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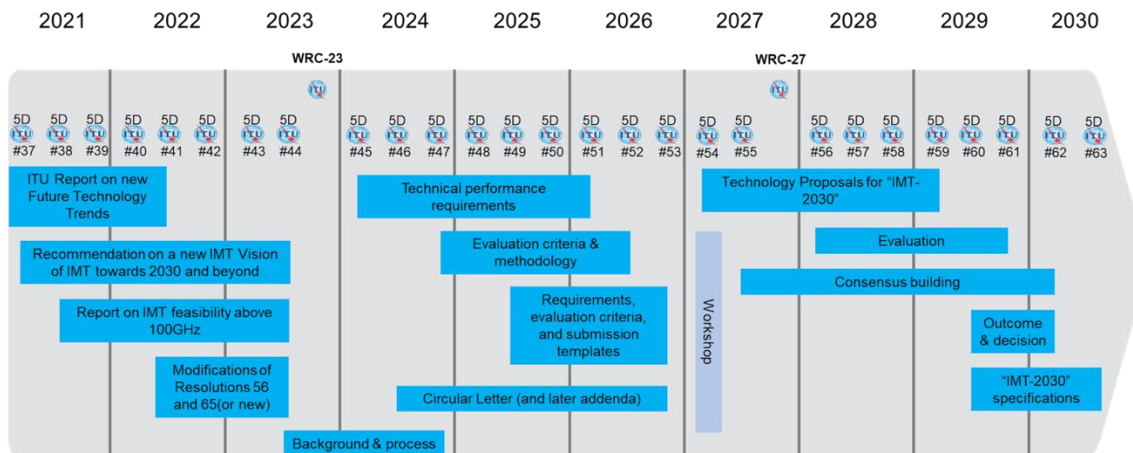
January 16, 2023

**Shri Ashwini Vaishnaw,**  
**Hon'ble Minister of Communications and IT**  
**Sanchar Bhawan**  
**New Delhi-110001**

**ITU-APT/L/2023-24/472**

Dear Sir,

Greetings from the ITU-APT Foundation of India (IAFI) a non-profit, non-political, registered society in India. With 5G commercial networks now getting deployed worldwide and further expansion on the way, the research and development towards 6G is also gaining momentum. According to the ITU-R WP5D, the UN body responsible for standardizing the Radio Interface for all versions of IMT from 3G to 5G (IMT-2000, IMT-advanced and IMT-2020), it will take about 6-7 years from now - until 2030 to commercialize the next generation mobile wireless technology.



Note 1: Meeting 5D#59 will additionally organize a workshop involving the Proponents and registered IEGs to support the evaluation process  
Note 2: While not expected to change, details may be adjusted if warranted. Content of deliverables to be defined by responsible WP 5D groups

We would like to congratulate you and the government for creating necessary environment for ensuring that 5G consumer broadband services get rolled out in India at a lightning pace. It is expected that the usage of this new generation of technology will further expand into immersive, critical, and massive communications, offering new capabilities beyond communications with omnipresent connectivity, sustainability, efficiency and extending services range to include non-terrestrial applications. With the expansion of usage scenarios towards immersive ubiquitous communication, AI, and extreme communications, 6G system design would require extensive research into the design and development of new technologies, products and services.

IAFI has been building momentum with other industry stakeholders to pave the way from current innovation on 5G for enterprise and consumers to continue into 6G, where the new ITU Vision Recommendation is a key document for the continued work on IMT-2030. Late December 2022, I met with Shri K. Rajaraman, Secretary DoT and made a presentation as a part of the outcome of our recent spectrum conference, the 2<sup>nd</sup> India Spectrum Management Conference that was inaugurated by Hon'ble Minister of State for Communications, Shri Devusinh Chauhan who also highlighted the global and Indian efforts in 6G research and standardization.

Given that India missed the trillion-dollar market for the networks and devices in the first four generations of mobile technology, it is heartening to note that the country is already starting to take baby steps in the global 5G market – in devices, networks, and software. However, looking at the speed with which the developments are taking place in the 6G design and development of globally harmonized standards development, it is our feeling that we are already trailing behind the curve on 6G. It is our reading that most global conferences on 6G research credit 6G work going on in China, Korea, Japan, EU, and USA (see enclosed summary on their investments and projects). After attending and addressing a large number of global 6G conferences around the world during the last one year, we do not see any recognition of the Indian 6G efforts. We believe that India is again going to miss the bus.

In this connection, I would propose the following:

1. Creation of a national 6G mission with a fixed budget, time plan, office and mandate, website, logo to drive and fund research into 6G technology, regulations, standards, and products. This should preferably be outside the incumbent organizations and institutions (DOT, TEC, TRAI, MEITY, CDOT, TSDSI, IITs, IISC, S&T, etc.)
2. Setting up of a national steering committee involving the Industry and the R&D institutions along with the relevant regulatory authorities to guide and support the national mission.
3. Active participation of India in the Global/ITU/3GPP work on 6G.

The IAFI will be eager to extend our cooperation to you, with our members willing to share their extensive experience and expertise in developing technology & standards help us in making quantifiable progress. I look forward to hearing from you.

With Regards,

**Bharat B Bhatia,**  
**President, ITU-APT Foundation of India (IAFI)**  
**Vice Chairman, Asia Pacific, World Wireless Research Forum(WWRF)**  
**Chairman, SWG Specific Applications, WP5D, ITU-R**

## **6G Research investments in other countries**

**USA:** 6G funding and research projects in the United States (US) have been gaining momentum in recent years as the country looks to become a leader in the field of telecommunications. The US government has committed significant resources to the development of 6G technology, with the National Science Foundation (NSF) and National Institutes of Standards and Technology (NIST) announcing a budget of \$1 billion for 6G research and development. Several research institutions and companies in the US are actively involved in 6G research and development. For example, the Massachusetts Institute of Technology (MIT) is working on developing a range of 6G technologies, including new modulation schemes and beamforming techniques. Additionally, companies such as AT&T, Verizon, and Qualcomm are also investing in 6G research.

**European Union (EU):** The EU has committed significant resources to the development of 6G technology, with the European Commission announcing a budget of €1 billion (approximately USD 1.2 billion) for 6G research and development through Horizon Europe program. Several research institutions and companies in the EU are actively involved in 6G research and development. For example, the European Union Agency for the Cooperation of Energy Regulators (ACER) is working on developing a range of 6G technologies, including new modulation schemes and beamforming techniques. Additionally, Nokia, Ericsson, and Deutsche Telekom are also investing in 6G research, with all three companies working on developing new technologies such as ultra-massive MIMO and terahertz communications.

**China:** The Chinese government has committed significant resources to the development of 6G technology, with the Ministry of Industry and Information Technology (MIIT) announcing a budget of CNY 5 billion (approximately USD 756 million) for 6G research and development. This funding is being used to support a wide range of projects, including the development of new technologies such as ultra-high-speed communications, ultra-low latency, and ultra-high reliability. Several research institutions and companies in China are actively involved in 6G research and development. For example, the China Academy of Information and Communications Technology (CAICT) is working on developing a range of 6G technologies, including new modulation schemes and beamforming techniques. Additionally, Huawei, ZTE, and China Mobile are also investing in 6G research, with all three companies working on developing new technologies such as ultra-massive MIMO and terahertz communications.

**South Korea:** The South Korean government has committed significant resources to the development of 6G technology, with the Ministry of Science and ICT (MSIT) announcing a budget of KRW 1.9 trillion (approximately USD 1.6 billion) for 6G research and development. Several research institutions and companies in South

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Korea are actively involved in 6G research and development. For example, the Electronics and Telecommunications Research Institute (ETRI) is working on developing a range of 6G technologies, including new modulation schemes and beamforming techniques. Additionally, SK Telecom and Samsung are also investing in 6G research, with both companies working on developing new technologies such as ultra-massive MIMO and terahertz communications.