

7<sup>th</sup> November 2020

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Telecom Regulatory Authority of India, New Delhi.

**Sub:** Comments on the Consultation paper on Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed

Dear Sir,

Atria Convergence Technologies Limited (ACT) is a class A – ISP and 3<sup>rd</sup> largest wired broadband service provider providing wired broadband services across 19 cities in India. We thank the Authority for providing an opportunity to give our comments on the consultation paper.

In the present circumstances, the broadband industry (fixed and mobile) have played a major role in connecting people and to carry out day today activities. The Government, private enterprises as well as the common public are relying more on the use of broadband connectivity for interaction in comparison to physical connectivity such as Rail, Road, or Air transport network. The country has virtually run on broadband connectivity during the lockdown period, be it education, medical, shopping etc. In the post pandemic era, like potable water and electricity, access to broadband would be a basic necessity. The use of telecom and internet connectivity will feature extensively in daily life, and in a sense, broadband would become a basic need of the common man. The widespread availability and use of broadband have both economic and social benefits.

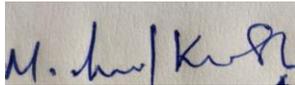
We are submitting our comments on the questions raised by the Authority in the consultation paper, as Annexure to this letter. The key principles and the approach based on which we have provide our comments are as follows:

- The definition of Broadband needs to be reviewed and shall be based on both upload and download speeds. The Minimum Broadband speeds for Mobile (wireless) may be fixed at 2 Mbps and for fixed (wired) at 5 Mbps.
- To enable customers to choose the right Broadband that would cater their needs, Broadband speeds can be categorized into three (i) Basic Broadband (ii) Fast Broadband and (iii) Ultra-fast Broadband.
- There is need for recognition of Digital Infrastructure such as Optic Fiber cable Network and Telecommunication Network as a **“National Critical Infrastructure” & “Public Utility Service”**.

- Two tier single governing council/mechanism at central and state level such as:  
*At Central Level: Formation of “**Digital Infrastructure Council**” which will be akin to a GST Council that shall have members of all critical ministries from both central and state Govts.*  
*At State level: An Administrative body i.e. a **Single Authority** which shall ensure issuance of ROW permissions through single window system at uniform rates in transparent and non-discriminatory manner.*
- The Digital Infrastructure Council shall have powers to prescribe the manner, policy and uniform charges for issuance of ROW permission in respect of Underground Cable and Overhead Cables and ensuring adoption of ROW rules by every state & local Authorities.
- Recognition of the importance of Overhead infrastructure and its role in rendering seamless last mile connectivity and policy framework to implement the same instead of passively resisting the same which is the practice with many Local Authorities as on date.
- Providing wired broadband connectivity should be encouraged through incentives such as license fee waiver for wired broadband business, ease in ROW procedures, simplified licensing, promoting convergence, etc. Redundant licensing framework which does not actively encourage interconnection between ISPs for resale of bandwidth and provisioning of up to date services which is the need of the hour.

Yours Sincerely

For Atria Convergence Technologies Limited



M. Anand Krishna

Authorised Signatory

Encl: Annexure – Our Comments to the questions raised in the Consultation Paper.

**ANNEXURE**

**Comments on the Consultation paper on Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed**

This consultation paper touches upon four key areas i.e. (i) Defining fixed and mobile Broadband (ii) Innovative approaches for infrastructure creation (iii) Promoting broadband connectivity and (iv) Measures to be taken for enhancing broadband speed, in which the Authority is intending to provide its recommendations to DOT. We would like to submit our comments on the questions below as follows:

**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**

Yes, the definition of Broadband requires review by the Authority. The Term “broadband” has become commonplace for describing the future of digital communications. It is true that general public, Governments and Private enterprises are utilising the broadband for day-to-day activities like electronic communications, e-governance, infotainment, shopping, education, healthcare, skill development, and financial services. We suggest that the definition has to be independent of the capability of the underlying medium or technology adopted by each service providers but should be based on speed, customer experience, ease the understanding of the common customer and enable him to choose the services as they need.

**a. Common or separate for fixed and mobile broadband?**

The definition has to be based on Indian subscribers use of Broadband services and customer ease in understanding and choosing the services providers accordingly. Hence the Definition has to be separately provided for **fixed (wired) and mobile (wireless) broadband services.**

**b. Dependent or independent of speed and/or technology?**

The Broadband service is provided through the following transmission technologies:

- i) Digital Subscriber Line (DSL)
- ii) Cable Modem
- iii) Fiber
- iv) Wireless
- v) Satellite
- vi) Broadband over Powerlines (BPL)

The end use of a broadband connection is similar irrespective of the technology used. Hence the definition of broadband has to be based on Speed and should be independent of technology.

**c. Based on download as well as upload threshold speed, or threshold download speed alone is sufficient?**

Generally, the download speed is much higher than the upload speed of a broadband. In recent times, especially during the Work from Home and School from Home scenarios where usage of peer to-peer applications such as video conferencing and social media have increased, the upload speed has also become significant. The customer experience would be much better only when both download and upload speeds are equal, hence the definition should include both download and upload speeds.

**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?**

The definition has to be easily identifiable & understandable to common customers to choose the service providers according to their needs. Hence, we suggest the definition needs to be independent of the capability of the underlying medium or technology adopted by each service providers and has to be based on actual speed delivered through fixed (wired) and mobile (wireless) broadband services.

**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.**

**Definition for Fixed (Wired) Broadband Services:**

*“Broadband is an always on data connection that is able to support interactive services including Internet access and has the capability of the minimum upload and download speed of 5 Mbps to an individual subscriber from the point of presence (POP) of the service provider intending to provide Broadband service.”*

**Definition for Mobile (Wireless) Broadband Services:**

*“Broadband is an always on data connection that is able to support interactive services including Internet access and has the capability of the minimum upload and download speed of 2 Mbps to an individual subscriber from the point of presence (POP) of the service provider intending to provide Broadband service.”*

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

We feel that the definition of Broadband should be reviewed keeping the global benchmark and visions of NDCP policy 2018.

**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.**

Yes, there is a need for categorisation of broadband services based on speed. The common customer in India consume broadband internet through their mobile broadband. The Pandemic has significantly changed the consumers need and the usage of Broadband services. Hence, the need for categorization of broadband services based on speeds so as to enable common customers to make an informed decision and differentiate High Speed broadband service providers. The Broadband speeds (both upload & download) can be categorised in the below manner as followed in European countries.

- **‘Basic broadband’** for speeds starting from 2 Mbps up to 10 Mbps;
- **‘Fast broadband’** for speeds starting from 10 Mbps to 100 Mbps; and
- **‘Ultra-fast broadband’** for speeds higher than 100 Mbps.

**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.**

We feel that the current practice of measuring the speeds through Authority created tool or well renowned independent third-party tools or open source software may be continued.

**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.**

We submit that the Indian Telegraph Right of Way Rules 2016 (ROW Rules) acts only as guiding factor and only covers major aspects as how ROW approvals to be provided. However, it fails in having a binding effect on the state governments and various Local Authorities that fall under them. We feel that the implementation of said ROW rules has major issues as follows:

- a. Different procedures & policies followed by various Local Authorities in processing the ROW approvals

- b. The Local Authorities perceiving ROW Charges as revenue model instead of facilitating Digital infrastructure proliferation.
- c. Time taken by such Local Authorities in disposing the ROW applications
- d. Even the central authorities like Indian Railways, Airport Authority of India, Metro Rail, etc. had not adopted the ROW rules as the same is not consonant into their Departmental Rules.

**Status of Public Utility and OFC Network as Critical Infrastructure:**

The broadband internet services have been one of main industry which is now holding and carrying the Indian economy during these difficult times. The Govt. of India has already declared telecom and internet broadband services as Essential services during this pandemic. Hence it is of the prime important to declare telecommunication and its infrastructure as public utility. Further the Optic fiber cable network infrastructure has been susceptible to intentional cuts and damage by anti-social elements. Hence there is a need to recognize telecom and optic fiber cable infrastructure as critical infrastructure and as Public Utility services.

**Need for Recognition of Overhead Cables permission in many states:**

Though the ROW rules recognise the Overhead cable permission, many of the states and cities has no proper permission framework and service providers lay the Overhead cables as Defacto affair but not Dejure. Overhead cable has been important mode of infrastructure deployment in many developed countries and a country like India which has got a huge potential to connect and provide broadband internet services cannot afford to restrict itself by only recognising Underground cable (prevalent practice). The permission to install overhead fiber would be another biggest enabler for ISPs to provide cost-effective broadband services as the installation and operational maintenance of overhead fiber is much faster and far cheaper than buried OFCs.

**Difference in Charges levied by various Local Authorities:**

Though 18 states had adopted the ROW rules, it is pertinent to note that the Service Providers continue to face huge difficulty when it comes to levy of ROW charges as the charges varies drastically from one Local Authority to other. The ROW charges are perceived as revenue streamline even in the States which had adopted the ROW rules. ROW rules had done very little to assuage the difficulties. The purpose of adoption of ROW rules by such states gets defeated when it's not honoured by local municipalities / Self-governing bodies like Municipal Corporation, Nagar Palika, Nagar panchayats, Zilla panchayats, Gram panchayats etc. It is submitted that the charges prescribed by ROW rules are as follows:

**Charges applicable for Underground infrastructure as per ROW Rules:**

<b>Provisions under ROW Rules</b>	<b>Amount in INR</b>	<b>Remarks</b>
Administrative expenses for processing the application	Shall not exceed Rs. 1000 per kilometre	One-time charges
<i>Payment of restoration charges</i>	As may be specified by the appropriate government	Either payment of Restoration of charges or Bank Guarantee for an amount in lieu of expenses for restoration of such damage as security for performance and discharge of responsibility as per permission by granted to the Applicant

The ROW charges for underground cable are being levied exorbitantly and being seen as a source of revenue stream by the Local Authorities instead of charging only for the Road

restoration charges as prescribed under ROW rules. In many places the ROW charges are more than the cost/value of the infrastructure being laid.

**Charges applicable for Overground infrastructure as per ROW rules**

Provisions under ROW Rules	Amount in INR	Remarks
Administrative expenses for processing the application	Shall not exceed Rs. 10000/- Per application	One-time charges
<i>Payment of Restoration of Charges and Compensation for immovable property provided the said immovable property is unlikely to be used for any other purpose.</i>	Assessed on such rates as that appropriate authority may, by general order specify	Either once or annually.

Overhead cable permission is not yet recognised as policy and even if it is recognised the charges are being levied as rental basis irrespective of such immovable property is capable of use of any other purpose or not. **Ex:** A Local Authority which grants permission to lay Overhead OFC in pursuant to a GO, also mentions a clause that the ROW rental charges per pole shall be increased Year on Year @ 10% from the last prevailing rates. It is not clear as to why the ROW rates needs to be increased at such exorbitant rates.

Hence there is urgent need for **centralized authority** coordinating across various states, municipal corporations, panchayats and government bodies ensuring the adoption of ROW Rules which is equivalent to GST Council.

**Other issues in ROW permission faced by Wired ISPs like us:**

- The window of time for implementation from the date of issuance of ROW permission has to be reasonable as the deployment of the projects has high gestation period. Many a times with great difficulty permissions are obtained and restrictive conditions such as Monsoon ban etc., are immediately imposed thereby rendering the entire permission infructuous.
- ISPs today are subject to disparate permission issues as they need to seek approvals from multiple authorities such as Traffic Police, Sewerage, Electricity, et al apart from respective Local Authorities and the process is tardy.
- The OFC network is high on Capex and involves high time consuming on maintenance. The activities such as road expansion, laying of electrical cables, water pipelines etc. that are undertaken by local authorities results in frequent fiber cuts thereby resulting in huge impact on the operations and maintenance cost of the Service providers. Govt authorities should exercise caution and not to damage overhead and Underground cable infrastructure while carrying out civil and municipal works.
- Lack of transparency at all steps, disparity in ROW issuance, damage redressal, formal charges being levied only to some of the operators on Overhead infrastructure. The whole process has to be on parity principle and made very transparent.
- Uniform and binding policy for all bodies like Discom, Municipal Authorities, NHAI, State/Municipal roads, Panchayats etc for both Overhead and Underground cable infrastructure. However, differentiated rates for TSPs and pure play cable ISPs.
- There is always a demand from Resident Welfare Associations, Builders, apartment associations and local cable Operators for a hefty fee or revenue sharing to allow wired broadband services to establish the network within their campus/area.
- The denial of ROW permission for underground or Overhear permission does not back with any reasoning or scientific information.
- Many a times, service providers are left in lurch to figure out who would be the Appropriate Authority to submit its application and seek permission for particular

roads. In many instances, where in closely knit areas within cities, more than one Govt. utility departments claim jurisdiction over the stretch for which ROW is being sought and many a times, the operators are left with no other choice but to apply permission from both the departments eg. main roads in Panchayat Areas to be claimed by both PWD and Gram Panchayats.

The above highlighted pointers are some of the important roadblocks and are indicative in nature.

We suggest that the Authority may recommend the following measures in making ROW rules more effective:

1. Declare the status of **“National Critical Infrastructure”** & **“Public Utility Service”** to Telecom Infrastructure and Optic Fiber Cable infrastructure.
2. Formation of **“Digital Infrastructure Council”** which will be akin to a GST Council that shall have members of all critical ministries from both central and state Govts. The said Council shall have powers to prescribe the policy and charges for issuance of ROW permission in respect of Underground/Overhead Cable infrastructure and ensure adoption of ROW rules across the states and the Local Authorities.
3. Policy should allow (a) Underground fiber in select main roads and (ii) structured shared Overheads in roads other than main roads in all cities.
4. Recognise, legislate and adopt Overhead infrastructure at each States in line with ROW rules.
5. Recognise the importance of Fiberisation and importance of wired broadband services and prescribe a fixed underground and overhead ROW fees for a minimum of period of 10 years without any annual escalation year on year.
6. At State level - An Administrative body i.e. a **Single Authority** which shall ensure issuance of ROW permissions in transparent and non-discriminatory manner.
7. **Single window system** to co-ordinate for provision of **“ROW permission”** and **“No Objection Certificate”** (NOC) from various agencies such as local authorities, panchayats, Public Works departments, electricity board and such other departments.
8. The said Administrative body at each State level should be assigned with power and responsibility of redressal of disputes between Service provider and Local Authorities with regard to ROW permission and execution of cable laying etc.
9. Appropriate clauses in the building design parameters of all new infrastructures (ports, airports, railway, roads & highways, residential, commercial and office buildings etc) be made for including space/ducts for telecom related services at the time of building approvals.
10. Prescribing proper protocols for carrying out operations and maintenance activity and there should not be any further charges for carrying out such maintenance activity except Road restoration by the Service Providers.
11. Ensure proper coordination between various stake holders within a State. All the stake holders are to be kept posted when any permission is granted or cancelled to any stake holder so that different Local Authorities do not claim right to grant permission over the same Road.
12. The Local Authorities declares the calendar and GIS mapping of road restoration, water & sewerage pipeline laying etc will proactively prevent the damages to the underground telecom OFC cable during such execution by local bodies.
13. Every city including metros may declare arterial and sub-arterial roads in which the permission for underground and overhead cabling may be mandated. The last mile connectivity through overhead cables in the residential areas should be permitted without any requirement for a ROW permission from any of the authority.
14. As stressed in point 1 hereinabove, the fiber infrastructure needs to be declared as **“National Critical Infrastructure”** and damage or sabotage of the same should be

recognised as cognizable offence and suitable penal actions needs to be enabled with appropriate legislation in place.

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

Two tier single governing council/mechanism at central and state level as proposed in question number 5 above.

*At Central Level: Formation of “**Digital Infrastructure Council**” which will be akin to a GST Council that shall have members of all critical ministries from both central and state Govts.*

*And*

*At State level: An Administrative body i.e. a **Single Authority** which shall ensure issuance of ROW permissions at uniform rates in transparent and non-discriminatory manner.*

**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.**

It would be ideal to ease the ROW permission process across the country as responded in question number 5 & 6.

**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.**

When it comes to ROW disputes, many a times, the Local Authority issuing the permission is also the same Local Authority which carries out the vigilance mechanism and issues notice. Hence, service providers are not able to openly challenge the notices issued by such Authority. The response submitted by the Service providers to various penalty notices issued by the Authority is received and not acted upon or rejected back after long time.

The proposed Administrative body i.e. a **Single Authority** at state level may be empowered with such power for redressal of disputes.

**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.**

Our comments to Question no 6 may be read as part and parcel of this query.

**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.**

The proposed Administrative body i.e. a **Single Authority** at state level, as proposed in question no 5 & 6 above, may consist of members as mentioned below

- Officer appointed by the Central Government under Rule 14 of the ROW Rules, 2016.
- Nodal officer appointed by State Governments as per ROW Rules.
- Appropriate representatives from all the relevant departments/Local Authorities.

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

There may be Private public Partnership (PPP) model between Local Authority which has rights over land and TSPs/ISPs/IP1s selected through open tender. The State level

administrative body may provide the ROW permission for laying of common ducts while the PPP partner invests in creation of infrastructure.

The central Govt. shall bring in necessary rules whereby common standards shall be laid down for creation of such common infrastructure ducts. Most importantly, necessary safeguards will also have to be taken to ensure there is no monopoly created by such TSP/IP1s who creates such common infrastructure and the ducts shall be made available at an open cost which may be duly fixed by an appropriate govt. authority from time to time.

This kind of arrangement would be a win-win situation for both service providers and the government agencies and will ease the process in establishing the following:

- Availability of common ducts along the roads and streets resulting into implementation of the 'Dig Once' policy.
- Once a common duct gets developed, it is no longer necessary to excavate the road or street every time when new fiber cable is required to be laid, and it can greatly simplify the task of maintenance.
- A service provider will just have to take on lease or purchase the micro duct for his cable. In this way, hassles of arranging ROW permissions would also be avoided.
- Easy upkeep and maintenance of the network and will benefit both the state govts and the service providers from coordinating with various stake holders for permissions and other follow ups.
- The leasing of common duct by PPP partner may be mandated through E-portal maintained by the administrative body at state level. B2B marketplace for available ducts and rates and terms for ducts usage should be with PPP partner's non-discriminatory terms.
- The availability of ducts in such common duct infrastructure may be made available in a transparent and non-discriminatory manner so that any licensed TSP/ISP/IP1 is able to apply and obtain the same.

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

In order to encourage the participation of private sector entities in laying common duct, a model followed in development of Airports and Metro Rail line may be adopted here. There may be proposed commercial benefits to said PPP partners in line with Airports and metro stations.

**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.**

The response to the Question no. 11 & 12 may please be referred.

**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.**

Our response to Question No. 11 & 12 may please be referred.

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

We strongly welcome the cross-sector infrastructure initiative proposed by the Authority and the Fibre First initiative which forms part of the NDCP 2018. The dream of Digital India as prescribed under the NDCP 2018 can only be achieved if both the central and state governments actively encourage the cross sector infrastructure initiative wherein service

providers are allowed to leverage the existing assets of other sectors such as Power, NHAI, Metro Rail etc., which will provide *improved connectivity, affordability, and sustainability*.

The departments under the central and state governments (Indian Railways, metro rail, DISCOM, corporations & Municipalities) needs to be mandated to issue overhead OFC permission policy. In order to achieve the goals of connecting more than 50% of households within 2022 as set out in NDCP 2018, appropriate policy support shall be provided by granting permission to use the streetlamp posts and electricity poles for laying Overhead cables. It is important to note that these infrastructures are readily available, and permission can be issued without any hazzle.

Till date all the Power sector related Utility companies are actively permitting renting/leasing out their underground infrastructure such as OFC ducts etc., even though this is a viable option for long distance routes, internally within the city limits where there are actual ROW challenge, it would be more conducive if the power Sector companies and various DISCOMs allow usage of the electricity poles for laying of Aerial OFC as the same is cost effective and easy to manage when compared to UG infrastructure within the city limits.

**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.**

Though it is a very good concept, the implementation of the same through policies in India at present does not look very promising. Also, the present policies do not prevent such actions.

**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?**

Our response to Question No. 11 & 12 may please be referred.

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

Our response to Question No 15 may please be referred.

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

With regard to Power Sector assets to be used for broadband connectivity, please refer the response provided in Question No. 15.

It is true that Cable TV Network's existing infrastructure could be utilised to provide internet or basic Broadband or narrowband internet services. Having said that the cable TV network has its own technical limitations in providing quality broadband services equal to the Global Benchmarks and hence the wired broadband networks has to be independent. The Cable TV network is predominantly running on Copper cables which has its own inherent limitations in providing hi-speed bandwidth.

Though the regulation and laws encourage competitive market to provide multiple choice to customers, however the ground reality is that there is huge monopoly in providing Cable TV services. The dominant LCO takes over a particular area by tying up with single MSO and completely stifles the competition by preventing entry of other LCOs and MSOs in the given area. In recent times due to convergence of technology, the LCOs see the wired broadband service providers as their direct competitors as broadband is slowly converging the gap between plain vanilla internet access and has started providing access to vast majority of contents that are available in OTT platforms. Hence wired ISPs are seen as a threat by the LCOs and the same usually results in sabotage of network assets of the wired ISPs. If wired ISPs needs to actively collaborate with LCOs, then above-mentioned prevalent practices in Cable TV industry should be curtailed and arrangements between ISPs and LCO should be left to market forces.

**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.**

As mentioned above a single window ROW portal may be created wherein service providers who create common duct infrastructure shall duly earmark the same by GIS platform. This will actively encourage in sharing of infra between service providers. However, proper care should be taken to ensure that the coordinates of critical network infra is duly safeguarded, and information is made available only to licensed Service providers who shall have authorised access to such portal.

**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.**

As we are a wired ISP, we do not have any comments to offer to this Question.

**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?**

It is not correct to state that the subscription rate of fixed broadband is low but the reach of the OFC network within the country is very low. Wherever the fixed broadband is available, it has been the most preferred mode of broadband access by the consumers. Hence, we believe that addressing the ROW permission issues will pave the way for proliferation of wired Broadband services.

**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.**

The wired broadband penetration is capital intensive and it's a difficult to lure Financial investors to this industry due to slow reachability, fees and taxes applicable on the sector. The slower growth of FTTH subscriber base in India is mainly attributable due to the complex and cumbersome ROW approval process, local issues faced from cable operators, Resident welfare associations and other external factors during expansion of network makes it a not so attractive revenue model. It is to be noted that ease in policy framework for promoting FTTH connectivity will result in service providers providing affordable and better quality of services which in turn will enable the public at large to subscribe to FTTH services.

Redundant licensing framework which does not actively encourage interconnection between ISPs for resale of bandwidth and provisioning of up to date services which is the need of the hour. Currently, there is a lot of scope between service providers where they can provide services to non-feasible areas and ensure proliferation of broadband services as mentioned under NDCP 2018 if clarity is provided on the above aspect. The authority and the licensor should clarify that providing bandwidth to another licensed ISP would only amount to interconnection and no separate permission or authorisation is required for the same

We believe the below mentioned relaxations in the ISP License conditions may encourage better proliferation of Broadband services and specifically attract more investments into wired broadband services which is the need of the hour as per NDCP 2018.

- *We suggest the wired broadband industry can be promoted by waiver of license fee on the wired broadband revenue*

- *The suggestions we had provided as our response to Query No. 5 when adopted and suitable changes are brought in the ROW Policy, the same will augment the adoption and faster roll out of fiberisation and wired broadband services in India.*
- *Resale of bandwidth between two ISPs needs to be permitted. The anomalies and gaps in the License agreement need to be cleared.*
- *The T&C for the Internet Telephony may be liberalized and the requirement of E-numbering for the same may be exempted which will enable ISPs to provide convergence of services in a better manner.*

**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.**

At policy level, from the National Broadband Policy 2004 onwards the Authority and Government promotes the convergence in the technologies and encourages the Local Cable Operator to get into Wired Broadband services but when it comes to AGR, the approach becomes opposite. This dichotomy has to be removed which will enable not only LCOs but all kind service providers to participate in wired in internet services.

**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.**

As we are a wired ISP, we do not have any comments to offer to this Question.

**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.**

The probable reason for slow broadband speeds in the country is due to the legacy last mile delivery technologies being used by many operators. Many technologies such as ADSL, VDSL, DOCSIS have limitation in terms of speeds. Core network design and capacity is not the main reason for the slow broadband speeds.

**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.**

We feel that there is no need for a policy or regulatory intervention for mandating checks like contention ratio or latency.

**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.**

We feel this is not required given the nascent stage of wired broadband industry in the country. As long as the service provider provides the advertised speeds through the entire day 24x7, and the speeds can be measured using third party tools by the customers, it should be good enough. Customer will be able to choose the appropriate service provider as per their choice.

**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.**

As we are a wired ISP, we do not have any comments to this Question.

**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.**

As we are a wired ISP, we do not have any comments to this Question.

**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.**

As we are a wired ISP, we do not have any comments to this Question.

**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.**

Given nascent stage of wired broadband industry in the country the same can be left to market forces. We feel that the Authority should intervene only if it notices market distortion. The Regulation should be Ex-post and should not Ex-ante regulations.

**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.**

The response to the Question No.32 may please be referred.