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<u>For Immediate Release</u>

<u>**Telecom Regulatory Authority of India**</u>

TRAI releases Consultation Paper on " Leveraging Artificial Intelligence and Big Data in Telecommunication Sector"

New Delhi, 05th August, 2022- The Telecom Regulatory Authority of India (TRAI) has today released a Consultation Paper on **"Leveraging Artificial Intelligence and Big Data in Telecommunication Sector"**.

2.   The Department of Telecommunications (DoT), through its letter dated 6th June 2019, has requested TRAI, under section 11(1)(a) of the TRAI Act of 1997, to furnish recommendations on the provision no. 2.2(g) of NDCP-2018 i.e. *"Leveraging Artificial Intelligence and Big Data in a synchronised and effective manner to enhance the overall quality of service, spectrum management, network security and reliability"*.

3.   The consultation paper presents use cases of Artificial Intelligence (AI) and Big Data (BD) in the areas such as Quality of Service (QoS), Spectrum Management and Network Security. The paper also presents examples of AI and BD already deployed in the telecom networks by the operators in India and other jurisdictions. Use cases which are under consideration by the telecom operators have also been discussed in the paper.

4.   It has been noted that 5G and beyond networks will provide a plethora of data that may be useful for telecom as well as other sectors. Edge Computing in the 5G era may offer opportunities to other sectors to train, validate and run their AI models in the telecom networks. 5G and beyond networks may also offer privacy preserving architectures to adopt and accelerate AI and BD in other sectors.

5.	The Authority also took view of developments happening in the 6G and possibilities emerging in the 6G era to leverage AI and BD in telecom as well as other sectors where telecom can play an important and crucial role.

6.	In view of the above, the Authority decided to widen the scope of consultation and also cover areas where 5G and beyond networks may enhance capabilities of other sectors to make use of AI and BD.

7.	The paper covers opportunities and risks in adoption of AI and BD such as unethical use, bias in data and algorithms, privacy, model instability, regulatory and legal non-compliance. Ways and mechanisms to mitigate risks have also been covered. It also suggests managing risk as a design principle.

8.	For AI to function, data is essential. The paper lists out the constraints in availability and accessibility of data. Another challenge for AI is the availability of AI specific infrastructure. Adequate availability of skilled manpower in AI is also a constraint in adoption of AI. If privacy concerns are not addressed and trust is not instilled among the users then it may become one of the biggest concerns in the adoption of AI. The paper delibrates various privacy concerns and its impact on developing intelligent solutions.

9.	Finally the paper identifies and presents various solutions and initiatives that may be taken to address the risks and concerns. It also suggests ways to overcome constraints for faster adoption of AI. Latest developments in AI space were also noted which may be very useful to work in a multi-domain, multi-vendor and multi-AI model environment. The paper presents ways to adopt federated learning to have a learning mechanism which doesn't require gathering data at a central level. The paper also presents a set of latest practices such as MLOps that may help to achieve in deploying and maintaining ML models in production reliably and efficiently. However, there may be interoperability and compatibility issues because of fragmentation across the MLOps pipeline and these issues may be required to be addressed. Various other latest developments in AI such as TinyML, AutoML have also been discussed to accelerate the adoption of AI. The paper also suggests developing an ecosystem for experimenters to test and

demonstrate their innovative AI products. Such an ecosystem may also adopt design-thinking to take care of real requirements of end users in order to improve chances of success of developed solutions. Such an ecosystem may also provide insights about possible new business models.

10.   The paper also cites the idea of an Operator Platform in future networks that may serve as an access point to external application providers for accessing network and service capabilities. Operator platform concept may play a key role in fostering the development of new services and solutions that make full use of 5G capabilities. Such a platform may also provide capabilities to operators to federate and offer edge computing as a unified service. With increased digital interactions, this concept may also enable framing data-driven public policies. In order to extract full value of this concept, there may be a need to conduct experiments with the involvement of relevant stakeholders.

11.   This consultation paper seeks inputs from the stakeholders on various issues related to leveraging AI and BD in the telecom sector and facilitating other sectors. The paper is presented on TRAI's website www.trai.gov.in. Written comments on the issues raised in the Consultation Paper are invited from the stakeholders by 16th September 2022 and counter-comments by 30th September 2022.

12.   The comments and counter-comments may be sent, preferably in electronic form to, Shri Asit Kadayan, Advisor (QoS) Telecom Regulatory Authority of India, on email: advqos@trai.gov.in. For any clarification/information, Shri Asit Kadayan, Advisor (Quality of Service) may be contacted at Tel. No: +91-11-2323-0404, Fax: +91-11-2321-3036.

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