Vision document for rollout of 6G network in India

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In news– The Prime Minister unveiled the Bharat 6G Vision Document and launched the 6G R&D Test Bed recently.

About the vision document-

- **Bharat 6G vision document is prepared by the Technology Innovation Group on 6G (TIG-6G)** that was **constituted in November 2021** with members from various Ministries/Departments, research and development institutions, academia, standardization bodies, Telecom Service Providers and industry to develop a roadmap and action plans for 6G in India.
- **As per the document, India's 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, among other things.
- While, technically, 6G does not exist today, it has been conceived as a far superior technology promising internet speeds up to 100 times faster than 5G.
- **The apex council will facilitate and finance research and development,** design and development of 6G technologies by Indian start-ups, companies, research bodies and universities.
- It will aim to enable India to become a leading global supplier of intellectual property, products and solutions of affordable 6G telecom solutions and identify priority areas for 6G research based on India's competitive advantages.
- **A key focus of the council will be on new technologies**

such as Terahertz communication, radio interfaces, tactile internet, artificial intelligence for connected intelligence, new encoding methods and waveforms chipsets for 6G devices.

- As per the vision document, **6G use cases will include remote-controlled factories, constantly communicating self-driven cars** and smart wearables taking inputs directly from human senses.
- However, while 6G promises growth, it will simultaneously have to be balanced with sustainability since most 6G supporting communication devices will be battery-powered and can have a significant carbon footprint, the document said.
- As part of its 6G mission, India will identify priority areas for research by involving all stakeholders including industry, academia and service providers spanning theoretical and simulation studies, proof-of-concept prototypes and demonstrations and early market interventions through startups, the vision document said.
- **The 6G project is proposed to be implemented in two phases: the first one from 2023 to 2025 and the second one from 2025 to 2030**.
- In phase one, 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, establish their use cases and benefits, and create implementational IPs and testbeds leading to commercialisation as part of phase two.
- The vision document also said that the government will have to explore shared use of spectrum, particularly in the higher frequency bands for 6G.
- A reassessment and rationalisation of congested spectrum bands, and adoption of captive networks for Industry 4.0 and enterprise use cases will also have to be done.

- **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,** fund of funds, etc. for the next 10 years.
- Two tiers of grants are proposed i.e. up to Rs 20 crore to service funding requirements ranging from small to medium and grants above Rs 20 crore for high impact projects.

Note:

- PM formally launched 5G services in October 2022 and said at the time that India should be ready to launch 6G services in the next 10 years.
- As opposed to 5G, which at its peak can offer internet speeds up to 10 Gbps, 6G promises to offer ultra-low latency with speeds up to 1 Tbps.

ITU Area office in India-

- During the same event, PM also inaugurated the new International Telecommunication Union (ITU) Area office & Innovation Centre in India.
- **ITU is the United Nations' specialized agency for information and communication technologies (ICTs).**
- Headquartered in Geneva, ITU has a network of field offices, regional Offices and area offices.

- **India signed a Host Country Agreement in March 2022 with ITU for the establishment of Area Office.**

- The Area Office in India is also envisaged to have an Innovation Centre embedded in it making it unique among other area offices of ITU.
- **The Area Office, which is fully funded by India**, is located on the second floor of the Centre for Development of Telematics (C-DoT) building at Mehrauli New Delhi.

- **It will serve India, Nepal, Bhutan, Bangladesh, Sri Lanka, Maldives, Afghanistan and Iran, enhancing coordination among nations and fostering mutually beneficial economic cooperation in the region.**

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