

**GOVERNMENT OF INDIA
MINISTRY OF COMMUNICATIONS
DEPARTMENT OF TELECOMMUNICATIONS**

**LOK SABHA
UNSTARRED QUESTION NO. 865
TO BE ANSWERED ON 7TH FEBRUARY, 2024**

6G Technology

**865. SHRI CHANDRA PRAKASH JOSHI:
SHRI DILESHWAR KAMAIT:**

Will the Minister of COMMUNICATIONS be pleased to state:

- (a) the details of the measures taken by the Government to establish itself as a leading contributor to the development and manufacturing of 6G technology by 2030;
- (b) whether initiative was taken by the Government for the expansion and timely deployment of 5G network facilities in the country;
- (c) the details of the current status of 5G cell tower fiberization, State/UT-wise;
- (d) the progress made so far in the mapping of telecom assets on the PM Gati Shakti-National Master Plan (NMP) platform; and
- (e) the details of districts or areas in the country where 3G and 4G services are not available at present including the district and State/UT-wise?

ANSWER

**MINISTER OF STATE FOR COMMUNICATIONS
(SHRI DEVUSINH CHAUHAN)**

- (a) Government has released Bharat 6G Vision Document with the following objectives:
 - i. Design, develop and deploy 6G network to provide ubiquitous, intelligent and secure connectivity for high quality living experience.
 - ii. Affordability, Sustainability and Ubiquity which align with the national Vision of Atmanirbhar Bharat that seeks to empower every Indian to become self- reliant.

In order to take a lead in 6G technology, the Government has constituted Bharat 6G Mission and Apex Council to lay down the Phase-wise objectives of 6G, suggest the research and innovation pathways to be explored and review the progress of implementation of Bharat 6G Vision from time to time. Further, Bharat 6G Alliance (B6GA), an alliance of domestic industry, academia, national research institutions and standards organizations has been launched to enable India to become a leading global supplier of IP, products and solutions. B6GA has also signed Memorandum of Understanding with NextG Alliance of USA to explore collaboration opportunities on 6G wireless technologies. The Government has also taken following steps to take a lead in development of 5G/ 6G technology by 2030:

- i. Government has launched Telecom Technology Development Fund (TTDF) scheme with 5% of annual collections from Universal Service Obligation Fund for funding research & development of technologies, products, and services. Under TTDF, two proposals for test beds have been approved, viz. 6G THz Testbed through consortium of Society for Applied Microwave Electronics Engineering and Research (SAMEER), IIT Madras, IIT Guwahati and IIT Patna; Advance Optical Communication Test Bed with Consortium Members as IIT Madras, IIT Delhi and other academic institutions.

- ii. Government has also invited proposals from academia/industry (consortium-based), and other bodies engaged in R&D for setting up of “Accelerated Research Lab on 6G” and contribute to the future technologies.
- iii. Government has sanctioned 100 5G and beyond labs at academic institutions across India. This initiative is also a pivotal step for building a 6G – ready academic and start-up ecosystem in the country.
- iv. India has contributed in International Telecommunications Union International Mobile Technology (IMT) 2030 framework, also called 6G by industry for inclusion of 'Ubiquitous Connectivity' as one of the six usage scenarios of 6G and coverage, interoperability and sustainability as capabilities of 6G technology.

(b) 5G services were launched in India on 1st October 2022. Government has taken several initiatives such as making available adequate spectrum, launching PM Gati Shakti Sanchar Portal, reforming and simplifying Standing Advisory Committee on Radio Frequency Allocations (SACFA) clearance procedure, amending the Right of Way (RoW) rules to expedite permissions etc. Within a span of 14 months, more than 4.15 Lakh 5G sites are providing connectivity across 742 districts. This is the fastest roll-out of 5G anywhere in the world.

(c) to (e) 5G BTS are provided with fibre/microwave backhaul as per suitability of the site. As on date, the following Telecom assets have been mapped on PM Gati Shakti National Master Plan platform:

- i. 12 lakh RKM (Route Kilometers) Optical Fiber Cable (OFC) from Public Sector Undertakings (PSUs) and 21,000 km of State OFC,
- ii. 7.69 lakh mobile towers having 27.45 lakh BTSs,
- iii. 1.33 lakh PM-WANI Wi-Fi hotspots,
- iv. 19,488 Proposed Mobile Towers of 4G saturation project,
- v. 3,795 Mobile towers (planned/radiating) of various Universal Service Obligation Fund (USOF) projects and 5 HIP (High Impact Projects).

Telecom connectivity in India has improved significantly in last 10 years, outlined as follows:

	May 2014	Dec 2023
Number of Base Transceiver stations	6.49 Lakh	28 Lakh
Optical fiber laid	10.62 Lakh Km	39 Lakh Km
Internet users	25.15 Cr	88.12 Cr
Cost of data	Rs. 269/ Gb	Rs. 9.94/ Gb
Median internet speed	1.3 Mbps	75.8 Mbps
Gram Panchayats connected under BharatNet	58	2.1 Lakh

To further improve telecom connectivity in the country, Government is implementing various schemes.

- A total of 41,160 mobile towers have been sanctioned with an outlay of Rs. 41,331 Cr to provide 4G connectivity to about 55 thousand villages.
- Scope of BharatNet program has been expanded to connect all inhabited villages with an outlay of 1.88 Lakh Cr.
