

འབྲུག་འབར་ཏ་དོན་འབར་གྱི་ཡུལ་ལྷན་ཁང་གི་འབར་གྱི་ཡུལ་ལྷན་དབང་འཛིན།

**Bhutan InfoComm and Media Authority**

**Royal Government of Bhutan**



**Quarterly Report on Monitoring of ISPs and Internet Leased**

**Line Service**

**(October-December, 2024)**

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## **1. Background**

In the age of digital connectivity, where the internet serves as the backbone of modern society, the reliability and efficiency of internet service provision stand as cornerstones of progress. At the forefront are Internet Service Providers (ISPs) and Internet Leased Lines (ILLs), the entities responsible for facilitating seamless connectivity between users and the vast array of online resources.

Internet Leased Lines (ILLs) are specialized services provided by ISPs that offer dedicated internet connections. Unlike standard broadband services shared among multiple users, leased lines provide a private connection that ensures faster speeds and enhanced reliability. This is particularly beneficial for families or businesses that require consistent and high-quality internet access without the interruptions or slowdowns typical of shared connections.

Despite advancements in mobile connectivity, concerns regarding the quality of mobile broadband persist, especially for prolonged use in communication and education. In contrast, ILLs present a viable solution by delivering stable and efficient internet service, potentially reducing costs for families by eliminating the need for multiple mobile data subscriptions.

The Authority has been facilitating and encouraging the general public to consider using Internet leased line services with dedicated speed without data limitation services for reliability, scalability, and affordability. The Authority has developed Standards for Fixed and Mobile Broadband Quality of Services. The Authority carries out monitoring visits to the various Dzongkhags as and when required. The report contains the report from the field visit outlining the key activities carried out by the Authority for October-December, 2024 to enhance the effective and efficient delivery of internet service in the country.

## 2. ISP verifications and Monitoring of Internet Leased Line Services

### 2.1 Thimphu

#### 2.1.a. Background

The InfoComm and Infrastructure division team has monitored the internet leased line service to ensure a reliable quality of service for the ISPs located in Thimphu.

The parameters adopted to monitor the Leased line connection were:

1. Throughput(Internet speed) using speed test app
2. Latency (Ping RTT test) for Google, Youtube and Facebook sites for Fixed data services (leased line services).
3. Packet Loss (Ping test) for Google, Youtube and Facebook sites for Fixed data services (leased line services).

#### 2.1.b. Observation

The table below shows the user's throughput of respective ILL service providers.

*Table 1: Customer details with bandwidth subscription and its throughput*

Sl.No	ISP	Customer	Bandwidth Subscribed(Mbps )	User's throughput	
				Download(Mbps )	Upload(Mbps )
1	Tashicell	Sangay Sales	2	2.45	2.34
		Sangay Enterprise	4	3.34	1.64
2	Bitcom	Norgaling	10	10	8.25
3	Nano	Hotel Darla	12	1.75	10.56
4	Digitech	KSPD Trading	2	1.79	1.91
		Pema Yuden	4	3.85	3.63

5	Telnet	S. T Tshongkang	2	2.98	1.29
6	Bhutan Telecom	The Cozy Corner	8	6.48	6.32

2. Latency (Ping RTT test) for Google, and Facebook sites for Fixed data services (leased line services).

*Table 2: Google Ping Round Trip Time Test (Latency)*

Sl.No	Operator	Customer	Average RTT	Threshold( As per Standards for QoS fixed)	Remarks
1	Tashicell	Sangay sales	128ms	<=150ms	In range
		Sangay Enterprise	<b>153ms</b>	<=150ms	Not In range
2	Bhutan Telcom Ltd.	Cozy Corner	96ms	<=150ms	In range
3	Bitcom	Norgaling	66ms	<=150ms	In range
4	Digitech	KSPD Trading	<b>156ms</b>	<=150ms	Not In Range
		Pema Yuden	<b>201ms</b>	<=150ms	Not In range
5	Telnet	S.T Tshongkang	133ms	<=150ms	In range
6	NANO	Hotel Darla	88ms	<=150ms	In range

*Table 3: Facebook Ping Round Trip Time test(latency)*

Sl.No	Operator	Location	Average RTT	Threshold( As per Standards for QoS fixed)	Remarks
1	Tashicell	Sangay Sales	117ms	<=150ms	In Range
		Sangay Enterprise	237ms	<=150ms	Not In range
2	Bhutan Telecom Ltd.	Cozy Corner	95ms	<=150ms	In Range
3	Bitcom	Norgaling	107ms	<=150ms	In Range
4	Digitech	KSPD Trading	78ms	<=150ms	In Range
		Pema Yuden	91ms	<=150ms	In Range
5	Telnet	S.T Tshongkang	140ms	<=150ms	In range
6	NANO	Hotel Darla	94ms	<=150ms	In range

3. Packet Loss (Ping test) for Google, and Facebook sites for Fixed data services (leased line services).

*Table 4: Google Ping Test (Packet Loss)*

Sl.No	Operator	Location	Average RTT	Threshold( As per Standards for QoS fixed)	Remarks
1	Tashicell	Sangay sales	0%	<=2%	In Range

		Sangay Enterprise	0%	<=2%	In Range
2	Bhutan Telecom Ltd.	Cozy Corner	20%	<=2%	Not in Range
3	Bitcom	Norgaling	0%	<=2%	In Range
4	Digitech	KSPD Trading	6%	<=2%	Not In Range
		Pema Yuden	6%	<=2%	Not In range
5	Telnet	S.T Tshongkang	0%	<=2%	In Range
6	NANO	Hotel Darla	20%	<=2%	Not In range

*Table 5: Facebook Ping Test (Packet Loss)*

Sl.No	Operator	Location	Average RTT	Threshold( As per Standards for QoS fixed)	Remarks
1	Tashicell	Sangay sales	0%	<=2%	In Range
		Sangay Enterprise	0%	<=2%	In Range
2	Bhutan Telecom Ltd.	Cozy Corner	6%	<=2%	Not In Range
3	Bitcom	Norgaling	0%	<=2%	In Range
4	Digitech	KSPD Trading	0%	<=2%	In Range

		Pema Yuden	0%	<=2%	In Range
5	Telnet	S.T Tshongkang	0%	<=2%	In Range
6	NANO	Hotel Darla	0%	<=2%	In Range

### 2.1.c Actions taken

The Authority has issued a letter concerning the optimization of QoS for internet leased lines provided by ISPs that do not meet the QoS standards set by the Authority. Additionally, the ISPs may be required to submit a compliance report.

### 3. License Issued

The authority has been issuing the ISP license as per the Rules and regulations for licensing and Operations of ISP 2021. To date, there are a total of 2 ISPs providing ICT facilities in the Country. During the period of Oct-Dec, the following ISP setup was established in various dzongkhags with the issuance of a License from the Authority.

Sl.no	Name of ISP	Area of Operation	License No
1	G-star	Gelephu	605000031
2	E-Net	Paro	605000032

#### **4. Customer Complaint Filings**

For the fourth quarter reporting the division has not received any ISP complaints related to the Internet leased line service.

#### **5. Recommendations/Way forward**

1. The Authority will take up the monitoring, verification, and inspections of ISP and ILL services regularly by incorporating the standards for fixed and mobile broadband rules.
2. The Authority will continuously take complaints issues regarding the QoS of ILL from citizens to facilitate effective and efficient service delivery to help connect at all times to come.
3. Compile and publish the quarterly report for the Internet Service Provider to facilitate the Authority in taking proper regulatory measures for improving the Quality of Services of Internet services.