

**ASSOCHAM Submission on
Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed**

At the outset, ASSOCHAM would like to congratulate the TRAI for coming up with consultation paper on “Consultation Paper on Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed”. We are thankful to the TRAI for providing us an opportunity to express our views on the matter. The views of the Members of ASSOCHAM are as below:

Q.1: Should the existing definition of broadband be reviewed? If yes, then what should be the alternate approach to define broadband? Should the definition of broadband be:

- a. Common or separate for fixed and mobile broadband?**
- b. Dependent or independent of speed and/or technology?**
- c. Based on download as well as upload threshold speed, or threshold download speed alone is sufficient?**
- d. Based on actual speed delivered, or on capability of the underlying medium and technology to deliver the defined threshold speed, as is being done presently?**

Please suggest the complete text for revised definition of the broadband along with the threshold download and upload speeds, if required for defining broadband. Kindly provide the reasons and justifications for the same.

And

Q.2: If you believe that the existing definition of broadband should not be reviewed, then also justify your comments.

ASSOCHAM Response:

1. The Authority has succinctly summarized the various approaches taken for defining Broadband across the countries. We understand that most the approaches have evolved over the years, basis the local regulatory and consumer experiences and have some intrinsic value to its users.
2. Similarly, the definition of Broadband and the approach to define Broadband in Indian context has also evolved over the years, basis national goals and in-depth study and analysis by the Authority. Therefore, we do not see any reason for changing the approach towards defining Broadband.
3. We agree that in the rapidly changing technological scenario, the threshold speed that is considered to be adequate for defining broadband continues to evolve to meet the expectation of consumers after some time, as irrespective of the definition, the markets inevitably rise to meet the customer expectations.

4. For instance, despite the current threshold speed for broadband of 512 Kbps, far higher speeds are being offered in the market, delivering high speed services such as streaming and video conferencing services, etc
5. It may also be noted that the speeds available to consumers are dependent on a number of factors which include the network (Mobile, FTTH or satellite), the type of application device used by the consumer, etc.
6. Therefore, we do not see any need to change the Broadband definition, at the same time we do not oppose increasing the threshold limit for broadband at periodic intervals.
7. However, **we believe that** the present **focus** should be on **enhancing broadband penetration** rather than defining the connection speeds.

Q.3: Depending on the speed, is there a need to define different categories of broadband? If yes, then kindly suggest the categories along with the reasons and justifications for the same. If no, then also justify your comments.

ASSOCHAM Response:

1. We submit that such categorization is already available by virtue of the different technologies being offered in the wireless/mobile services segment and hence there is no need for any other or further categorization.
2. In respect of fixed broadband, TRAI in its direction dated 31st October 2016 on delivering Broadband services in a transparent manner by providing adequate information to broadband consumers has mandated that for the Fixed Broadband services the TSPs should provide the speed of connection for data allocation under a plan and for Wireless services it should inform the technology used for data usage entitlements.
3. Thus, we do not see any need for defining different categories of broadband.

Q.4: Is there a need to introduce the speed measurement program in the country? If yes, please elaborate the methodology to be implemented for measuring the speed of a customer's broadband connection. Please reply with respect to fixed line and mobile broadband separately.

ASSOCHAM Response:

1. We agree that there should be openness and transparency in communications to consumers on all aspects including speed to help them make informed choices. However, we submit that the said transparency has already been introduced by TRAI direction dated 31st October 2016.

2. Further, to measure the wireless data, there are many popular apps available in the market like NetVelocity, OpenSource and Speedtest by Ookla, not to mention TRAI's own mobile app, TRAI MySpeed. In addition to this, many other reports are published by the Authority that provides the speed of wireless data.
3. In view of the above, we believe that there is no need to implement a separate speed measurement program for wireless services.

Q.5: Whether the Indian Telegraph Right of Way (RoW) Rules 2016 have enabled grant of RoW permissions in time at reasonable prices in a non-discriminatory manner? If not, then please suggest further changes required in the Rules to make them more effective.

ASSOCHAM Response:

1. We submit that the ROW rules 2016 issued by the DOT are a path-breaking attempt, to streamline ROW approvals in the country for both overground and underground infrastructure; however, due to the multiplicity of jurisdictions involved, these have not been very effective. The State Governments have not imbibed the same in their infrastructure policy and there is lack of cohesiveness of approach in actually implementing the ROW Rules.
2. We believe that there is a need for a concerted effort to start a process to help execution of ROW Rules, so that these get implemented uniformly by all state governments / local authorities. For this we believe that it is necessary to give statutory support to these Rules by bringing in an appropriate amendment to the underlying legal framework to give teeth to ROW Rules so as to ensure enforceability, wherever required.
3. We note that State Governments have already waived of the ROW charges for the Bharat Net project and suggest that the same should be done for all overground and underground infrastructure so that the right emphasis is provided for speedy rollout of critical infrastructure. This would accelerate rollout which is critical to meet the objectives/Goals laid down in the NDCP 2018 for Broadband proliferation in the country.
4. In the interim, we submit that the ROW Rules, need to encompass the following focus areas:
 - a. Reduction of RoW charges (**restricted to the cost of restoration**)
 - b. Facilitate Uniform restoration charges for RoW permissions.
 - c. Digging methodology and Aerial Cabling.
 - d. Detailed Rules for Towers and Other associated telecom facilities.
 - e. Priority Power Connections from Electricity Board
 - f. Common duct policies
 - g. Charges / rentals levied by City / Local authorities / Other Central Ministries.

- h. Unfettered access to Residential complexes/Commercial Buildings/Malls etc.
 - i. Regularization of existing Telecom Infrastructure
5. In view to address the gaps in the current ROW Rules and in order to improve the process and expedite the ROW approvals at minimal cost, we are suggesting the following measures to be taken/incorporated in the ROW Rules.

Administrative and Policy measures

- a. Adoption of the ROW Rules by all Central Ministries & State Governments in totality.
- b. Telecom and Telecom Infrastructure to be considered under Essential Services Act through a Parliamentary enactment.
- c. Establishment of Single window Online clearance portal
- d. Appointment of a Nodal Officer.
- e. Defined members of State and District level Dispute committees.
- f. Mandatory timelines for Permissions/NOCs within 45 days of application with deemed approval clause if it is not granted in stipulated time.
- g. Validity period of RoW Permission **till the license expiry**
- h. A “Dig Only Once” policy be incorporated in designing of Utility Duct with implied RoW permission for Telecommunications in all infrastructure projects, building and housing bylaws. Standardized provisions and specifications for installing utility duct/optical fibre should be part of the construction design policies of all Central, State level authorities and agencies in-charge of all infrastructure approvals and projects whether private or public (e.g. NHAI/Urban Development Ministry/Housing Ministry/Public Works and local development authorities). In-fact, for the purpose of issuance of completion certificate of the building/infrastructure this can be a mandatory requirement. Fixed utilization fees of ducts constructed by state / private agencies along the road at Rs. 1,000 per Km per annum for laying OFC.
- i. The access to all the buildings/RWAs/Malls must be allowed to TSP for extending the telecom services under the 100% Digital revolution program. This is allowed under Telegraph Act but not enforced and accepted as a legal document by RWAs/Estate Mangers. Rights to Access should be granted to TSPs for 24X7 basis. This provision need to be enabled through Essential Service Act.
- j. Change in Building by-laws (All new buildings **must have duct/trench** inside the premises and shaft to lay fiber up till the home)

Measures pertaining to underground Infrastructure

- a. Creation of **National Fiber Regulatory Authority** to achieve faster, transparent, and economic roll-out of fiber and ensure optimum utilization by effective sharing among service providers. This National level authority must be empowered to govern and

- grant RoW at pre-defined rates rules, guidelines and timelines, including grievance resolution in a time-bound manner.
- b. Guidelines for establishment of Underground Telegraph Infrastructure: Fixed restoration charges on the basis of quantum of restoration work (No Centage/Supervision/Misc. charges)-
- i. Rs 500/- per meter as a ceiling rate if local authority repairs the road. The rate may vary basis the surface of the road to be repaired, however, in no case should be above the ceiling rate. The lower rates for surfaces with lower cost of repairing may be indicated as well.
 - ii. Rs 100/- per meter (as bank guarantee) if licensee repairs the road OR
 - iii. A Centrally guided uniform rate card based on any one of Central Government Department such as NHAI, CPWD etc.
- c. Provision of a Third-Party Quality Assurance agency to ensure the quality of restoration in case Licensee is opting for self-restoration.
- d. One time Administrative charges for Underground Telecom Infrastructure as Rs. 1000/- per Km and for Overground as Rs. 10,000/-. There should be no other Supervision/Centage/Misc. charges.
- e. Permissions to execute OFC work should be granted during Monsoon embargo through Horizontal Directional drilling and Micro Trenching methodology.
- f. Change in construction design policy (**provision for a utility duct** across all roads, streets, gas, oil, power, railway line & state highways for TSPs at nominal operational costs)

Measures pertaining to over-ground Infrastructure

- a. **Use of Government property by the licensee**
- i. Annual rentals or lease rentals for the life time or for the license period for Smart City authorities to be subsidised for Telecom Infrastructure. Else, DoT Rules should have provision for developing telecom infrastructure along with Smart City build up.
 - ii. Annual land rental for the usage of government land for establishing infrastructure should be capped at 10% of circle rates.
 - iii. Annual charges for using other government infrastructure should be defined uniformly.
 - iv. Charges for using poles to carry OFC/aerial cabling. The infra usage especially for poles installed by authorities /utility operators must be allowed to be used for zero or minimum rentals (@100/per poles max) for any commitment above 10 years. This will help to increase the fibre footprint across Type 2 and 3 cities.

- v. Instructions to SEBs/DISCOMs to give permissions for usage of their poles as per the rate card mentioned in the Telegraph Act for deployment of telecom infrastructure.
- vi. For all aerial work additional steel poles requirement at terminal points / turning points to be allowed to provide for strengthen the string load – both for department poles and own poles -without any additional ROW cost. These terminal poles may associate with either a MH or a pillar like structure of MTNL/BSNL and should be excluded from the ROW cost.
- vii. Clear instructions on No other fee to be charged i.e. Supervision/Centage etc.
- viii. No Location based restrictions.
- ix. Access should be granted for 24X7 basis

Use of private property by the licensee

- i. No RoW charges shall be payable to the concerned agencies.
 - ii. Lease agreement/changes shall be decided / settled mutually between the private owners and the licensee
 - iii. No Location based restrictions.
- b. Permission for Structured aerial cabling should be granted whenever laying of underground OFC is not possible.

Additional Measures pertaining to telecom towers

- a. Tower erection NOCs to be waived off. Time lag in getting this document is stretching the construction schedule which ultimately affects the roll out plan and the customer need.
- b. No formal permission should be required to be taken for moveable communication towers/cells on wheels.
- c. The regularization of existing Mobile towers is a big challenge being faced by all the TSPs. A comprehensive procedure needs to be put in place to address this issue.
- d. Electricity Board connection to be established on priority under Essential Service Act requirement. A simplified process to be adhered to and provision for connection on priority to Telecom Infrastructure within maximum 21 days from date of application. Considering the importance of Electricity in vital Telecom sector, the charges for the electricity should be reasonable. Number of States are charging commercial rates for electricity whereby pushing up the cost of operations. It is requested that electricity rates should be at maximum, charged at Public utility/ industrial rates.

Measures pertaining to telecom infrastructure in Defence, Forest and Railway lands

- a. The RoW policy should allow **easy/unrestricted access** to use the government infrastructure

- b. We submit that the permission to lay OFC in forest areas take minimum 6 months, which is a direct and continued violation of the ROW Rules envisaging deemed permission in 60+5 days. Therefore, we propose the following for forest areas.
 - i. If OFC is being laid in already diverted road-side Forest, then there should be no need of taking separate Forest permissions and OFC laying work can be commenced after taking permissions from Road owning Agency.
 - ii. If OFC is passing through Forest/Wildlife area which is still to be diverted, then the permissions should be granted by Forest department at the level of DFO within 60 days. In case of Wild life permissions, no separate permission for Forest should be required to be taken up by Licensee. There should be no compulsion to apply in Forest portal separately, it should be linked with single window online portal with simplified procedure/documentation for OFCs as in case of other Road owning agencies. If OFC is routed through portions of Wild Life of Sanctuary permission should be available at the level of Chief Wild Life Warden of the state.
- c. We submit that Railways also have their own well defined Rules and Guideline for granting permissions. However, the Railway crossing charges i.e. Way and Leave charges applicable for private TSPs are exorbitantly high and range from Rs 1 Lakh per crossing to more than Rs 1 Cr in some cases. This is in stark contrast with the charges levied for BharatNet project to a fellow PSU. The Railway Board has adopted OFC Laying charges of Rs 1,000 per Km for under-ground & Rs 10,000/- for over-ground for Bharat Net project. We submit that the Railway restoration charges should be standardized for all types of crossings at Rs. Rs 10,000/- per crossing and should be implemented in non-discriminatory manner. There should be no other/recurring charges.
- d. For deployment of Telecom Infrastructure in Defence Lands / Cantonment Boards / Border area formations, BRO etc., a clear mandate needs to be issued by DOT under the ROW Rules.
- e. Promoting the **PPP model** , wherein TSPs can allocate/ provide fiber connectivity to all government and private buildings, public infrastructure for Government usage at District / State / Central level.

Measures pertaining to dismantling of telecom infra by Authorities and Other miscellaneous measures

- a. Authorities should not unilaterally dismantle the already laid Telecom Infrastructure. In case of any issues, the TSP should be informed in advance and suitable solution should be found without disrupting the Telecom services. A clear Policy guideline for Safety & Security of already laid Telecom Infrastructure needs to be put in place.
- b. At many places lot of resistance is faced from Public during the installation of Telecom Infrastructure. Need support from Govt machinery to work out a

mechanism to educate public and address unfounded beliefs of Tower being a health hazard.

- c. For Construction /repair by various utility partners, timely information to TSPs should be given by Utility partners.
- d. During O&M requirement Authorities should not charge any additional ROW fee of any kind. Repair and maintenance to be done and complied under Essential Service Act. No State Act/ rule should supersede DoT Act / Rules.
- e. The ROW cost with respect to Man Hole location is calculated differently by authorities across basis the land usage. Apart from that we have annual rentals already we have paid for row to lay cables, but to terminate we need either a Man Hole or a pillar like MTNL/BSNL. This is only termination points which should be excluded from the ROW cost.

Penalties and other measures

- a. Punishment (imprisonment or fine or both) against offences of vandalism, sabotage, willful damage, tampering etc. A clear instruction of enforcement of the Indian Telegraph Act 1885 to deal with theft and vandalism cases. The Act must have quasi-judicial powers, not less than District Judge level to need effective enablement.
- b. Cases to be reported with FIR against damages by any third party including LCO. The impact of the revenue loss along with the additional capex required to restore the services be incorporated in the report as a loss value. The law must cover the damage and revenue cost fully.

Q.6: Is there any alternate way to address the issues relating to RoW? If yes, kindly elucidate.

ASSOCHAM Response:

- 1. As submitted above, the ROW Rules are a path-breaking approach and the only requirement is to improve, streamline and implement the same. We do not suggest any alternative approach and submit that it is better to strengthen the Rules by incorporating aforesaid suggestion and then these should be enforced through a statute.
- 2. Proliferation and availability of Broadband is too important an issue for it to be left to the whims and fancies of each and every Approving Authority. The Government should firmly implement these rules.

Q.7: Whether all the appropriate authorities, as defined under the Rules, have reviewed their own procedures and align them with the Rules? If no, then kindly provide the details of such appropriate authorities.

ASSOCHAM Response:

1. We submit that despite best efforts by DOT, not even a single State has adopted these rules in totality and only 16 States have adopted these Rules, with their own modifications and interpretations so far. Haryana, Delhi, Punjab (partial), Himachal Pradesh, Bihar, Meghalaya, Gujarat (no aerial provision), Maharashtra (partial), Karnataka, Odisha (partial), West Bengal and Telangana are yet to align their policies with the ROW rules.
2. Other Central Ministries like MORTH/NHAI, Ministry of Petroleum & Natural Gas, MOEF & Railways, Ministry of Defense, Ministry of Civil Aviation have not yet adopted these Rules and are levying exorbitant ROW charges as well as taking lot of time in issuing the ROW Permissions.
3. We are providing a small list of a selected locations with exorbitant restoration rates to highlight the gravity of non-adoption/implementation of a uniform approach.

Location	Charges
a. Karnataka	~ 8.40 Crore per km in BBMP area ~ 7.88 Cr per km in other cities ~ 7.30 Cr per km in Town /Panchayat
b. Mumbai:	~1.2 Cr per km
c. Pune	~ 1.0 Cr Per Km
d. Delhi	~ 6.8 Lakhs Per Km As per Draft policy of SDMC ,Delhi , SDMC will levy additional one time way leave /usage charges @ INR 800 per metre at the time of ROW permission itself. This amount will be for 5 years period after which it can increase upwardly by 35% (i.e. 7% annually) . These charges will be over and above the already stipulated following charges- 1. INR 5000+ 18% GST as one time processing charges 2. Refundable security deposit or BG of minimum 1.5 to 2 Lac 3. Road cutting and restoration charges as per the demand note
e. Nashik	~ 40 lakh per Km charged by Nashik Municipal Corporation (NMC)
f. Kerala:	Prevailing rates of restoration in PWD (NH) from 2012 onwards (₹per m ²) <ul style="list-style-type: none"> • BT Surface 3854.00 • Berm 264.00

	<ul style="list-style-type: none"> • Shoulder 946.00
g. Hyderabad	<ul style="list-style-type: none"> • Rs 6,480 per square meter (for bitumen roads) • Rs 4060 per sq meter for cement concrete roads • Rs 2050 per square (sq) meters for footpath repairs and restoration

Q.8: Whether the RoW disputes under the Rules are getting resolved objectively and in a time-bound manner? If not, then kindly suggest further changes required in the Rules to make them more effective.

ASSOCHAM Response:

1. We submit that although there is a clear cut mention of appointment of Dispute resolution officer by the state in the ROW Rules 2016, however, the same has not been implemented by the States so far, consequently the intent of resolving ROW disputes in a timely and effective manner is still not realized.
2. We understand that a statutory mandate is required to implement this measure along with other measures in ROW Rules.

Q.9: What could be the most appropriate collaborative institutional mechanism between Centre, States, and Local Bodies for common Rights of Way, standardisation of costs and timelines, and removal of barriers to approvals? Justify your comments with reasoning.

ASSOCHAM Response:

1. NDCP envisages creating a collaborative institutional mechanism between Centre, States and Local Bodies for Common Rights of Way, standardization of costs and timelines; Removal of barriers to approvals; and Facilitating development of Open Access Next Generation Networks. Introduce new and efficient technologies such as M2M (technology that enables networked devices to exchange information and perform actions without the manual assistance of humans) and cloud computing.
2. As mentioned in our response to previous questions, enhanced ROW Rules with the force of law behind them should be effective. We expect in such a scenario; the State Governments and other central Ministries will not permit violations of ROW Rules and we will have the best possible institutional mechanism.

Q.10: Should this be a standing coordination-committee at Licensed Service Area (LSA) level to address the common issues relating to RoW permissions? If yes, then what should be the composition and terms of reference of this committee? Justify your comments with reasons.

ASSOCHAM Response:

1. State level Co-ordination Committees already exist where the TSPs and IPs deliberate common issues being faced at local level, in order to decide on the joint course of action for redressal with the concerned Authorities. We understand that these Co-ordination Committees can be institutionalized and brought under a proper legal forum by including State Nodal Officer, DDG-LSA, Dispute Committee members etc. with Nodal Officer chairing the Committee.

Q.11: Is there a need to develop common ducts along the roads and streets for laying OFC? If yes, then justify your comments.

And

Q.12: How the development of common ducts infrastructure by private sector entities for laying OFC can be encouraged? Justify your comments with reasoning.

ASSOCHAM Response:

1. In order to reduce the digging and optimize the use of ducts, a common duct policy/ “Dig Only Once” policy with implied RoW permission for Telecommunications in all infrastructure projects, buildings, and housing by-laws, is imperative. All TSPs or IPs desirous of offering service in an area will require to lay fiber and that can primarily be through only ducts alongside the roads.
2. With a common duct policy there will be no need for every service provider to take separate permissions and do separate digging for their proposed work. This would imply avoiding restoration of same roadside areas time and again and more and more costs and time wasted in developing similar telecom Infrastructure, which will very well be shared.
3. However, in every location, smart city or otherwise, this should be implemented with prospective effect. There should be no impact on the infrastructure already laid, whether underground or overhead. The existing service providers with their own infrastructure already in place, should not be compelled to join common duct by foregoing their existing investments, however, their voluntary participation should be encouraged.
4. If a utility corridor is available, then both ROW and restoration issues will automatically be sorted out and it would facilitate quicker development of Telecom Infrastructure. Therefore, it is important to include clear cut and unambiguous rules for sharing of common duct in the ROW Rules with indicative charges. The Authority should recommend a “Dig Only Once” policy for laying of all Telecom infrastructure projects. These recommendations should be exhaustive and should cover the procedure of

sharing common facilities such as MHs, HHs etc., along with directions for additional security of this infrastructure in order to ensure Network stability.

5. The development of common ducts infrastructure will help in speedy infrastructure deployment at a very marginal cost. Further, with the daunting concerns of approvals and restoration addressed beforehand, it will help bring in more investment in infrastructure sector.
6. We further submit that for success of this policy and for proliferation of Broadband, the commercial terms for using the Common Duct should be reasonable and a standard ceiling rate may be prescribed by Authority. We submit that already many cases are coming up where the local Authorities are demanding exorbitant charges for using Common Duct. Such anti-consumer actions need to be prevented at source.
7. We further suggest the formulation of **National inventory** of the fiber to ensure strong governance and transparency for infrastructure sharing. **National Fiber Exchange** may be created and governed by the proposed Fiber Authority to trade on available and utilized capacities.
8. There should be **mandatory sharing of existing fiber** that lies unutilized today across multiple TSPs, PSUs and utility organizations to drive new investment in uncovered areas.
9. **There is also a need to facilitate cross sector infrastructure** sharing by defining a framework by the proposed Fiber Authority to enable mandatory sharing of already built pathways, ducts, fiber infrastructure by several key entities such as many key entities, including state Telcos, Railways, Oil & Gas, Powerlines & State Electricity Boards, and even state-driven fiber infrastructure SPVs.
10. Requirement of focusing on Metros and Top 100 cities to improve availability and affordability of FTTH/ fixed broadband services.

Q.13: Is there a need to specify particular model for development of common ducts infrastructure or it should be left to the land-owning agencies? Should exclusive rights for the construction of common ducts be considered? Justify your comments with reasoning.

And

Q.14: How to ensure that while compensating the land-owning agencies optimally for RoW permissions, the duct implementing agency does not take advantage of the exclusivity? Justify your comments with reasoning.

ASSOCHAM Response:

1. In order to maintain a uniform and standardized implementation and inclusive growth of telecom infrastructure, it is important to have a standardized duct design for common ducts. The common duct design can be agreed upon post taking inputs from all stakeholders.

2. The representation of Land owning agency should also be included in these deliberations and they should be persuaded to build this common duct with a standardized design at justifiable and transparent cost. The cost can also be shared by Users, wherever required.
3. However, for the success of the model and for building a robust telecom backbone infrastructure, the Land owning agency creating the common duct should be convinced of the overall benefits of this measure and should be focused only on recovering its cost from users and should not use it as profiteering avenue.
4. We submit that clear and unambiguous guidelines of execution under a common duct policy are also required for Smart City concept. In order to promote investments and derive maximum benefit of these policies, a standardized rate card across all Smart Cities should be implemented through Act / Rules.
5. We submit that exclusive rights for construction should not be considered as there can be many unforeseen exigencies that can require additional digging, and, in such cases, it is better to avoid dependence on exclusive rights holder.
6. Fixed utilization fees of ducts constructed by state / private agencies along the road at Rs. 1,000 per Km per annum for laying OFC should prevent any undue advantages of the rights of Common duct owner.

Q.15: What could be the cross-sector infrastructure development and sharing possibilities in India? Justify your comments with examples.

ASSOCHAM Response:

1. One possible candidate for cross-sector infrastructure development is the power sector. To deliver benefits of such cooperation, co-ordination with State Electricity Boards and DISCOMS is required for persuading them to share their existing infrastructure for aerial cabling for creation of Telecom Infrastructure in Type2/Type3 cities.
2. Reciprocal sharing of existing telecom infrastructure can also be offered, wherever feasible to such agencies. We submit that this cooperation, while already being worked out at various levels, would be greatly helped by laying of uniform guidelines for such cross-sector infrastructure development.
3. Other opportunities could include the various authorities or developers share their space and land with cable laying infrastructure developer for faster laying of OFC cable.

Q.16: Whether voluntary joint trenching or coordinated trenching is feasible in India? If yes, is any policy or regulatory support required for reaping the benefits of voluntary joint trenching and coordinated trenching? Please provide the complete details.

ASSOCHAM Response:

1. We believe that the coordinated trenching model will be a preferred approach as it will ensure that the task of laying fibre is done in an expeditious manner. As noted by the authority, the ROW portal will be an effective mechanism to achieve this objective.

Q.17: Is it advisable to lay ducts for OFC networks from coordination, commercial agreement, and maintenance point of view along with any other utility networks being constructed?

ASSOCHAM Response:

1. Yes, it will be advisable to lay ducts for OFC networks from coordination, commercial agreement, and maintenance point of view along with any other utility networks being constructed, however, for success for such measures, it is imperative that the cost of utilization fees of ducts constructed by state / private agencies along the road should be kept at minimum. As mentioned earlier, we recommend a fee of Rs. 1,000 per Km per annum for laying OFC.
2. Broadband over Power Lines BPL is the delivery of broadband over the existing low- and medium-voltage electric power distribution network. BPL speeds are comparable to DSL and cable modem speeds. BPL can be provided to homes using existing electrical connections and outlets. BPL can use existing power lines decreasing the cost of installing a new transport infrastructure and the ability to connect a modem to any electric receptacle. BPL also sends and receives data at the same high speed. You can upload mail, video files, and business data as quickly as you can download similar files.

Q.18: What kind of policy or regulatory support is required to facilitate cross-sector infrastructure sharing? If yes, kindly provide the necessary details.

And

Q.19: In what other ways the existing assets of the broadcasting and power sector could be leveraged to improve connectivity, affordability, and sustainability.

ASSOCHAM Response:

1. We understand that a major prerequisite for cross sector infrastructure sharing is clear cut policy guideline of sharing of the cross sector infrastructure at a standardized minimal cost that would suit all stakeholders. Commercial parameters including licensing conditions should be clearly defined with specific guidelines which are at par with prevailing market scenario and provisions for update when the situation changes.
2. We submit that there is no restriction on leveraging existing assets of other sectors to improve connectivity, affordability, and sustainability, however, once policy guidelines

and commercials are in place for such cross-sector sharing then such arrangements can take off in right earnest.

3. In order to promote infrastructure sharing within the sector, the TSPs should be allowed to claim as pass through charges the charges paid to another TSPs for leasing of Infrastructure. It should include the Access facilitation charges and colocation charges paid to the Cable Landing Station owner. The Telcom operator leasing the infrastructure is paying the License fee on the revenue and the benefit of pass through would ensure that the assets of the nation are efficiently utilized and avoid wastage of resources in building duplicate infrastructure.

Q.20: For efficient market operations, is there a need of e-marketplace supported by GIS platform for sharing, leasing, and trading of Duct space, Dark Fibre, and Mobile Towers? If yes, then who should establish, operate, and maintain the same? Also, provide the details of suitable business model for establishment, operations, and maintenance of the same. If no, then provide the alternate solution for making passive infrastructure market efficient.

ASSOCHAM Response:

1. As rightly observed in the consultation paper, there are Infrastructure builders such as Broadcasting companies, Power companies, Utilities, Highway developers etc, which have built their infrastructure at significant cost. It would be only fair that in case such infrastructure is to be shared it should be based on sound economic principles and ensure that they receive their due return on the assets created.
2. Towards this objective, we support the formation of an e-marketplace supported by GIS platform to offer the Assets to be offered in a competitive manner to the Service providers of their choice and based on fair compensation as entered by them on the eMarketplace. Once the economic process is in place, the RoW can not be used to then force sharing of infrastructure irrespective of the value received against the infrastructure shared.

Q.21: Even though mobile broadband services are easily available and accessible, what could be the probable reasons that approximately 40% of total mobile subscribers do not access data services? Kindly suggest the policy and regulatory measures, which could facilitate increase in mobile broadband penetration.

ASSOCHAM Response:

1. We submit that it is important to incentivize the rollout of Broadband, be it wireline or wireless 4G/5G in the country. Accordingly, we submit the following incentive for improving the Broadband adoption.
 - a. Reduction in USO levy from 5% to 2% of AGR

- b. License Fee reduction from 3% to 1% of AGR
- c. Spectrum Usage Charge reduction by 3%. Applicable only to wireless revenues
- d. Exemption of GST on Government Payments such as Spectrum Auction payment, LF, SUC payment;
- e. Refund of accumulated input GST credit.
- f. Waiver of custom duty for all CPEs and network elements involved in provisioning of the broadband

We submit that these measures will encourage the operators to invest more into 4G/5G technology and improve availability of mobile broadband services especially in the rural areas and increase subscriber base using mobile broadband.

Q.22: Even though fixed broadband services are more reliable and capable of delivering higher speeds, why its subscription rate is so poor in India?

And

Q.23: What could be the factors attributable to the slower growth of FTTH subscribers in India? What policy measures should be taken to improve availability and affordability of fixed broadband services? Justify your comments.

ASSOCHAM Response:

1. The Authority has aptly noted that reason for limited subscription of fixed broadband in the country i.e. *'provisioning of wireline broadband services is capital- and manpower-intensive, and a time-consuming activity, and its maintenance is also challenging.'*
2. We submit that institutional roadblocks in the form of delay and denial of ROW permissions, exorbitant charges have prevented the laying for Fiber/copper cables in major parts of the country. The Government and Authority are cognizant of these issues, which led to eventual issuance of ROW Rules, however, these rules need many improvements alongwith a statutory backup to be more effective, as discussed in previous responses. However, till such reforms are carried out, fast paced growth in FTTH segment will remain a challenging task.
3. The Authority has rightly identified another major bottleneck in Fixed broadband proliferation is the access into the buildings. Mandatory access without charge to each building including households for fibre/copper needs to be ensured. Hong Kong has already mandated this in their building code. Further, in case of electricity distribution companies which are also licensed entities, the access to the building to such licensees is mandatory and on the contrary the building owner pays for the installation. Final NOC of the building is not given without the mandatory electricity connection. Similar provision

in law has to be brought in to ensure that operators get access into the buildings/premises.

4. The Authority should engage with the Ministry of Housing and Urban Affairs to ensure appropriate changes in Building Code to mandate the RWAs to provide free of cost access to lay Broadband infrastructure in societies and residential complexes. There are multiple instances including during the current pandemic, where the building owners do not allow equal access to all operators. The operator who has been provided access is unable to provide the services or meet the QOS norms, but the building owners do not allow other operators access to deliver services to the subscribers.
5. We would also bring attention to other prohibiting factors in growth of fixed wireline services. As voice is an intrinsic bundled service of a wireline connection, the existing SDCA based POI structure of BSNL is a daunting task for any new service provider. While the Authority has implemented a few reforms vide the Telecommunication Interconnection (Second Amendment) Regulations, 2020 dated 10th July 2020, we are constrained to state that this falls way short of the expectations, nay requirements to give boost to FTTX penetration.
6. .

Q.24: What is holding back Local Cable Operators (LCOs) from providing broadband services? Please suggest the policy and regulatory measures that could facilitate use of existing HFC networks for delivery of fixed broadband services.

ASSOCHAM Response:

1. We submit that LCOs can be effective in delivering Broadband in many congested areas with limited possibility of delivering FTTX however the onerous licensing regime is seen as a major stumbling block. A light touch future fit regime for all including existing licensees could encourage entry of new players, greater competition and growth. However no policy or regulatory measures should be recommended that create a non-level playing field.
2. Alternatively, **LCOs can be encouraged to tie up with the TSPs similar to IPs** for building a quality network, which will resolve their issues around quality and response time for complaint resolution.
3. It may also be noted that the unstructured aerial cable method, while cheap, quick and adequate, could pose problems in bad weather and it is better to have permission from municipalities or discoms to lay structured aerial cable over electricity poles.
4. For accelerated growth of cable broadband, a harmonised effort is required by the industry, policy makers, regulators and other stakeholders. Local bodies need to be encouraged to set up common ducting where a large fibre bundle can be deployed that can be leased by them to all users, particularly data providers — cable, telco and ISP.

5. Shared common telecom infrastructure (CTI) is also the best available option for proliferating cable broadband in rural areas.

Q.25: When many developing countries are using FWA technology for provisioning of fixed broadband, why this technology has not become popular in India? Please suggest the policy and regulatory measures that could facilitate the use of FWA technology for delivery of fixed broadband services in India.

ASSOCHAM Response:

1. We submit that the fixed wireless access (FWA) segment, with limited used cases, has not been very successful in many parts of the world. Its main use case remains enterprise or rural connectivity wherever the costs of laying Fixed networks are prohibitive. However, the expected launch of 5G networks with associated features like network slicing etc, has further impacted the enterprise use case for FWA
2. Despite this, it can be a popular choice for office broadband in many congested areas, as per Global mobile Suppliers Association (GSA), which has even announced launch of a working group to standardize the FWA segment.
3. We submit that FWA's success is being predicted in the developing markets on the back of ubiquitous 4G coverage and onset of 5G NR. This is being seen as a base mobile technology to provide the main broadband connection for a home or business. However, as in rest of the developing markets, the main factor blocking its growth remains the prohibitive cost of additional device and congested mobile networks.
4. However, with expectation of more 4G spectrum with operators, launch of 5G and standardization of equipment by GSA, this service can also take off. However, it is not expected to be an all-weather substitute to main wireline Broadband access.
5. To facilitate the use of FWA technology for the delivery of fixed broadband services, **sufficient access spectrum** should be made available at **affordable prices** to the operators.

Q.26: What could be the probable reasons for slower fixed broadband speeds, which largely depend upon the core networks only? Is it due to the core network design and capacity? Please provide the complete details.

And

Q.27: Is there a need of any policy or regulatory intervention by way of mandating certain checks relating to contention ratio, latency, and bandwidth utilisation in the core network? If yes, please suggest the details. If no, then specify the reasons and other ways to increase the performance of the core networks.

ASSOCHAM Response:

1. Core networks are **not the bottlenecks** for slower fixed broadband speeds, as these are easily scalable.
2. The slower broadband speed could be due to a multitude of reasons such as lower fiber infrastructure, lower **quality of fiber** as the legacy fixed networks have last mile still primarily dependent on copper
3. Other reasons could be the high and frequent fiber cuts occur and multiple splicing and patches on the fiber network lead to lower quality of fiber with time, limitation of fiber pairs, insufficient bandwidth provisioned by content providers, absence of content serves for some application providers and higher loading on content serves.
4. Yet another reason could be the lack of proper ducting in old buildings hampering the cables at many instances, exposing them to external factors, thereby impacting the last mile connectivity and consequently the average speeds of fixed broadband.
5. Hence any checks relating to the core network performance **are unwarranted** and we do not recommend any policy or regulatory intervention by way of mandating certain checks in the core network.
6. The better approach will be to give a focused attention to the implementation of ROW Rules and also collaboration with other Government agencies to ensure the common ducts, and mandatory provision and access for ducting in new buildings and housing complexes. These measures will have long term impact on the Broadband speeds in the country.

Q.28: Should it be mandated for TSPs and ISPs to declare, actual contention ratio, latency, and bandwidth utilisation achieved in their core networks during the previous month, while to their customers while communicating with them or offering tariff plans? If no, state the reasons.

And

Q.31: Should it be mandated to TSPs to declare actual congestion, average across the LSA, recorded during the previous month over the air interface (e.g., LTE Uu), in the radio nodes (e.g., eNB) and/or over the backhaul interfaces between RAN and CN (e.g., S1-u), while reaching out to or enrolling a new customer? If so, then suggest some parameters which can objectively determine such congestions. If no, then specify the reasons and other ways to increase performance of the RAN.

ASSOCHAM Response:

1. No. We submit that already the customer is provided with the necessary information that helps her make an informed choice of a tariff plan i.e. speed (or technology in mobile services) and data quota allocation at that speed with applicable charges. Any more information alongwith the tariff plan will be too much information with a regular consumer not even understanding what all these details imply.

2. Hence there **should be no mandate** for TSP's and ISPs to declare, actual contention ratio, latency, and bandwidth utilization achieved in their core networks during the previous month to their customers while communicating with them or offering tariff plans. or **declare actual congestion**, the average across the LSA, recorded during the previous month over the air interface, in the radio nodes, and/or over the backhaul interfaces between RAN and CN, while reaching out to or enrolling a new customer
3. We again emphasize that it is the ROW issues that need to be handled on an urgent basis.

Q.29: What could be the probable reasons for slower mobile broadband speeds in India, especially when the underlying technology and equipment being used for mobile networks are similar across the world? Is it due to the RAN design and capacity? Please provide the complete details.

ASSOCHAM Response:

1. The possible reasons for apparently slower mobile broadband networks in comparison with global peers have to be sought beyond the Core network, RAN design as the Authority has rightly noted that the technology and equipment used for wireless broadband are standardized across all operators in the world.
2. The areas of concern lie in the high rates of regulatory levies, the delays in ROW approvals and rollout of infrastructure, the high cost of ROW, the abysmal allocations of backhaul that are simply not adequate to cater to the exploding growth in broadband traffic. Network traffic and per user voice MoUs have doubled and data usage increased by whopping 45 times with over 3.5 times as many wireless broadband users in the country since 2016. While there have been several rounds of spectrum auctions for access spectrum, **allocation of backhaul has simply not kept pace.**
3. Allocation of access spectrum in line with the spectrum holdings of global peers is also desirable, **however restoration of the financial health of the sector to robustly invest in spectrum and infrastructure is of critical importance.**

Q.30: Is there a need of any policy or regulatory intervention by way of mandating certain checks relating to RAN user plane congestion? What should be such checks? If yes, then suggest the details, including the parameters and their values. If no, then specify the reasons and other ways to increase performance of RANs.

ASSOCHAM Response:

1. We do not see the need for such an intervention.
2. The Authority should continue the critical role played by it in ushering in spectrum reforms in the country over the years. It has the responsibility to evolve policies to

achieve two of the missions of National Digital Communications Policy, 2018 (NDCP-2018) i.e. Connect India and Propel India alongwith its statutory requirement of ensuring orderly growth of the sector.

3. We believe that the **crucial requirement today is of high capacity backhaul to cater to the huge broadband traffic** being generated through mobile networks. Lack of adequate microwave spectrum, and non-availability of E and V bands to TSPs are significant challenges in delivery high quality broadband to consumers. This issue must be addressed on priority. The Authority also needs to consider that the emerging high requirements of backhaul for the 5G roll-out, meeting NDCP-2018 objectives and associated national goals requires availability of requisite backhaul spectrum. It should facilitate more backhaul carriers being made available, especially in high capacity bands for TSPs so that the industry can meet demands of exponentially growing traffic and transition towards 5G. Further, the Authority is requested to recommend immediate allocation of backhaul spectrum and rationalizing of the backhaul charges to further spur the growth of broadband.
4. The High-level Forum of DoT has noted the need for making available spectrum for IMT in <1 GHz (UHF) < 6 GHz bands (3.3-3.6 GHz) by 2018 and making available 200-1000 MHz in higher frequencies and 10-200 MHz in lower frequencies per operator each license area for 5G services, including allotting all identified bands in AI 1.13 to be allotted by 2020.
5. We are gratified to note that the Government has constituted a Panel of Secretaries under cabinet secretary Shri Rajiv Gauba to streamline the spectrum allocation process and examine the possibility of drawing up an annual calendar for auction of airwaves that will give telcos a clear road map of the quantum as well as the frequency of spectrum on offer for commercial use
6. The Authority should also focus on another NDCP-2018 initiative to 'Further liberalizing the spectrum sharing, leasing and trading regime' and remove the inhibiting roadblocks in these policies while also issuing a policy for Spectrum leasing.

Q.32: Is there a need of any policy or regulatory intervention by way of mandating certain checks relating to consumer devices? If yes, then please suggest such checks. If no, then please state the reasons.

And

Q.33: To improve the consumer experience, should minimum standards for consumer devices available in the open market be specified? Will any such policy or regulatory intervention have potential of affecting affordability or accessibility or both for consumers? Please justify your comments.

ASSOCHAM Response:

- a) The devices have a significant role in user experience. Some such instances include degraded experience of the second SIM on dual SIM handsets, un-availability of location based services, non-support of prevalent frequency bands, VoLTE and VoWifi and enhanced Codecs etc.
- b) It is, therefore, important to mandate device certification in the country. The country may adopt GCF certification of devices alongwith adherence to minimal certification defined for Indian network scenario and services.