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**Advisor (BB&PA),**  
**Telecom Regulatory Authority of India**  
**Mahanagar Doorsanchar Bhawan**  
**Jawahar Lal Nehru Marg**  
**New Delhi – 110 002**

**Subject: Tata Communications Ltd. response to TRAI Consultation Paper on 'Use of Street Furniture for Small Cell and Aerial Fiber Deployment'**

Dear Sir,

This is with reference to the TRAI Consultation Paper dated 23.03.2022 on 'Use of Street Furniture for Small Cell and Aerial Fiber Deployment.'

In this regard, please find enclosed herewith Tata Communications Limited's response to the Consultation Paper for your kind perusal.

We request you to kindly take on record our response and consider the same while finalizing the recommendations.

Thanking You,  
Yours Sincerely,

**For Tata Communications Limited,**

**Praveen Sharma**  
**Authorized Signatory**

Enclosure: As mentioned above

**TATA COMMUNICATIONS**

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## Tata Communications Limited's response to TRAI Consultation Paper on "Use of street furniture for small cell and aerial fiber deployment."

### Preamble:

At the outset, we thank the Authority for providing us an opportunity to share our comments/inputs on this important paper considering vital role of street furniture and arrangement of power and backhaul, infrastructure sharing etc. for a favourable policy framework to support in evolving 5G ecosystem, ariel OFC installation and IoT fabric. This consultation paper has been issued on an apt time wherein Government is in final stage of announcing spectrum auction which will mainly be for 5G deployment. Therefore, a positive outcome will be critical in defining the policy framework for identifying the suitable street furniture based on availability of backhaul and power, deployment heights, load bearing capabilities of street furniture for mounting suitable equipment, scalability, and concerns related to local approvals, and would support licensed service providers in the deployment of network, not only in case of 5G, but also as an ISP and LoRaWAN network connectivity provider.

Street furniture like utility poles, billboards, lamp posts, traffic signals, and public structures like gazebos, bus stops etc. provide utility services to city dwellers but with little or no change, they can also be utilized to mount small cells and aerial fibers for providing telecom services as well. Street furniture are under various public and private authorities that have administrative jurisdictions in municipal bodies, smart city administrations, government departments, railways, airports, ports and metro train systems, stadia etc. Granting access to street furniture by these controlling authorities could remove a significant hurdle in 5G small cell deployment in the country. The use of public street furniture will obviate the need to have greenfield deployment of towers or poles for small cells and fiber thus bringing down the capital expenditure and time involved for rolling out the networks and services. This sharing of infrastructure amongst various entities should also be in sync with PM Gati Shakti initiative which is currently in progress.

RoW is an important element and key enabler for digital mission of the Government of India however it is presently proved to be one of the major impediments in seamless growth and governance of critical telecom infrastructure in the country. Therefore, there is an immense need for implementation of robust and uniform RoW policy across all the States / UTs with the single window clearance portal for processing of all RoW permission applications to bring transparency and predictability. In this regard, sincere efforts have been made by the Government by way of forthcoming policy guidelines on RoW which is currently under discussion with Industry. The aim of this draft policy is to address the policy gaps which hitherto remained unaddressed in the Right of Way Rules, 2016 besides addressing 5G infrastructure requirements. With 5G likely to be launched by the end of this year, the Government has shown a proactive approach by addressing the infrastructure and Right of Way requirements for the technology evolution, the proactive approach adopted by the Government is very encouraging.

In view of above developments, Tata Communications Ltd. is hereby submitting its inputs/comments on the issues raised in the Consultation Paper:

## Issue wise response:

**Q.1: Is there a requirement for any modification in existing RoW Rules as notified by DoT to accommodate small cell deployment on street furniture? If yes, please provide the changes required.**

### Tata Communications Response:

RoW is an important element and key enabler for digital mission of the Government of India and it is imperative that all States / UTs should implement a Indian Telegraph ROW Rules 2016 as amended from time to time in a true manner so that uniform RoW policy can be enforced across the country. However, charging exorbitant RoW charges or restoration charges by several municipalities across the country and inordinate delays in granting ROW permission are significant issue. State and Municipal bodies treat RoW as a “cash cow” by local bodies and state governments on the assumption of being the State subject. Additionally, there are inordinate delays in granting ROW permission are significant issue in Metros/ Cities like Bangalore (BBMP), Hyderabad (GHMC, HRDCL), Kolkata (KMC, PWD area) & Kerala. For example, in Kerala GO (Government Orders) are for each segment that being applied leading to filing of separate application which is time consuming. Similarly, there is a longer lead time for permissions in authorities, like NHAI, Railways – >6 months.

In this regard, sincere efforts have been made by the Government by way of forthcoming policy guidelines on RoW which is currently under discussion with Industry. The aim of this draft policy is to address the policy gaps which hitherto remained unaddressed in the Right of Way Rules, 2016 besides addressing 5G infrastructure requirements. With 5G likely to be launched by the end of this year, the Government has shown a proactive approach by addressing the infrastructure and Right of Way requirements for the technology evolution, the proactive approach adopted by the Government is very encouraging.

In view of above developments, we suggest following specific provisions to be incorporated to accommodate small cell deployment on street furniture in existing India Telegraph RoW Rules, 2016 as amended from time to time:

- Wherever it is not feasible to lay underground fiber, permission should be available to lay pole-based structured Aerial fiber deployments as a part of street furniture especially in geographies where building underground fiber infrastructure is a challenge. For this purpose, Pole infrastructure require to be provided by State and Central Government authorities for deployment of Ariel cable by TSP/IP-1s and written permission should be provided for all street/pole facilities for ariel cabling.
- Usage of Utility/Electricity/City Lighting Provider Poles, street light poles under local bodies to be provided by State and Central Government authorities for the deployment of overhead OFC infrastructure and their permission also need to be monitored through single window clearance portal and this need to be done without any discrimination. These structure poles are as resilient as the underground fibre networks in geographies where building underground

fibre duct is a challenge and hence such poles will enhance the speed of rollout. For all new road construction, a separate channel needs to be kept for ducts of OFC to be laid in future. However, the application fee shall not be exceeding Rs. 1,000 per application.

- For locations where it is not feasible for the Government / Local authority to share the existing street furniture, applicants should be allowed to erect their own poles. Detailed specifications must be defined like max. height, radius, weight etc which can be complied while erecting their own poles by these applicants.
- Usage of pole / street furniture must also be permitted for Unlicensed band Radios for Backhaul and Wi-Fi devices too.
- DoT LSA field units should be empowered to oversee grant of Right of Way permission in the State and would act as a nodal agency to administer ROW permissions by local authorities in the State as well as Central agencies, such as Railways, PSUs, NHAI, PWD, Forest etc.

**Q.2: Have the amendments issued in 2021 to RoW rules 2016 been able to take care of the needs of aerial fiber deployment? If not, what further amendments can be suggested? Please provide exact text with justification.**

**Tata Communications Response:**

- Policy framework should be in a place for structured overhead of Cable network for allowing structured pole-based Aerial fiber deployments especially in geographies where building underground fiber infrastructure is a challenge. For example, Atria Convergence Pvt. Ltd. has implemented a structured pole model in the city of Hyderabad to lay the fiber cable (Length- approx. 12,000 km) for its broadband network rollout. Such kind of optical fiber laying models need to be leveraged in other cities too.
- The permission to install overhead fiber would be another biggest enabler to provide cost-effective broadband services as the installation and operational maintenance of overhead fiber is much faster and far cheaper than underground OFCs.
- For RoW, there should be a single window clearance with active cooperation of all local bodies. All state electricity poles, municipal poles should be allowed to use for laying of OFC cable and a proper mechanism for the same needs to be worked out.
- Key central Government Ministries / bodies are missing in RoW policy (like Railways, Defence, Gas pipeline network, Railway, Coastal area road). The IT RoW Rules, 2016, as amended from time to time, should cover the central Government functions and uniform administration fee, policies and procedures should be adopted by these agencies as well.

**Q.3: What are the suggestions of stakeholders for aligning RoW policies issued by various other Central Government Bodies with existing DoT RoW policy?**

**Tata Communications Response:**

- Uniform and nominal ROW charges - Imposition of one-time fee should be uniform and nominal by all the States/ UTs and local bodies and same should not exceed Rs 1000 per Km for both underground infrastructure and Aerial OFC deployments.
- There should not be any additional costs getting imposed on ISPs / TSPs by way of free bandwidth along with provision of penalty clauses. No charges should be levied for maintenance of laid/existing routes with permission. Further, there should not be any way leave charges.
- Government should create an online platform for Railway RoW Applications and with affordable RoW rate because current Railway RoW charges are very high.
- Deemed approval process and timeline of deemed approval should be reviewed and reduced to 30 days from 60 days from the date of application. Accordingly, an application should be deemed to have been approved if the same has not been approved or rejected, with a reason to be recorded and communicated to the applicant in writing within a period not exceeding 30 days, instead of 60 days as proposed under draft guidelines. Further, the written approval in writing should be issued within 5 days post expiry of 30-day period.
- DoT should also create a national GIS (Geographical Information System) common across all the agencies which could be used by all these agencies to coordinate for issuing ROW permissions to Telecom Services providers. The single online portal should comprise State/UT wise GIS data for the applicant. In this regard, under this policy, each State / UT should develop the GIS data platform comprising the details of existing and upcoming roads, buildings, underground utilities to build the work that can be done jointly and cost can be shared. The GIS data platform should be integrated with the single online clearance portal so that the interested parties are able to see the ROW areas of their interest for working together to save cost and time.
- Land demarcation data base is also not available with Government, and it is creating issues during RoW applications (like Railway, Forest, NHAI etc.). Same should be made available in a digital manner.
- Government empowered DoT LSA field units to act as nodal agency to coordinate and resolve RoW permission issues between TSPs/ IPs and State / Central / Local Authorities. Nodal agency should ensure that service providers do not face any problems/ hurdles in obtaining a “No Objection Certificate” (NOC) from various concerned authorities.
- A single window clearance is must for processing of all RoW permission applications by leveraging digital means to bring transparency and predictability with minimum TAT of 30 days. There are significant number of Central Government Bodies such as NHAI, PWD, Railways, GAIL, IOCL, Bharat Petroleum, Hindustan Petroleum, Metro Rail, Smart City

Authority, local Municipal Corporation (Multiple entities like KMC, GHMC), Railways, Forest, State Highways etc. - each authority is having different ROW process, & TAT for grant of permissions and therefore it becomes cumbersome for TSPs / IP-Is to follow the same with different agencies without any single window process. There is a strong need of alignment of these agencies as well with the ROW policy and therefore, the single window clearance through online application process should be put in a place to take care of multiple authorities including the Central PSUs and streamline their processes as well as timelines so that approval process gets completed in 30 days. Further, land demarcation data base is not available with Government and it is creating issues and becoming a showstopper during submission of RoW application to various State / Central Authorities (like Railway, Forest, etc.).

- Government should set up central or state level agencies to monitor the success of the RoW policy, and report disputes in implementing the policies.
- We also propose that unique /common window should be created for processing of all Central and State RoW permission applications and same can be tracked for faster implementation. RoW portal should have transparent view of approval stages, which will provide better control to minimize the TAT.
- Government should monetize their passive infrastructure (like fiber, duct space, etc.). For this purpose, necessary provision should be made in the ROW Rules which will benefit all the stakeholders.
- There should be common policy for all central government bodies, state government bodies and local authorities and one central co-coordinator at each district level with direct supervision of DoT need to be created with precise timeline to grant permission for RoW.
- Right of way charges should be enabled to be paid over a period of 15 years. Fiber Capacity should be allowed to be shared and transferred without need of additional Right of way charge. This would increase value of investment made by infrastructure creator in Fiber infrastructure.
- There are also no statutes or laws that provide protection of fibre assets of Telecom Service Providers which get damaged and cut by various other agencies including Utility providers while they dig to lay their own underground assets like water pipes, drainage systems, electric cables etc. during their own expansion plans. There is an immense need to incorporate necessary provisions in ROW 2016 Rules, as amended from time to time, towards safety of underground and overhead infrastructure assets and remedies thereof as these infrastructures have been deployed after payment of huge RoW charges.

There are also frequent cases where RoW are demanded again for performing repairs or replacement of fibre cables damaged due to fibre cuts caused as above. It is suggested that necessary provision should be included in the RoW Rules appropriately.

- DoT in its draft ROW Policy guidelines, has proposed benchmarking of compensation for usage of immovable property for establishment of telecommunication infrastructure basis the

land rate of the Government. In this regard, we wish to submit that the Government land rates vary as per locality and undergoes change annually. Therefore, the Government land rates should be fixed for minimum period of five years irrespective of the ownership of the land resides with Central Government or State Government.

- There should be a clarity to be given in the RoW Rules regarding maintenance of laid/existing route should be permitted on old permissions without fresh ROW charges.
- Annual rental charges practice adopted by various Central & State Authorities / Local bodies should be revoked and align with one-time RoW charges.
- Process of Refund of security deposit charged in ROW Demand Note should be made simpler with define timeline once it is due for refund.

Q.4: Whether it should be mandated that certain public infrastructure (municipality buildings, post offices, bus, and railway stations, etc.) be earmarked to have dedicated spaces that allow service providers to deploy macro/small cells? If yes, what are the possibilities and under what legal framework this can be done? What should be the terms and conditions of use of such infrastructure? Please provide detailed inputs with justifications.

Tata Communications Response:

- Yes. it should be mandated wherein the Central Government authorities shall permit deployment of small cells on government building and structures free of cost for sharing among all TSPs in a non-discriminatory manner as this telecom infrastructure will facilitate seamless services experience to government staff as well as non-government staff who are using these locations.
- As responded in Q3 above, all the government entities should be brought on the common platform of understanding on uniform ROW framework and rules by way of single window clearance.
- RoW applications could be submitted by Telecom services providers in bulk or in phases for multiple such Government properties within the city. Once such requirement is received, a common telecom infrastructure within the building or property could be created by already established IP license providers and could be them shared by telecom services providers.
- The process for applications and approvals should be kept simple and agile.
- It is also suggested that to deploy standard designed cabinet of specific dimension on Street Light Pole/Traffic Lights along with 24x7 Power Availability by the authorities will encourage operators to use these Poles for small cell deployment. This will ease the selection of street furniture and approval process for Service providers.
- Also, Service Provider can provide complimentary services at designated infrastructure to the local bodies viz: Passenger Feedback Solutions at Railway Station, Bus Stations, Smart Street Light solutions in coordination.

The above suggestions will ensure optimal investments as well as effective utilization of the existing infrastructure.

Q.5: Can some of the street furniture like traffic lights, metro pillars etc. be earmarked for mandatory sharing between controlling administrative authority and Telecom Service/Infrastructure providers for deployment of small cells and aerial fiber? Does existing legal framework support such mandating? What should be the terms and conditions of such sharing? Please provide details.

Tata Communications Response:

Yes, it is important that street furniture like traffic lights, metro pillars etc. should be mandatorily earmarked for sharing with TSPs / IP-1s for deployment of small cells and aerial fiber in a non-discriminatory manner as it will give more options to the Service Providers to quickly rollout their networks. With expected proliferation of latest wireless technologies and increasing range of wireless frequency spectrum and wireline technologies such as GPON, FTTx, etc., use of street furniture like traffic lights, metro pillar etc. to be earmarked for mandatory sharing between Controlling Administrative authority and TSPs / IP-Is for deployment of telecom technologies. It becomes more critical in the deployment of 5G networks.

In this regard, we wish to submit as follows for enabling such sharing of street furniture:

- Complete and updated information related to such street furniture should be made available on the portal of controlling administrative authority for the reference of TSPs / IP-1s in a transparent manner.
- Such Street furniture should be made available with 24x7 power supply along with the equipment security assurance from the authorities.
- Online Portal should be made available to procure such street furniture infrastructure.
- Sharing of Street furniture needs to be made mandatory among all Service Providers required space for deployment of their small cell / Aerial Cable on a non-discrimination basis for ensuring level playing field. However, commercial arrangement to facilitate the infrastructure sharing between provider and seeker should be left on mutual consent/ bilateral basis.

Q.6: How can infrastructure mutualization and infrastructure collaboration be ensured to avoid exclusive rights of way? What legal provisions can support mandating these? Provide full details.

Tata Communications Response:

- Common nodal agency should be established across all the government agencies who are issuing ROW permissions to telecom services providers which will ensure the transparency across all the stakeholders.



- This will also facilitate avoidance of exclusive rights of way to any single telecom services provider and will also help in optimizing the utilization of such street furniture across multiple telecom services providers.

Q.7: Should there be permission exemption for deploying certain categories of small cells at all places or all categories of small cells at certain places (Like apartments etc.)? What legal framework will support such exemptions?

Tata Communications Response:

- There should be a permission exemption category not only for deploying small cells of certain categories which comply to RF radiation guidelines but other telecom elements such as in-building fiber laying, installing fibre termination boxes, OLTs, and FTTx elements should also be exempted. Suitable guidelines can be formulated for technical specifications of such elements which should be mandated across the stakeholders.
- It has been observed that many residential or commercial properties do not permit telecom services providers for installing their infrastructures and a common guideline should be issued by Central government and regulator to mandate such properties to make available their locations for such installations under standard guidelines.
- Small cell with EIRP less than 10W, should be permitted to install at Apartments by the Property Manager. Also, for Society with more than 5-6 numbers of Building, it should be made mandatory and utilize the IoT solution for Water Metering, Gas Metering, Smart home Automations.

Q.8: What should be the criterion/ conditions (like power, height etc.) and administrative procedure for implementing such exemptions? Please provide exact text with detailed justifications

Tata Communications Response:

- There could be different slabs of technical specifications which are required based on the size, shape, area of the property to be covered or connected and within those slabs, certain categories could be exempted from the permissions.
- For specific to IoT Street Light Solutions, a minimum of 9 meters Street Light Pole should be made available with 24 x7 Power availability.

Q.9: For Small Cells that do not fall under the exemption category, should there be a simplified administrative approval process (like bulk approvals etc.) for deployment? If yes, what should be the suggested process? If not, what should be the alternative approach?

Tata Communications Response:

- Yes, for such categories there should be a process to issue bulk approvals. This application process could be made online with simple steps.

Q.10: What power related problems are envisaged in deploying small cells on street furniture? Please provide full details.

Tata Communications Response:

- Telecommunication is an essential service and has to be delivered 24x7 for 365 days.
- It is important to provide reliable and unerrupted power supply to all the telecom infrastructure such as small cells, FTTx nodes, optical transmission equipment which would be installed on the street furniture for seamless customer experience.
- The power should be made available by the Local Bodies with a nominal fixed rental for the small cell depending upon the power rating as it will be difficult for Service Provider to obtain a power source from the DISCOM due to nonavailability of proper customer address.

Q.11: What viable solutions are suggested to address these problems? Please provide full details.

Tata Communications Response:

- Existing power distribution systems should be enhanced to ensure reliable power supply and backup for the telecom infra and equipment to be installed on the street furniture.
- Alternatively, place for UPS or power backup systems should also be made available for battery powered source for constant power supply along with the street furniture, provided there is technical and physical feasibility.
- Agreement with Power Companies/ DISCOMs to provide power supply on adhoc /street addresses or else earmark all those locations and give these address codes to obtain power connections.

Q.12: Is there a need for standardizing the equipment or installation practices for next generation small cell deployment on street furniture? If yes, what are the suggested standards and what should be the institutional mechanisms for defining, and complying to them?

Tata Communications Response:

- Since the existing space and power on street furniture is limited, it is important to standardize the specifications for equipment and installation practices for telecom equipment. The size of small cell equipment (Cabinet, holding box, device dimensions etc.) should be standard. The equipment should be modular in nature for installation and deinstallation needs. Further, there should not be any additional requirement for wiring.
- TRAI should also recommend that TEC should be involved in this activity of standardization and initiate separate activity with active participation from Industry stakeholders.

Q.13: Is there a need for a specific mechanism for collaboration among local bodies /agencies for deployment of small cells and arial fiber using street furniture? If yes, what mechanisms should be put in place for collaboration among various local bodies/agencies involved in the process of permissions with TSPs/IP1s and to deal with other aspects of Small Cell deployment?

Tata Communications Response:

- A common nodal agency should be formed across the local bodies / agencies who control / govern the street furniture to ensure suitable coordination among all the stakeholders.
- There should be an online interface for TSPs / IP-1s with nodal agency in a transparent manner.

Q.14: Kindly suggest an enabling Framework that shall include suggestions about the role of various authorities, rules of coordination among them, compliance rules and responsibilities, approval process, levies of fees/penalties, access rules etc.

Tata Communications Response:

In addition to the response in Q13 above, we propose the following,

- Nodal agency to be equipped with all the rules and regulations around ROW processes which is common across the stakeholders.
- Nodal agency would coordinate with respective local bodies / agencies to facilitate the permission from them in a timebound manner and timelines for such process should be strictly governed.
- Application process to be made online, simple and agile single window clearance.

Q.15: How can sharing street furniture for small cell deployment be mandated or incentivized? What operational, regulatory, and licensing related issues are expected to be involved in sharing of small cells through various techniques in the Indian context and what are the suggested measures to deal with the same?

Tata Communications Response:

- Sharing of passive infrastructure across the telecom services providers has been in practice for many years and the same has matured over a period of time.
- In a similar manner guidelines for active infrastructure such as small cells, transmission equipment can also be issued in view of the limited capacity of street furniture for hosting telecom equipment.
- Currently IP-Is who provide overground infrastructure already follow a mechanism of subsidizing the fees based on the number of tenants on a particular site. Similar process could be adopted for incentivizing the services providers while sharing the street furniture.

- The street furniture providers for small cell deployment can be incentivized via chalking out a plan for complimentary services. In case of IoT, a certain number of nodes/endpoints can be made available freely for them (AQI Sensors, Temp Humidity Sensors etc.).
- The Sharing of street furniture can also be made mandatory by putting in the clauses of tenders for all the PPP projects to develop public infrastructure.

Q.16: Whether there should be any specific regulatory and legal framework to enable Small Cell and Aerial Cable deployment on

i. Bus Shelters

ii. Billboards

iii. Electric/Smart Poles

iv. Traffic lights

v. Any other street furniture

Tata Communications Response:

- There should be uniform guidelines and rules for any kind of infrastructure as listed above being planned for installation of small cells and aerial fibre cables, and other telecom equipment.
- Sharing of such infrastructure should be encouraged through incentivizing the telecom services providers, this will ensure optimal and effective utilization of street furniture.
- Further, it is also suggested that the Central/State Govt./local authorities/ PSUs should provide proactive information related to leasing of passive infrastructure along with TSPs/IPs

Q.17: What should be the commercial arrangements between the TSP's/Infrastructure Providers and street furniture owners for the same?

Tata Communications Response:

As mentioned above in our response, commercial arrangement between provider and seeker of street furniture should be left on mutual consent/ bilateral basis.

In this regard, few suggestions are as follows:

- The agreements can be in terms of monthly fixed rentals/ charges with dedicated space, power, and other related infrastructure.
- Any incremental power & space should be charged at standard rates. The contract should be long term to avoid any disruption in services for public solutions.