)	of 1	Fixed line	11:48 am (Standard hour)	14 secs	0.68	$1 * 0.68 = 0.68$	Nu.0.68	Yes
22.	SIM Operator (TICL)	of 2	SIM Operator (BTL)	of 1	Fixed line	19:56 (Peak Hour)	14 secs	0.68	$1 * 0.68 = 0.68$	Nu.0.68	Yes
23.	SIM Operator (TICL)	of 2	SIM Operator (BTL)	of 1	Fixed line	01:10 am (Economy hours)	14 secs	0.68	$1 * 0.68 = 0.68$	Nu.0.68	Yes
24.	SIM	of	SIM	of	On-net	11:29 am	40 secs	1.08	$3 * 0.36 =$	Nu. 0.36	Yes

	Operator (TICL)	2	Operator (TICL)	2		(Standard hour)			1.08		
25.						22:30 (Peak Hours)	33 secs	1.35	$3 * 0.45 = 1.35$	Nu. 0.45	Yes
	SIM Operator (TICL)	of 2	SIM Operator (TICL)	of 2	On-net		0		0	Nu. 0.41	Yes
							0		0	Nu. 0.36	Yes
26.	SIM Operator (TICL)	of 2	SIM Operator (TICL)	of 2	On-net	1:10 am (Economy hour)	5 secs	0.1	$1 * 0.10 = 0.1$	Nu. 0.10	Yes
27.	SIM Operator (TICL)	of 2	SIM Operator (BTL)	of 1	Off-net	16:30 pm (Standard hour)	10 secs	0.36	$1 * 0.36 = 0.36$	Nu. 0.36	Yes
28.	SIM Operator (TICL)	of 2	SIM Operator (BTL)	of 1	Off-net	22:36 pm (peak hour)	29 secs	0.9	$2 * 0.45 = 0.9$	Nu. 0.45	Yes
29.	SIM Operator (TICL)	of 2	SIM of Op Operator (BTL)	1	Off-net	1:05 am (Economy hour)	20 secs	0.72	$2 * 0.36 = 0.72$	Nu. 0.36	Yes
30.	SIM Operator (TICL)	of 2	SIM Operator (BTL)	of 1	Fixed line	09: 59 pm (Standard hour)	5 secs	0.68	$1 * 0.68 = 0.68$	Nu. 0.68	Yes
31.	SIM Operator (TICL)	of 2	SIM Operator (BTL)	of 1	Fixed line	22:02 (Peak hour)	10 secs	0.68	$1 * 0.68 = 0.68$	Nu.0.68	Yes

32.	SIM Operator (TICL)	of 2	SIM Operator (BTL)	of 1	Fixed line	00:30 (Economy hour)	9 secs	0.68	$1 * 0.68 = 0.68$	Nu.0.68	Yes
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(ii) SMS Charges Monitoring Test Results

The test results for SMS charges monitoring are mentioned in the table below:

Sl. No	SMS from	SMS to	On-net/ Off-net	Duration of the Day (Time of the SMS made)	Number of characte rs sent	Total billing charged	SMS Tariff/16 0 character s charged	Approved Tariff Rate (Nu)	Is the call charge as per the approved tariff?
1.	SIM of Operator 1 (BTL)	SIM of Operator 1 (BTL)	On-net	09:39 (Standard)	8	0.40	Nu. 0.40	0.40	Yes
2.	SIM of Operator 1 (BTL)	SIM of Operator 1 (BTL)	On-net	00:23 (Late night)	15	0.10	Nu. 0.10	0.10	Yes
3.	SIM of Operator 1 (BTL)	SIM of Operator 2(TICL)	Off-net	12:32	30	0.45	Nu. 0.45	0.45	Yes
4.	SIM of Operator 2 (TICL)	SIM of Operator 2 (TICL)	On-net	12:32	43	0.30	Nu. 0.30	0.30	Yes
5.	SIM of Operator 2(TICL)	SIM of Operator 1 (BTL)	Off-net	12:30 pm	19	0.30	Nu. 0.30	0.30	Yes
6.	SIM of Operator 1(BTL)	SIM of Operator 1 (BTL)	On-net	7:49 (standard)	21	0.40	Nu. 0.40	0.40	Yes

7.	SIM of Operator 1 (BTL)	SIM of Operator 1 (BTL)	On-net	00:45 am (late night)	70	0.10	Nu.0.10	0.10	Yes
8.	SIM of Operator 1(BTL)	SIM of Operator 2 (TICL)	Off-net	19:45 pm	52	0.90	Nu.0.45	0.45	Yes
9.	SIM of Operator 2 (TICL)	SIM of Operator 2 (TICL)	On-net	22:30	31	0.30	Nu. 0.30	0.30	Yes
10.	SIM of Operator 2(TICL)	SIM of Operator 1 (BTL)	Off-net	21:35	7	0.30	Nu. 0.30	0.30	Yes

(iii) Mobile Data Charges Monitoring Test Results

The test results for voice call monitoring are mentioned in the table below:

Sl. No	Service providers	Total Package Data Allocated	Time of Package Data Allocated	Time of Package Data Consumed Fully	Data volume consumed as per the App/Mobile device	Is the data package allocated as per the consumed data?	Difference in data volume not provided	Percentage of data volume shortage	Remarks
1.	TICL	Nu. 49 package of 660 MB	2023/07/25 08:44	2023/07/25 16:20	660 MB	Yes	0 MB	0	Provided within correct data volume
2.	TICL	Nu. 99 package of 1330 MB	2023/07/29 19:58	2023/07/31 21:08	1330 MB	Yes	0 MB	0	Provided within correct data volume
3.	TICL	Nu. 199 package of 2720 MB	2023/09/06 17:14	2023/09/09 21:47	2720 MB	Yes	0 MB	0	Provided with correct data volume
4.	TICL	Nu. 299 package of 4500 MB	2023/09/03 17:22	2023/09/19 10:45	4500 MB	Yes	0 MB	0	Provided with correct data volume

5.	TICL	Nu. 777 package of 25975 MB	2023/08/03 20:38	2023/08/19 09:53	25975 MB	Yes	0 MB	0	Provide with correct data volume
6.	TICL	Nu. 999 package of 37570 MB	2023/08/08 08:59	2023/08/24 14:49	37570 MB	Yes	0 MB	0	Provide with correct data volume
7.	BTL	Nu. 19 package of 260 MB	2023/09/20 17:03	2023/09/21 17:42	260 MB	Yes	0 MB	0	Provided within correct data volume
8.	BTL	Nu. 39 package of 520 MB	2023/09/23 17:24	2023/09/24 12:32	520 MB	Yes	0 MB	0	Provided within correct data volume
9.	BTL	Nu. 49 package of 660 MB	2023/08/30 07:51	2023/08/30 10:10	660 MB	Yes	0 MB	0	Provided within correct data volume
10.	BTL	Nu. 99 package of 1330 MB	2023/09/20 19:26	2023/09/22 22:27	1330 MB	Yes	0 MB	0	Provided within correct data volume
11.	BTL	Nu. 299 package of 4608 MB	2023/09/19 23:51	2023/09/22 11:46	4608 MB	Yes	0 MB	0	Provided within correct data volume
12.	BTL	Nu. 699 package of 22937.6 MB	2023/09/24 16:30	2023/09/27 04:41	22937.6 MB	Yes	0 MB	0	Provided within correct data volume

6. Conclusion

(i) Voice Call Analysis

The voice call charges for all the standards for both On-net and Off-net, of both the operators, were monitored and analyzed based on charges per unit.

It is found that the voice call charges are implemented by the operators as per the approved tariffs.

(ii) SMS Analysis

The SMS charges for both On-net and Off-net, of both the operators, were monitored and analyzed based on charges per unit.

It is found that the SMS charges are implemented by the operators as per the approved tariffs.

(iii) Mobile Data Monitoring Analysis

a. The following six data packages have been monitored and analyzed for the TICL.

- Nu. 49 package
- Nu. 99 package
- Nu. 199 package
- Nu. 299 package
- Nu. 777 package
- Nu. 999 package

b. The following six data packages have been monitored and analyzed for the BTL

- Nu. 19 package
- Nu. 39 package
- Nu. 49 package
- Nu. 99 package
- Nu. 299 package
- Nu. 699 package

Annexure

The detailed data package system generated reports for each package of both operators are attached in the Annexure.

TICL

1. Data Consumption for Nu. 49 Package 77602797 (TICL)
https://drive.google.com/file/d/1DND8xaDXvIkK9RDKPAGvQB3VxnWGgUMx/view?usp=drive_link
2. Data Consumption for Nu. 99 Package 77299251 (TICL)
https://drive.google.com/file/d/1UlcXar0magFFZ-HeNikuv0Zvv8hXcm4x/view?usp=drive_link
3. Data Consumption for Nu. 199 Package 77269624 (TICL)
https://drive.google.com/file/d/1Gz27EA24IHPxznNPJ7KmnO1vJMsUefqx/view?usp=drive_link
4. Data Consumption for Nu. 299 Package 77451285 (TICL)
https://drive.google.com/file/d/12tJUmr-ba2uv6ezv1XImWleVE0fE7qmU/view?usp=drive_link
5. Data Consumption for Nu. 777 Package 77619572 (TICL)
https://drive.google.com/file/d/1VBLc8f8fb1tYrWRBBX7vUPM4jVVQ0fj/view?usp=drive_link
6. Data Consumption for Nu. 999 Package 77938978 (TICL)
https://drive.google.com/file/d/1MEknAxtQgO5ALP7V9h1_EIFVUqvOGV6T/view?usp=drive_link

BTL

1. Data Consumption for Nu. 19 Package 17818946 (BTL)
https://drive.google.com/file/d/1jGJpvdDq_4CmLm8ryrLXRxiWESWyLoj2/view?usp=drive_link
2. Data Consumption for Nu. 39 Package 17579282 (BTL)
https://drive.google.com/file/d/1Z9ZwecRsiobZtIIHkPOde_yZ7zNCsePY/view?usp=drive_link
3. Data Consumption for Nu. 49 Package 17531522 (BTL)
https://drive.google.com/file/d/1E20WJ_Hetdc6WyxvDmkrqp93Ujep-Hm8/view?usp=drive_link
4. Data Consumption for Nu. 99 Package 17711979 (BTL)
https://drive.google.com/file/d/16Wr04mkrXeKp8dVyK5NxJ3mptHS_vHBo/view?usp=drive_link
5. Data Consumption for Nu. 299 Package 17848140 (BTL)
https://drive.google.com/file/d/1mLxZyPnlth4YX5vINhcUii7oHcOcPTqM/view?usp=drive_link
6. Data Consumption for Nu. 699 Package 16908521 (BTL)
https://drive.google.com/file/d/1ETE8M0j75KnPw922mddSUcVME9u1eafJ/view?usp=drive_link