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India plays key role in shaping ITU 6G Vision Framework

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Why is in news? India plays key role in shaping ITU 6G Vision Framework

International Telecommunication Union (ITU) has approved the **6G Vision Framework**.

India, through Department of Telecommunications, Ministry of Communications played a key role in framing the Framework.

The Prime Minister of India had released India's 6G Vision "**Bharat 6G Vision**" document on March 23, 2023 which **envisages India to be a front-line contributor in design, development and deployment of 6G technology by 2030**.

Bharat 6G Vision is based on **principles of Affordability, Sustainability and Ubiquity**.

It ensures that India takes its rightful place in the world as a leading supplier of advanced telecom technologies and solutions that are affordable and contribute to the global good.

Thereafter, the efforts of the Department of Telecommunications, Ministry of Communications in prioritising 6G standardisation have **successfully resulted in adoption of Ubiquitous Connectivity, Ubiquitous Intelligence and Sustainability** as key elements of 6G Technology and also enhanced India's position in the International Telecommunication space.

The 6th Generation or 6G Technology has been **named 'IMT 2030' by ITU**, the specialised agency for Information and Communication Technologies of United Nations.

The recommendation of ITU for 6G Framework will **serve as foundation document in 6G research and development** and will pave way for development of 6G Technology worldwide.

Telecommunication Engineering Centre (TEC), the **technical arm of Ministry of Communications** has spearheaded India's standardisation work on this 6G Framework.

The **National Study Group (NSG)**, headed by TEC, has done extensive work in submitting regular Indian contributions towards the development of the ITU 6G framework.

Bharat 6G Mission:

The Bharat 6G Vision Statement is as follows: "**Design, develop and deploy 6G network technologies** that provide ubiquitous, intelligent and secure connectivity for high quality living experience for the world"

6G Vision is based on **principles of Affordability, Sustainability, and Ubiquity**.

The Vision for 6G is **fully aligned with the national Vision of Atmanirbhar Bharat** and will seek to empower every Indian to become Atmanirbhar (self-reliant) in their lives.

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At the same time, it ensures that India takes its rightful place in the world as a leading supplier of advanced telecom technologies and solutions that are affordable and contribute to the global good.

The 6G Vision is thus timed just right for India's Aazadi ka Amrit Kaal.

The Bharat 6G project will be **implemented in two phases** and the government has also **appointed an apex council to oversee the project** and **focus on issues such as** Standardisation, Identification of the spectrum for 6G usage, Create an ecosystem for devices and systems, and Figure out finances for research and development, etc.

In **phase one (from 2023 to 2025)**, support will be provided to explorative ideas, risky pathways and proof-of-concept tests.

Ideas and concepts that show promise and potential for acceptance by the global peer community will be adequately supported to develop them to completion, leading to commercialisation as part of **phase two (from 2025 to 2030)**.

To fund research and innovation on 6G, the document recommended the creation of a corpus of Rs 10,000 crore to facilitate various funding instruments such as grants, loans, VC fund, etc.

To decide on standardisation around 6G and related technologies, the document called for India to take on a greater role in various international bodies such as 3GPP, ITU, IEC, and IEEE.

Objectives:

Facilitate and finance Research and Development, design and development of 6G technologies by Indian Startups/Companies/Research bodies/Universities;

Enable India to become a leading global supplier of IP, products and solutions of affordable 6G telecom solutions;

Deploy 6G technologies to act as a powerful force multiplier for India@2030;

Enable inclusive and significant enhancement in the quality of living experience of citizens in India and across the world.

Bharat 6G Alliance - B6GA:

The Bharat 6G Alliance shall be an **alliance of domestic industry, academia, national research institutions and standards organisations facilitated by the Government**. The B6GA is expected to chart its own course of action based on the Bharat 6G Vision Document and further developments. B6GA will focus on the following:

To help grow 5G Advanced/6G IPs and essential patents from India;

Design and build Indian 5G Advanced/6G products and solutions;

Support and energise Indian participation in 3GPP/ITU;

To help build consortia of Indian Startups and companies;

To facilitate market access for Indian 5G/6G technology products;

Build coalition with like-minded 6G Global Alliances.

6G:

Technically, not in existence today, 6G has been conceived as a **far superior technology than 5G**.

As opposed to 5G, which at its peak can offer internet speeds up to 10 gigabits per second, 6G promises to offer **ultra-low latency with speeds up to 1 terabit per second (100 times faster than 5G)**.

Its application will include remote-controlled factories, constantly communicating self-driven cars and smart wearables taking inputs directly from human senses.

However, since the **majority of 6G supporting communication devices** will be battery-powered and can **have a high carbon footprint**, it will also need to be balanced with sustainability.

