CONSULTATION PAPER ON ROADMAP TO PROMOTE BROADBAND CONNECTIVITY AND ENHANCED BROADBAND SPEED

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?

    Kindly 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.

[1]
- **The term "Narrowband / Broadband" is a misnomer in the parlance of recent technological advancement. The bandwidth demand is increasing at every slice of time one can think of.**
- **Therefore is needless to mention that bandwidth should not be naming criteria now rather the dedicated speed should be the emphasizing factor e.g. Ultra High Speed, Mega Downloads, Lightning Fast, Economy etc…. This should be separate for mobile and fixed.**
- **Threshold speed is for technical group and will not make much of an impact to the general class of users.**
- **The actual speed should be mentioned rather than "UPTO" which has become a painful itch to the consumers.**

NEW DEFINITION TO BROADBAND
The term BROADBAND should be changed "INTERNET x.y" this broadens the scope of the definition wherein "x" and "y" denotes download and upload speed in GB's respectively.
E.g. INTERNET 2.1, INTERNET 3.1, INTERNET 4.2 and so forth.

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

[2]
As per my consultation #1, the existing definition of broadband needs to be redefined afresh.

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.

[3]
The new naming strategy itself defines it's intrinsic category, therefore to new category need not be defined further.

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.

[4]
It is extremely important to have international standards of Quality of Service (QoS) in terms of contention ratio, latency, packet loss/drops, jitters, round-trip-time, Time to live (TTL) etc. to attain the very ground objective of digital India. The speed of the net depends of multiple factors of active and passive devices e.g. load balancers, firewalls, switches etc. with different policies set within but working in tandem not to mention about the RF transmitters, cables and fibres in the domain of effective functioning. A relative speed measuring technique should built with minimum functioning overhead in every modem and soft speed tester in mobile INTERNET x.y devices. Performance logs and alerts (below thresholds) should managed on-the-fly and retrievable for post-facto analysis.

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.

[5]
Apparently the RoW 2016 seems inline with the prima facie requirements of ICT, it is also necessary include a charter to time bound tribunal role in the present scenario.

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

[6]
Any other layer will intricate the process and have an overall delay in the process.

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.

[7]
With the changing of core technology and the roles should be reviewed / amended to align with the trends. As mentioned in my consultation #5 to include a charter to a0020time bound tribunal role be completed. The

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.

[8] All the disputed settled should be published in the public domain immediately on issuance of the verdict.

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.

[9]
Centre plays a vital role to built a cohesiveness between the state and local bodies in an non ubiquitous institutionalised model of rolling out RoW at the state levels, a working committee from the three levels should oversee the roll out. Similar to functioning of Railways, NHAI, Power Grid GAIL etc. A continuous evaluation and resolving of localised problems with the help of respective state CM's as a statutory figure of eminence /chairperson will ease out the rollout process to significant extent.

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.

 [10]
Additional standing committee in Answer 9 is referred to as working 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.

[11]
Laying of common ducts is time consuming, expensive, difficult to maintain and prone malicious activities. Instead we need to make use of existing network of railways, power lines and satellites. More emphasis be give on microwaves and similar wireless mode of non contented communication.

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

[12]
India being a diversified topographical country should avoid the duct concept and use the already stable networks mentioned in my suggestion #9 as the networking infrastructure.

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.

[13]

As mentioned in my consultation #9, the ducts will attract these inherent intricacies therefore should be avoided.

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.

[14]
A joint committee comprising of Nationalised bank/s and local municipality will jointly submit a report within a time limit to avoid any situational advantage. Land acquisition during metro rail setup can be referred. This activity should be brought under mission digital India initiative.

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

[**15**]
Any country in the technological parlance will not seem prudent to develop infrastructure development in silos. As mentioned in my consultation #9 sharing of resources in place will be most cost effective and expedited means of Infra development.

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.

[16]
This is non feasible in terms of speed, cost effectiveness and maintenance.

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?

[17]
This is not feasible in terms of speed, cost effectiveness and maintenance as stated in my suggestion #16.

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

[18]
Cross sectional support should come under an umbrella / apex body e.g. DoT to extend/monitor the infrastructure sharing, revenue sharing, governance and sustain the changing infrastructure in the long run.

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

[19]
This infrastructure and its relate assets can be collaterally used in [a] Defence [b] Aviation [c] Disaster control [d[Metrology [e] Clinical research [f] DRDO [g] Smart Cities to name a few among the many.

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.

[20]
Referring to my suggestion #9, the concept of duct is not cost effective and a viable answer to the need of the hour.

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.

[21]
Data access in mobile broadband per se is expensive, slow and inconsistent. The other cause is the fast draining of battery and uneasiness in screen manoeuvring owing to web page designs. On overcoming these above difficulties the usage of mobile broadband will certainly increase.

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?

[22]
India is still a developing country with per capita income lower to world standards. The basic amenities is in scarce and BROADBAND ranks far below to these basic needs. The spread of fixed BB is low and requires network devices and power for accessibility therefore the spread is not as expected. The response to restoring of services is also poor.

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.

[23]
Fibre-To-The-Home (FTTH) is still at its infancy. It is expensive and the spread is limited to few metropolis. More very few players extend this service and enjoy a monopoly. Over a period unless effective value addition and lowering of cost is attained it will not flourish great and slow down as we have seen DTH services,

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.

[24]

Personally I have faced the poor services of LCO having extremely inconsistent services without any accountability. LCO use outsourced infrastructure to extend the last mile, this leads to disputes and frequent outages with any prior intimations whatsoever. The service maintenance teams are under equipped and technically poor.

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.

[25]

We must remember that India is world most densely populated and unplanned country. Offlate the planning is in vogue but the FWA is limited to the last mile only, the back haul requires some form of cables to be laid. Only wireless network work will be successful in India, any form of cable laying has proved utter failure time and again. A Ericsson's 5G Consumer Potential study, 8 out of 10 consumers respondents to the study said that they will start watching YouTube and Netflix in 4K and will increase downloading of HD video content once 5G becomes available. This hints a clearly indicates the potential of FWA (more on mobile) will penetrate more into the Indian BB market.

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.

[26]

The uncanny allocation of excess contention ratio, overloading on the core network and absence service monitoring and poor rendering of service restoration at the critical junctures led to a below average performance of broad bands.

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.

[27]

There is an urgent need to formulate a policy and consumers regulatory forum preventing non abating measures to adhere the of Service (QoS) in terms of contention ratio, latency, packet loss/drops, jitters, round-trip-time, Time to live (TTL) with an impending penalty mechanism in place.

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 to their customers while communicating with them or offering tariff plans? If no, state the reasons.

[28]

This is an absolute necessity to the TSPs and ISPs with online customer feedback that can be fully back tracked.

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.

[29]
The cost reduction is technique invokes cheap quality / pre owned devices compromising on QoS. RAN is not monitored and network setting and maintenance is outsourced to vendors of quack knowledge. This results the overall fiasco.

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.

[30]
This is an absolute necessity to automated checks and controls be set up on the vital parameters of the network performance and be tracked and logged in the continuous automated process.

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.

[31]
It is very important to maintain a QoS on each uplink & down link frequencies, Quadrature Amplitude Modulation (QAM), Radio Network Controller (RNC) in an reactive proposition as of now in post-facto event analysis. The data of performance on-the-fly (realtime) should be available to the customers and logged appropriately for the month. A comparative representation of Bandwidth with QoS applied is significantly enhanced.
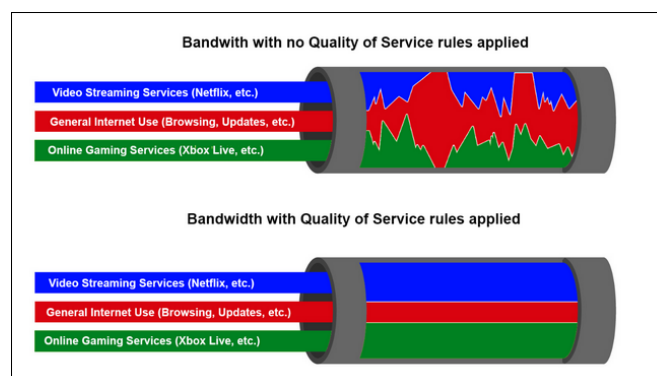
Q.32: Is there a need of any policy or regulatory intervention by way of mandating certain checks relating to consumer devices? If yes, then please suggest such checks. If no, then please state the reasons.

[32]
Consumer device/s must confirm to certain preset parameters by DoT prior to get enrolled as a broadband customer. These are the Device model & Media Access Control Address (MAC) details, IMIE number, OS etc. to help in monitoring the device remotely with self diagnostic tools mandatorily downloaded from ISP.

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.

[33]
To improve the overall BB service in India, as mentioned in my consultation #32, Consumer device/s must confirm to certain preset parameters e.g. Long-Term Evolution (LTE) radio access technology, IP Multimedia Subsystem (IMS) by DoT prior to get enrolled as a broadband customer. These are the Device model Consumer device/s must confirm to certain preset parameters by DoT prior to get enrolled as a broadband customer. These are the Device model. This remain as a prima-facie responsibility of the consumer to develop the broader sense of Digital India with an improvement of BB services.