



VIL/PB/RCA/May/2022/010

May 11, 2022

The Advisor (BB&PA)
Telecom Regulatory Authority of India,
Mahanagar Doorsanchar Bhawan,
Jawaharlal Nehru Marg (Old Minto Road),
New Delhi – 110002

Kind Attn: Shri Sanjeev Kumar Sharma

Subject: Comments on the TRAI's Consultation Paper on "Use of Street Furniture for Small Cell and Aerial Fiber Deployment" dated March 23, 2022

Dear Sir,

Kindly find enclosed herewith Vodafone Idea Limited comments to TRAI's Consultation Paper on "Use of Street Furniture for Small Cell and Aerial Fiber Deployment" dated March 23, 2022.

We hope our comments will merit your kind consideration please.

Thanking you,

Yours sincerely,

For **Vodafone Idea Limited**

P. Balaji
Chief Regulatory & Corporate Affairs Officer

Enclosed: As stated above



VIL Comments to the TRAI Consultation Paper on “Use of Street Furniture for Small Cell and Aerial Fiber Deployment”

At the outset, we are thankful to the Authority for giving us this opportunity to provide our comments to the TRAI Consultation Paper on “Use of Street Furniture for Small Cell and Aerial Fiber Deployment” dated 23.03.2022.

Preamble

1. We appreciate all the steps being taken by TRAI and the Government to wipe out the absence of small cell deployment in the RoW regulatory framework in India. Some of these include TRAI “Recommendations on Broadband Connectivity’ 16 on August 31, 2021, Indian Telegraph Right of Way (Amendment) Rules issued on October 21, 2021.
2. Further, TRAI has also been a torch bearer for the industry in starting the recent pilots for rollouts of small cells over street furniture for identifying the roadblocks etc. and co-utilization and sharing of street infrastructure of various administrative/appropriate authorities. The authorities have also shown eagerness to pursue innovative approaches to small cell deployments to support smart network related services.
3. The deployment of small cells has been a critical part of the 4G network upgrades and expansion but will become even more critical in 5G networks because of the introduction of higher spectrum bands that necessitate denser network deployments to support larger traffic volumes per unit area. While tall, high-power towers keep the network signal strong across large distances, small cells suit more densely developed environments like high capacity metropolitan areas and are installed in street furniture or building walls.
4. The key benefits of deploying small cells include quick and easy installation, being highly inconspicuous, affordable, and capacity booster and better coverage solution in densely populated urban areas.
5. However, there are various challenges listed below which are being faced by the stakeholders on ground regarding the use of street furniture for small cell and aerial fiber deployment:



- a. Absence of a regulatory framework on small cells
 - b. Absence of availability of backhaul
 - c. Scarcity of electrical power supply
 - d. Permits required from residential bodies
 - e. Non-uniform implementation of RoW rules by states and municipal bodies
 - f. High permit fees
 - g. Lack of sustainable infrastructure in select areas
6. Hence, it is the need of the hour to formulate standards/policy and facilitate a uniform approach for roll out of small cells over street infrastructure, for the proliferation of dense small cell infrastructure in the country, thereby unlocking potential of existing national assets like street furniture, public infrastructure, etc.

In regard to the questions raised in the consultation paper, we would like to submit our question-wise comments as follows, for Authority's kind consideration:

Question-wise Comments

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.

and

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.

VIL Comments to Q. No. 1 and 2:

For deployment of small cells on street furniture, the two most important aspects are deployment of small cells and secondly, deploying aerial fiber.

In our view, the existing RoW Rules require modifications to accommodate and to give abundant clarity with regard to small cell deployment on street furniture. In this regard, we envisage following modifications in the RoW Rules:



1. The opening context of the RoW Rules mentions that:

“In exercise of the powers conferred by sub-section (1) and clause (e) of sub-section (2) of section 7 read with sections 10, 12 and 15 of the Indian Telegraph Act, 1885(13 of 1885), the Central Government hereby makes the following rules to regulate underground infrastructure (optical fiber) and overground infrastructure (mobile towers and telegraph line), namely:-“

- a. In our view, the RoW Rules should explicitly capture small cells deployed over street furniture, as part of overground infrastructure besides mobile towers.
 - b. The definition of over-ground telegraph infrastructure should also specifically capture small cells and aerial fiber deployed over street furniture.
 - c. Further, there should be clear and unambiguous definition of street furniture and aerial fiber incorporated into the RoW Rules. The definition of street furniture should include examples of street furniture like Electric/Smart Pole, Bus shelters, Billboards, Traffic Lights, Metro/flyover/bridge pillars, signage boards or any other poles/street furniture.
2. **End to end Digitized process:** The RoW Rules envisage that the appropriate authority shall develop an ‘electronic application process’, as per extract given below. It further states that State Government may at its discretion establish a single electronic application process for all appropriate authorities under its control.

4. Nodal officer to be designated by local authority, etc.-(1) Every appropriate authority shall designate a nodal officer for the purposes of these rules.

(2) The appropriate authority shall develop an electronic application process within a period of one year from the date of coming into force of these rules for submission of applications:

Provided that the State Government may at its discretion establish a single electronic application process for all appropriate authorities under its control.

In this regard, we would like to recommend that the RoW Rules should envisage end-to-end digitized process. For evaluating effectiveness of any digitized process, the most important pillar should be user-friendliness. The end-to-end digitized process should include suitable alerts/notifications/notices to users, receipts, acknowledgement, SLAs, contact details of relevant technical official and 1st/2nd level of escalations, as well as stages of approvals and status of a particular application.



Therefore, the RoW Rules should provide for 'End-to-end Digitized process' from submission to approvals of RoW applications.

3. Single PAN India Portal - Online Central National RoW Portal (Sugam Sanchar):

- a. Presently, the RoW Rules envisage single application electronic process (Portal) for each of the appropriate authorities, though it provides for discretion by State Government to have single Portal for all appropriate authorities under its control.
- b. With Portal to be different for each of the appropriate authorities or for each State, the process of RoW would be cumbersome and not user friendly.
- c. Therefore, we recommend that the RoW Rules should envisage a **Single PAN India Portal - Online Central National RoW Portal (Sugam Sanchar)**, having end-to-end digitized process, to be developed and deployed by the Central Government. All appropriate authorities under the Central Government should be mandated to hook onto the said Portal. Besides, the State Governments should also be encouraged to join the '*Online Central National RoW Portal (Sugam Sanchar)*'.

4. Single window clearance:

- a. Currently, TSP has to approach each administrative agency separately to seek permissions to use the pole for such purpose. They have different planning application processes, due to variations in procedures (e.g. format of forms, planning fees, processing times etc.) from one local authority to another. Simplified administrative process is desired for small cell deployments through use of 'one stop shop' application procedure, reducing the decision-making chain and paper work.
- b. The RoW Rules should envisage setting up of single window clearance, where all administrative/appropriate authorities for a particular street furniture, should provide approvals through a single window.

5. Charges for Street furniture:

- a. One of the biggest bottleneck related to RoW is the high RoW charges, which most of times are unreasonable and not related to the work done principle. There are certain states which have prescribed forward looking and technology supportive charges for utilization of street furniture.



- b. **We would like to submit that no application fee or compensation shall be levied for using the street furniture or for installing the poles especially for providing support to over-ground telecommunications lines including additional poles between the existing poles established by any person or entity over the immovable property of the Local/Government Authority, for installing small cells and OFC required to connect small cells.** In case of Odisha, the RoW policy recommends annual compensation for existing poles of any authority to establish an overground telecommunication line (OFC) is Rs 100 per pole for urban local bodies and Rs 50 per pole in non-urban local bodies.
- c. Hence, keeping in mind the huge number of street furniture sites required for deployment of small cells and providing a good and dense network as well as charges recommended by certain states like Odisha, the annual compensation charges should not exceed Rs 100 for urban areas and Rs 50 for non-urban areas, on a per street furniture basis, irrespective of small cell/fiber or the technology used (i.e. 5G or 4G or any other future technology).

6. **Sharing of Street furniture:**

- a. Street furniture can be utilized optimally only when the passive infrastructure is shared amongst the TSPs. TRAI, itself, has been the vocal supporter of infrastructure sharing, and is also pursuing it vociferously in the ongoing small cell pilots at four different locations. Sharing helps a lot in terms of bringing in scale, reducing costs which further results in saving lot of capital, which in turn can be utilized for other network deployment related activities.
- b. It is pertinent to mention that, at times, some of the local authorities do come out with contracts/tenders laying conditions regarding the exclusive rights for using its street furniture. This generally happens due to opacity of the benefits pertaining to sharing or to bring in ease of coordination.
- c. Hence, sharing should be promoted and there should not be any exclusive tie-ups on using the street furniture. Any such reservation may create monopolistic hold over a particular area thereby denying the access to other TSPs to deploy small cells or making it commercially unviable, resulting into loss of enriched experience for customers of such TSPs.
- d. We completely understand that it may be challenging for Central Government/DoT to force mandatory provisions and legal framework on the local/appropriate authorities under State Governments with regard to sharing. The best way to ensure sharing is



that there should be mandatory provisions in the license agreement/registration of IP-I providers, thereby restricting execution of any tender/contract with local authorities which caters to exclusive right over utilization of street furniture. Such conditions against the exclusive arrangement, would go a long way in ensuring optimum uptake of street furniture for small cell deployment, thereby helping in densification of networks.

7. Notices through digitized process before taking any adverse action like fiber cutting:

- a. We would like to bring to your notice that there have been various instances of over-ground fiber cut despite having approvals, which increase the operational costs for TSPs and lead to huge coordination challenges. Considering that network densification in 5G will be facilitated through small cells, it would have huge dependence on the continuous uptime of the aerial fiber. With ultra-low latency, any downtime in service due to such fiber cuts, would impact assessing the 5G use cases and will pose hardships for the consumers.
- b. Therefore, the RoW Rules should facilitate that all the appropriate authorities / administrative bodies have access to the granted approvals and ensure that no fiber is cut by any authority unless suitable advance notices are issued to the entities deploying fiber, through the OIOP-RoW portal. This will ensure that suitable time is provided to address the concerns, without any abrupt fiber cut.

8. List of Street Furniture: The RoW Rules should also provide cataloguing and maintain list of applicable street furniture. The said catalogue and list of street furniture should be uploaded on the '*Online Central National RoW Portal (Sugam Sanchar)*' along with relevant details like height, design, weight bearing capacity, location coordinates etc. and made available to all in public domain, in a transparent and non-discriminatory manner.

9. Security of Small cells deployed over street furniture: Once the small cells are deployed in mass over the street furniture, the same would be done mostly at a lower height (few meters to upto 10 meters), hence, it will be vital to keep the equipment secure from theft and vandalism point of view. The local authorities should look into ways of assuring support for security of small cell equipment deployed over street furniture. Further, causing damage to telecom property should be considered as a serious offense under criminal legal framework and suitable provisions should be introduced in applicable statute.

10. Approvals and Exemption for Applications in Bulk: Again, considering the sheer huge size of small cells required to be deployed, there is a need to create flexible and user-friendly



procedures for seeking approvals and exemptions on applications in bulk. The RoW Rules should specify conditions for deemed approvals as well as exemption for certain type of small cells.

11. **Uniform application of RoW norms across Pan-India:** The RoW Rules should pave way for uniform implementation of the RoW framework by all street assets owning entities/authorities, local bodies, PSUs under any state, union territory and central government entity.

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

VIL Comments to Q. No 3:

1. All the Central Government bodies should be mandated to hook onto the End to end Digitized process being launched by DoT. The Central Government should endeavor to launch One India One Portal for RoW, which would help standardize RoW policies across multiple authorities spread across multiple Central and State Governments.
2. The annual compensation charges should be kept uniform and reasonable i.e. not more than Rs 100 for urban areas and not more than Rs 50 for non-urban areas, on a per smart pole/street furniture basis.

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.

and

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



VIL Comments to Q. No. 4 and 5:

1. The present legal framework doesn't mandate earmarking of dedicated spaces to deploy macro/small cells on certain public infrastructure. Also, there is no legal framework which mandates sharing between controlling administrative authority and telecom service/Infrastructure providers, for deployment of small cells and aerial fiber.
2. Dedicated spaces to deploy macro/small cells on sharing basis for multiple operators will definitely help in its faster deployment Therefore, there is a need to have a defined legal framework which can provide certainty and also force to implement such desired national objectives.
3. The Central Government authorities should permit the **deployment of small cells on Government buildings and structures free of cost.**
4. For the appropriate authorities under the central government, the legal framework should be made applicable on immediate basis. However, for the appropriate authorities under State Government/Union Territories, dedicated spaces and mandatory sharing should be encouraged through suitable insertions in RoW Rules and also, through other ways like conditions along with grants/partial cost bearing by Central Governments in the projects being implemented at state level.
5. Such dedicated spaces will need to ensure following:
 - a. Availability of adequate space to enable multiple TSPs install their equipment as per planned antenna height specific to them for ensuring adequate coverage area.
 - b. Availability of reliable AC power and feasible space for battery back up
 - c. Security aspects for the protection of the installed equipment
 - d. Accessibility for maintenance on 24x7 basis for our field operations teams
6. Further, mandatory sharing of traffic lights, metro pillars, street lights etc. between controlling administrative authority and TSP/IP provider for deployment of small cells and aerial fiber will go a long way in densification of the 4G/5G cellular network, for providing enriched experience to the public at large.
7. Light poles have emerged as an interesting option, due to their targeted deployment in populated areas, as well as, their height (4.5-12 m) and inter-light pole spacing (2.5-3 times pole height) that matches well with the topologies of urban small cell networks. This will also help in:



- a. Strengthening the telecom network at traffic junctions where traffic demands are high due to volume of vehicles waiting for signal and are also prone to interference due to open area receiving signals from multiple sites.
 - b. Enabling various services like catering to the digital connectivity needs of smart city administration like smart Traffic lights, CCTVs, Digital Billboards, Sensors, Public Address systems, smart metering etc.
 - c. Enable the fiberisation of Macro/Small cells due to sheer volume and presence of these poles and pillars in the entire city.
8. The controlling authority should also determine the structural load and wind bearing capacity of street furniture before sharing the list of street furniture on a centralized online portal.
 9. Also, permission for additional radio equipment for backhaul connectivity may be made available as per structural stability.
 10. Possibility of deploying Earth Pits (Electrical Ground) near the Traffic lights/Metro Pillars etc. which might involve digging of the Road/Pavement should be permitted and relevant cost involved in repair of the Public Road / pavement to be clarified. Permission for sharing the same among different Operators may be provided.
 11. In case of limited availability against demand, equitable distribution with a spirit of accommodating all Operators may be followed so that all Operators may get benefit for their end customers. Also adequate time and sharing of possible candidates should be ensured for all Operators.
 12. DoT/TRAI should issue mandatory framework to the respective authorities to follow the same and Local TERM should help to enforce the same.

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.

VIL Comments to Q. No. 6:



1. We would like to submit that any access of the street furniture should be provided to service providers on a non-discriminatory and non-exclusive basis.
2. To prevent exclusivity and ensure transparency of approvals, we recommend:
 - a. Suitable terms and conditions should be introduced in the Unified license and IP-I registrations, mandating the licensee/registration holder not to get into an exclusive tie-up for taking rights over street furniture, which would thereby restrict its availability to any other licensee/registration holder.
 - b. Establishing of a One India One Portal for RoW, thereby providing one common Pan-India single window clearance for all approvals related to street furniture.
 - c. Availability of all such approvals as well as list of available street furniture should be made disclosed transparently in the public domain, through said '*Online Central National RoW Portal (Sugam Sanchar)*'.
 - d. Fees must be publicly disclosed, competitively neutral, technology neutral, nondiscriminatory and based on actual and direct costs (including, for example, costs for maintenance and inspections).
 - e. Permits must be approved or denied on publicly available criteria that are reasonable, objective, and non-discriminatory.
 - f. Infrastructure sharing should be encouraged on an open access basis to all mobile network operators who are active in that location. This is similar to the Small-Cell as-a-Service (SaaS) cited by TRAI.
 - g. Operators and neutral hosts are prohibited from entering into exclusivity agreements with Tower controlling authority. Indulgence into such a practice, through either formal or informal arrangement, shall be treated as violation of the license agreement/registration.
 - h. Any asset controlling authority (for e.g. state electricity board) offering their infrastructure should consider the requirement of providing their assets in a manner that all licensees have an equal opportunity for installation of small cell infrastructure. For e.g., if the feasibility of the asset of an EB is only able to accommodate 1 TSPs, they should consider giving 1 out of 3 poles to each TSP, if there are 3 applicant TSPs.



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?

VIL Comments to Q. No. 7:

1. Yes, there should be permission exemption for deploying certain categories of small cells at all places, as well as all categories of small cells at certain places.
2. Small cells have very low transmit power compared to Macro sites resulting into a much smaller coverage footprint.
3. Small cells deployed at height up to 10m or lower than surrounding buildings and radiated power up to 38 dBm should be exempted from frequency exposure certification and simplification of approval process for permission.
4. Shorter radio link from a user to the small cells would reduce the required transmit power of user devices (e.g. smartphones) thus reducing further localized RF exposure levels from users' handheld. In addition, since TDD is used for 5G, the downlink transmissions are separated from the uplink transmission by allocation of different time-slots within the same frequency band. From an RF-EMF exposure perspective, this means that emissions from small cells (downlink) only happens for a fraction of time (it is roughly 0.75).
5. Hence due to the smaller radiated power combined with TDD transmission results in lower RF exposure levels and therefore can be exempted.
6. There should not be any restriction on deploying of any type of small cells at any places as long as it meets the EMF radiation norms of DoT. Also permission to camouflaging the Small Cells in certain areas may be granted.

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

VIL Comments to Q. No. 8:

1. There should be two criteria/conditions for implementing such exemptions, i.e.,



- a. Height: The height of street furniture should be upto 10m or lower than surrounding buildings, whichever is higher.
 - b. Radiating power: The radiated power of small cell should be upto 38 dBm.
2. The height and radiated power related details should be part of the application over the digitized process on '*Online Central National RoW Portal (Sugam Sanchar)*'. Applications with heights and power values lower than the above-stated limits should carry deemed approval, which should be issued immediately upon making application and respective fee payment.

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?

VIL Comments to Q. No. 9:

1. Bulk approvals shall be considered for small cells which do not qualify for exemption.
2. Sample testing can be done for such cases to ensure compliance to radiation norms and ICNIRP 2020 Guidelines need to be adopted.

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

and

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

VIL Comments to Q. No. 10 and 11:

1. Street furniture will have limited space available and deploying battery banks for power backup is generally not feasible in such cases, hence uninterrupted, reliable and stable AC/DC power would be required along with power supply on poles for deployment of communication equipment for providing reliable services.



2. Possibility of deploying Earth Pits (Electrical Ground) for the small cell deployment is another challenge. Adequate permissions for providing earth pits or sharing the same among different Operators are requested for the same since it is related to safety.
3. Further, a common power consumption bill for a large number of small cell sites which are going to be installed on street furniture will be beneficial as lot of effort will be wasted if a bill is issued on a pole by pole basis. It is suggested that power department make a one-time calculation for each type of pole and come up with a model depending upon the pole size/dimension and give approval and combined bills accordingly.
4. Energy bill (Fix Demand Charges) – Telecom DC site load increases gradually over the years as per Network growth & expansions. Electrical bill comprises of fix demand charge (on Sanctioned load) irrespective of running load drawing, which results into a telecom operator paying huge monthly payments on unutilized sanctioned load as well, leading to huge financial burden. Considering the deployment of huge number of small cells, it is imperative that Power Ministries should mandate Discoms to consider the electricity bill and fix demand charge basis the running load and not on the sanctioned load.
5. The small cells over street furniture should get benefit of lower electricity tariff i.e. on the basis of industrial rates.
6. Uniform pan-India policy that allows load-aggregation of the small cells over street furniture as well as reduction of the threshold of 1MW for open-access to $\leq 250\text{kW}$. This will allow benefit from conventional/renewable PPA.

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?

VIL Comments Q. No. 12:

1. Depending on the street furniture category, deployment and installation guidelines can be provided to ensure that the same pole/pillar can be shared for mounting equipment of other TSPs.
2. In addition, suitable deployment scenario can be specified to be followed for installation to minimize the visual impact of small cell deployments and should be as unobtrusive as



possible, so as to ensure positive opinion from the public and local authorities on the environmental sustainability of increased densification. Thus, permission to camouflaging the Small Cells in certain areas may be granted.

3. As the 5G technology is in nascent stage and so will be design/shape/weight, etc. of its small cell equipment, standardization of the equipment may be counterproductive at this stage.

Q.13: Is there a need for a specific mechanism for collaboration among local bodies /agencies for deployment of small cells and aerial 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?

VIL Comments to Q. No. 13:

1. Collaboration among local bodies/agencies is a must for deployment of small cells or aerial fiber using street furniture otherwise it will be difficult to install the equipment and maintain the same post deployment.
2. In case of Aerial fiber, there would be chances that one agency will provide the approval, whereas other may cut the fiber impacting availability of the services.
3. To speed up the approval process, for site locations, where asset controlling authority (for e.g. electricity authorities, metro rail corporations or other government organizations) are permitting installations of small cells & telecom infrastructure, further permission from Municipal Corporation and local bodies need not be mandated.
4. To address coordination and collaboration in between all stakeholders and to bring in uniformity in the different processes/policies followed by different authorities, there is a critical need of having a uniform and a single pan-India portal for all RoW '*Online Central National RoW Portal (Sugam Sanchar)*' related approvals etc. The said portal should also provide for communication including notices in between the concerned stakeholders like TSP/IP-Is and appropriate/administrative/local authorities.
5. Besides, there should be a legal mandate that the telecommunication infrastructure i.e. fiber, should not be cut in any instance. To assist the local bodies in resolution of their



concern, the common portal should provide access to the Nodal officer of TSP to be contacted for details and approval taken, related to such fiber.

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.

VIL Comments to Q. No. 14:

1. Central Government has a role in setting the overall strategy for connectivity, and in framing appropriate legal structure, policy and regulation.
2. The requirement for compliance assessment of small cells in terms of RF-EMF exposure limits is a significant barrier for dense small cell deployments, due to the relatively larger number of small cell sites (both outdoor and indoor) that may need to undergo the costly and time-consuming assessment for product installation compliance.
3. Moreover, the realistic spatio-temporal traffic variations, as well as, time-division duplexing (TDD), power optimization for intercell interference management, savings in energy consumption (e.g. discontinuous transmission, idle cell switch-off) and other performance-enhancing mechanisms aggressively employed in small cell networks would mean that the small cell transmit powers in practice are well below the theoretical maximum powers. As a result, the compliance boundaries typically evaluated based on these theoretical maximum transmit powers creates overly conservative EMF limits and may put severe constraints on density of small cell deployments.
4. Local Planning Authorities/Asset controlling authority: The planning application times would make the dense deployment of small cells challenging. Local planning authorities have a vital role in facilitating network development through the operation of the planning system and, for example, in helping to identify the structures suitable for mobile infrastructure. Consistency (reduced fragmentation), particularly in application for planning permit, is essential to ensure rapidity, predictability and repeatability of dense small cell deployments. Local planning authorities shall also ensure that the planning function works in tandem with other relevant departments and in order to facilitate the deployment and connectivity of small cells. Maintaining a database of qualified candidate site locations is a must to speedup site identification and further simplify processing of applications.



5. Besides, the said roles of different stakeholders, rules of compliance, assessments, approvals, exemptions etc. can be very well addressed through '*Online Central National RoW Portal (Sugam Sanchar)*'.

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?

VIL Comments to Q. No. 15:

1. Sharing of Street Furniture:

- a) When the existing infrastructure is made available for small cell deployment at a reasonable price with permission being provided in time bound manner then it will automatically become the 1st choice for small cell deployment.
- b) For encouraging sharing of street furniture for small cell deployment, there should be fiscal and non-fiscal incentives for the operators. **One of the easiest, fair, reasonable and auditable incentive would be to give pass through/deduction of the charges paid by the TSP to the other TSP/IP-1 for such shared street furniture. This incentive would go a long way to encourage sharing and would also bring in efficiencies into the operations.**
- c) Also, passive sharing should be mandated whereby multiple MNOs share physical space and site infrastructure (masts, utility poles, advertisement panels, fixed-plant for backhauling etc.), but the active network elements can continue to remain separate or shared as per commercial decisions. Passive sharing is of interest to MNOs because the sharing is mediated by a neutral third party (e.g. IP-1 companies), which serve multiple MNOs in each site, even as their individual networks remain competitively independent of each other.

2. Sharing of Small Cells: Regarding the sharing of small cells, we would like to submit that the same shall not be mandated and be left at the discretion of the TSPs.



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**

VIL Comments to Q. No. 16:

Please refer to our comments to question no. 1 above.

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

VIL Comments to Q. No. 17:

1. Deployment of small cells should not be seen as a source of revenue by various Local Authorities and Government Bodies.
2. Commercial pricing has to be fixed on a per pole basis and should represent a reasonable approximation of the authority's reasonable costs.
3. We recommend that the annual compensation charges should not exceed Rs 100 for urban areas and Rs 50 for non-urban areas, on a per street furniture basis, irrespective of small cell/fiber or the technology used (i.e. 5G or 4G or any other future technology)
4. Fees must be publicly disclosed, competitively neutral, technology neutral, non-discriminatory and based on actual and direct costs (including, for example, costs for maintenance and inspections).
5. DoT should propose a standardized agreement format to be entered into between small cell service providers and street furniture owners for this purpose.

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