



18 June 2026

**Shri Akhilesh Kumar Trivedi,
Advisor (Networks, Spectrum and Licensing),
Telecom Regulatory Authority of India, Tower F,
NBCC World Trade Centre,
Nauroji Nagar,
New Delhi-110029**

Subject: Tata Communications Limited's Counter Response to TRAI Consultation on the Regulatory Framework for Vehicle-to-Everything (V2X) Communication

Dear Sir,

This is with reference to the TRAI consultation dated 30-04-2026 titled, "**Regulatory Framework for Vehicle-to-Everything (V2X) Communication**".

In this regard, please find enclosed herewith Tata Communication Limited's counter comments your kind consideration as **Annexure**.

We earnestly request TRAI to kindly consider our submission while finalizing the Recommendations on the same. We would be happy to provide any additional information, if required.

Thanking You

Yours Sincerely,

**Alka Selot Asthana
Global Head - Regulatory
Tata Communications Limited**

Encl: as above

TATA COMMUNICATIONS

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**Tata Communications Ltd.'s Counter Comments on TRAI Consultation paper on
"Regulatory Framework for Vehicle-to-Everything (V2X) Communication"**

At the outset, we thank the Authority for providing us the opportunity to submit our counter comments on the TRAI Consultation paper on "**Regulatory Framework for Vehicle-to-Everything (V2X) Communication**". V2X is not merely an incremental advancement in telecommunications; it represents a foundational layer for the convergence of transportation, connectivity, safety, and digital intelligence. The timeliness of this initiative provides India with a unique opportunity to define the architecture of its intelligent mobility ecosystem proactively, drawing on global learnings while aligning with national priorities for economic growth, public safety, and technological leadership. The TRAI V2X consultation is, fundamentally, a decision about the kind of mobility nation India aspires to become. While issues such as spectrum, authorisation, certification, and security are critical, they serve a larger objective: creating an intelligent transportation ecosystem that is open, innovative, globally competitive, and safe for all road users. With the right policy choices and regulatory decisions, India can emerge as a global leader in intelligent mobility. We reiterate that this consultation is the starting point of that journey.

In the light of the above context, Tata Communications counter comments are as below.

1. Some of the stakeholders have stated that creating a standalone authorisation category for C-V2X is unnecessary and the scope of the current Access Service license framework can be extended to include V2X services. We strongly believe that V2X is not merely an enabling technology—it is the communications backbone of India's emerging intelligent transportation ecosystem. India's V2X framework should be conceived not as a standalone telecommunications initiative, but as the foundational layer of a broader Intelligent Transportation System (ITS) ecosystem that integrates mobility, infrastructure, safety, and urban digital systems. The opportunity extends across intelligent freight corridors, AI-enabled traffic optimization, emergency response integration, multimodal transport, and smart city platforms, with India's commercial vehicle and logistics sector presenting the most immediate and scalable deployment pathway. Applying legacy licensing constructs to V2I services would be misaligned with the technological and commercial realities of this sector.

Our Recommendation: Tata Communications reiterates that, in the event a separate V2I authorisation framework is introduced, it must be fundamentally distinct from legacy telecom licensing regimes. The connected mobility ecosystem as it exists today in 2026 and is expected to evolve further, is structurally and functionally different from the traditional mobile telephony market of the early 2000s. Therefore, any such framework must be expressly designed to be light-touch (akin to M2MSP Registration framework), technology-neutral, and non-discriminatory in its applicability.

2. Few stakeholders have suggested that V2N connectivity should be recognised as a fundamental requirement for all V2X deployments in India. Integrating V2X services within the Access Service framework will promote seamless interoperability at a national level and ensure secure communications through licensed networks. We strongly object to it and restricting this layer to

traditional telecom licensees would create unjustified entry barriers, stifle innovation, and hinder the development of a competitive and interoperable V2I ecosystem.

Our Recommendation: The V2I authorisation framework should explicitly enable participation beyond Mobile Network Operators (MNOs), including but not limited to automotive OEMs, digital orchestration providers, cloud-native mobility platforms, and enterprise mobility operators. In particular, the orchestration layer—comprising over-the-air (OTA) lifecycle management, AI-driven mobility services, data analytics platforms, and software-defined vehicle functionalities—must remain open and contestable. A progressive regulatory approach that recognises the separation between connectivity provision and service orchestration is therefore essential to ensure scalability, innovation, and alignment with global best practices in connected mobility.

3. We strongly oppose the view that technology neutrality at early stage may lead to fragmentation of the ecosystem and could hinder interoperability across manufacturers. We are of view that no specific technology should be mandated for the implementation of C-V2X in India.

Our Recommendation: A technology-neutral regulatory framework should be adopted to enable flexibility, innovation, and future-readiness of the connected mobility ecosystem.

4. Some of the stakeholders have suggested that LTE-CV2X should be adopted as the baseline technology during the initial phase, with a gradual transition to a technology-neutral environment once market and ecosystem maturity is achieved. In parallel, the regulatory framework should establish a defined and time-bound roadmap for migration to NR-V2X, aligned with advancements in the automotive sector and evolving spectrum availability. We do not support prescription of specific technology at this stage. The V2X ecosystem is rapidly evolving, with multiple competing and complementary technologies such as LTE-based C-V2X, NR (5G)-based C-V2X, and other short-range communication protocols. We should let the technological growth remain market and business driven.

Our Recommendation: A technology-neutral approach supporting C V2X, hybrid, satellite and future technologies ensures that the most efficient and scalable solutions emerge organically based on market dynamics, performance requirements, and use-case maturity. It is also suggested that rather than prescribing specific technologies, the regulator should define:

- a. Performance-based criteria (e.g., latency, reliability, coverage, scalability);
 - b. Use-case classifications (e.g., safety-critical vs non-safety applications);
 - c. Minimum Quality of Service (QoS) standards;
 - d. Security and data protection requirements.
5. Some stakeholders have suggested that all Roadside Units deployed across the country should be subject to mandatory MTCTE certification. These requirements must be aligned with internationally recognised standards, including 3GPP specifications and relevant ITS frameworks such as ETSI coexistence norms, to ensure consistent performance and protection of safety-critical communications. We are of the considered view that RSUs and OBUs should not be mandatorily brought under the MTCTE framework in its current form, as these devices are part of a heterogeneous, multi-layered V2X ecosystem and are not purely telecom equipment in the traditional sense.

Our Recommendation: India should adopt a harmonised, standards-driven, multi-regulatory compliance framework, ensuring that EMI/EMC, safety, technical, and security requirements are effectively met while preserving flexibility, innovation, and scalability in the V2X ecosystem. Therefore, Tata Communications is of the considered view that RSUs and OBUs should not be mandatorily brought under the MTCTE framework in its current form, as these devices are part of a heterogeneous, multi-layered V2X ecosystem and are not purely telecom equipment in the traditional sense.

6. Some stakeholders have suggested that spectrum should be assigned only through auctions to access service providers and to authorized V2I entities, in case the authorization is implemented. We believe that India should adopt a flexible spectrum regime that supports both licensed and shared access models, with specific consideration for intelligent freight corridors, which represent the most immediate and high-impact use case for large-scale V2X deployment. Alignment with internationally harmonised spectrum bands and standards will be critical to ensuring interoperability with globally sourced vehicles, roadside infrastructure, and communication equipment, while reducing deployment costs and accelerating ecosystem development.

Our Recommendation: The regulatory framework for spectrum assignment for V2I services should be technology-neutral, shared, and light-touch, reflecting the public-interest character of connected mobility, with a strong emphasis on safety, efficiency, and optimal spectrum utilisation.

Shared and non-exclusive spectrum access can facilitate the participation of multiple authorised entities within the same geographic area, minimising spectrum fragmentation while promoting competition, interoperability, and innovation. Such a regime should be supported by robust, standards-based interference management frameworks—including congestion control mechanisms, coexistence protocols, dynamic coordination techniques, and, where appropriate, geolocation-based spectrum management tools. These approaches are preferable to overly prescriptive technical restrictions, such as fixed separation distances or rigid antenna deployment requirements, which may unnecessarily constrain network performance and technological advancement.