

## **BIF counter comments on TRAI CP on Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed**

We note a vibrant response to this consultation paper and wish to issue the following supplementary responses to the following questions.

**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.**

Some respondents have suggested that the existing definition is sufficient, and that no revisions and/or reviews are required. Some others have suggested that since the market has evolved far beyond the current speed-based definition of 512 kbps, any definitions that prescribe a speed are unnecessary, and revisions, if any, must be limited to the core features (always on, high speed etc) of broadband access only.

It has also been argued by some that the current definition is sufficient, and any revisions to the speed of broadband would have a negative impact on both the availability & affordability of services. The same parties have also invoked the NDCP and suggested that a revision to the definition of broadband would impede the goals of the policy.

It should be noted that the NDCP was drafted in due consultation with all stakeholders and provides a roadmap for ensuring 'broadband for all'. Affordability and availability of services are fundamental components of the policy [1]. The NDCP states the following

*The National Digital Communications Policy, 2018 seeks to unlock the transformative power of digital communications networks - to achieve the goal of digital empowerment and improved well-being of the people of India; and towards this end, attempts to outline a set of goals, initiatives, strategies and intended policy outcomes.*

It also states that a primary task before policy makers is "to ensure that the advantages of the new technologies are accessible to all equitably and affordably" and that "India needs to particularly ensure that its communications infrastructure supports the entire population, whose demographic profiles vary widely across various indices such as literacy, economic conditions and urbanisation." The policy therefore sets the "Provisioning of Broadband for All" by 2022 as its primary strategic objective.

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<sup>1</sup> Department of Telecommunications, Government of India, 2018. *National Digital Communications Policy*, New Delhi, India: s.n [Online] Available at: [https://dot.gov.in/sites/default/files/Final%20NDCP-2018\\_0.pdf](https://dot.gov.in/sites/default/files/Final%20NDCP-2018_0.pdf)

We believe that the roadmap outlined by the National Digital Communication Policy, 2018 adequately addresses the objectives of ensuring affordability and availability, which are abundantly reflected in the ambitious targets set out under the 'Connect India' chapter.

- *Provide Universal broadband connectivity at 50Mbps to every citizen*
- *Provide 1 Gbps connectivity to all Gram Panchayats of India by 2020 and 10 Gbps by 2022*
- *Enable 100 Mbps broadband on demand to all key development institutions, including all educational institutions*

The Indian market is ready for an evolved definition of broadband that brings it closer to achieving the goals of the NDCP, and a modest revision to the current definition will have a significant positive impact on the state of broadband in the nation. The TRAI too has called for a similar revision to the definition of broadband [2].

Recommendation I.113 of the ITU Standardization Sector defines broadband as a transmission capacity that is faster than primary rate ISDN, at 1.5 or 2.0 Mbit/s [3].

Our analysis reveals that in practice, the recommendation above [4] has often been interpreted [5] as the ITU recommended definition by many nations and in many contexts.

A state aid evaluation by the European Commission in 2010, pertaining to the Lombardia region in Italy reveals that the above definition was adopted to study the digital divide in the region [6].

This definition has also been recognized as the ITU recommended standard in numerous journals & reports. Its use is found to be relatively common, and studies related to rural connectivity [7], geopolitics of internet access [8], and even patents [9] refer to the 2.0 Mbps standard as an ITU recommended definition of broadband.

The recommendation does however merit some context, in that the ITU does not prescribe a uniform definition for broadband access for use by all study groups and committees. It is understood that this is due to the abundant diversity of technological capability observed

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<sup>2</sup> Telecommunications Regulatory Authority of India, 2016. Report on need for reviewing definition of broadband. [Online] Available at:

[https://traai.gov.in/sites/default/files/Letter\\_to\\_Secretary\\_DOT\\_24\\_may\\_2016.pdf](https://traai.gov.in/sites/default/files/Letter_to_Secretary_DOT_24_may_2016.pdf)

<sup>3</sup> International Telecommunications Union, 2003. ITU Internet Reports 2003: Birth of Broadband. [Online] Available at: <https://www.itu.int/osg/spu/publications/birhofbroadband/chapter2.html>

<sup>4</sup> Ibid

<sup>5</sup> Economics Section, Parliament of Australia, 2010. Broadband telecommunications. [Online] Available at:

[https://www.aph.gov.au/About\\_Parliament/Parliamentary\\_Departments/Parliamentary\\_Library/pubs/Briefing\\_Book43p/broadband](https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/Briefing_Book43p/broadband)

<sup>6</sup> European Commission, 2010. State aid N 596/2009 - Italy | Bridging the digital divide in Lombardia. [Online] Available at: [https://ec.europa.eu/competition/state\\_aid/cases/233680/233680\\_1105731\\_34\\_1.pdf](https://ec.europa.eu/competition/state_aid/cases/233680/233680_1105731_34_1.pdf)

<sup>7</sup> Lawal, L. S. & Ahmed-Rufai, T. Y. R. C. C., 2013. Delivery of Broadband Services to Sub-Saharan Africa via Nigerian Communications Satellite.

<sup>8</sup> Centre for International Governance Innovation, n.d. *The Shifting Geopolitics of Internet Access: From Broadband and Net Neutrality to Zero-rating*, Ontario, Canada: Centre for International Governance Innovation [Online] Available at: [https://issuu.com/cigi/docs/gcig\\_volume\\_6web](https://issuu.com/cigi/docs/gcig_volume_6web)

<sup>9</sup> Barroso, J. M., 2005. *Universal ethernet telecommunications service*. United States of America, Patent No. WO2005122491A1 [Online] Available at: <https://patents.google.com/patent/WO2005122491A1/en>

across the world, and that the least developed nations would be held back in case an infeasible speed was defined as a standard. At the same time, the purpose of the recommended definition is largely fulfilled because of its use in a variety of contexts across the world.

After a thorough analysis of the issue, we are confident that the ITU recommendation can serve as a useful benchmark for reviewing the definition of broadband in India.

Additionally, the table below provides a snapshot of how some nations have chosen to define broadband with the aim to ensure high speed reliable broadband access is provided to consumers.

	Country	Definition of broadband
1	Canada	50 Mbps for downloads and 10 Mbps for uploads [10] [11]
2	USA	25 Mbps for downloads and 3 Mbps for uploads [12]
3	Brazil	1 Mbps [13]
4	Bangladesh	5 Mbps [14] [15]
5	Chile	5Mbps for mobile internet and 25Mbps for fixed internet [16]
6	UK	<p>Broadband is defined as “A data service or connection generally defined as being ‘always on’ and providing a bandwidth greater than narrowband connections”.</p> <p>Decent broadband is defined as “A data service that provides download speeds of at least 10 Mbit/s and upload speeds of at least 1 Mbit/s” [17].</p> <p>‘Decent broadband’ is ensured through the Broadband USO which gives “consumers and businesses the right to request a broadband connection capable of delivering a download sync speed of 10Mbit/s and an upload sync speed of 1Mbit/s.” [18]</p>

Some respondents have accurately pointed out that the evolution of technology and access services have enabled broadband connectivity at speeds that far exceed the current speed-

<sup>10</sup> Canadian Radio-television and Telecommunications Commission, 2020. What you should know about Internet speeds. [Online] Available at: <https://crtc.gc.ca/eng/internet/performance.htm>

<sup>11</sup> Dent, S., 2016. Canada sets aggressive targets for minimum broadband speeds. [Online] Available at: <https://www.engadget.com/2016-12-22-canada-sets-aggressive-targets-for-minimum-broadband-speeds.html>

<sup>12</sup> Federal Communications Commission, 2015. 2015 Broadband Progress Report. [Online] Available at: <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2015-broadband-progress-report>

<sup>13</sup> Telecommunications Regulatory Authority of India, 2016. Report on need for reviewing definition of broadband. [Online] Available at: [https://traf.gov.in/sites/default/files/Letter\\_to\\_Secretary\\_DOT\\_24\\_may\\_2016.pdf](https://traf.gov.in/sites/default/files/Letter_to_Secretary_DOT_24_may_2016.pdf)

<sup>14</sup> The Financial Express, 2018. BTRC issues regulations for telcos on service quality. [Online] Available at: <https://www.thefinancialexpress.com.bd/trade/btrc-issues-regulations-for-telcos-on-service-quality-1542601323>

<sup>15</sup> Bangladesh Telecommunication Regulatory Commission, 2018. Redefinition of Broadband. [Online] Available at: [http://www.btrc.gov.bd/sites/default/files/notice\\_files/Definition%20of%20Broadband.pdf](http://www.btrc.gov.bd/sites/default/files/notice_files/Definition%20of%20Broadband.pdf)

<sup>16</sup> BN Americas, 2020. Chilean regulator redefines broadband. [Online] Available at: <https://www.bnamericas.com/en/news/chilean-regulator-redefines-broadband>

<sup>17</sup> Office of Communications, United Kingdom, 2018. Connected Nations 2018. [Online] Available at: [https://www.ofcom.org.uk/data/assets/pdf\\_file/0020/130736/Connected-Nations-2018-main-report.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0020/130736/Connected-Nations-2018-main-report.pdf)

<sup>18</sup> House of Commons, UK Parliament, 2020. The Universal Service Obligation (USO) for Broadband. [Online] Available at: <https://commonslibrary.parliament.uk/research-briefings/cbp-8146/>

based definition of 512 Kbps. Average speeds across fixed and mobile access, as revealed by speed tests, also far exceed the 2Mbps threshold.

There is also significant evidence to support the notion that a defining a higher speed threshold along with high-speed tiers for better transparency will encourage competition and provide a greater incentive to improve the performance of broadband access services across the nation. Such an approach would be to significant benefit to the citizens of India.

Some respondents have also correctly pointed out that guaranteeing speeds on mobile networks is challenging. However, we also note that the average speed over Indian mobile broadband networks far exceeds the currently defined 512 Kbps, and that an increase to 2 Mbps is in our opinion, both achievable and desirable.

**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.**

We find the concerns raised by many respondents, that mandating multiple speed tiers would be to the detriment of the growth of broadband services in India, to be generally credible. It is for this purpose that in our original response to this consultation, we limit the compliance definition of broadband to the speed of 2 Mbps, while providing for fast and ultra-fast broadband services categories to protect the interests of consumer, and improve transparency in the marketing of services.

For all compliance purposes, such as determinations of whether broadband is indeed provided in regions, or even for purposes of data collection, a minimum speed of 2 Mbps would be sufficient to qualify a connection as broadband.

We also feel it prudent to mention that since speed commitments are rarely, if at all, offered in mobile broadband connections, classifications in marketing materials such as 4G/5G Mobile broadband are fully compatible with our original submission, as long as either the 4G or 5G mobile broadband connection offers a minimum of 2 Mbps upload and download connectivity.

**Q.4: Is there a need to introduce the speed measurement program in the country? If yes, please elaborate on 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**

Several respondents have suggested that making speed commitments on wireless networks is impossible due to a number of end-use factors, and therefore a speed measurement program would be impractical.

We wish to submit that drive tests are routinely conducted across developed nations to measure the performance of voice and data wireless networks [19] [20]. Such tests, especially for evaluating the performance of voice networks are also conducted through third parties by the TRAI [21]. We recommend that a minimum set of data network evaluation metrics be included in such tests. (Telecommunication Regulatory Authority of India, 2020)

As highlighted in our original response, many nations also routinely measure the performance of fixed broadband networks. The FCC collects such data via electronic shapefiles [22], and regularly publishes updates both in the form of periodical coverage reports [23] and as updated interactive maps detailing coverage data at a national level [24]. Access to such information has the potential to improve the network planning and marketing efforts of service providers, provide useful insights for consumers, as well reduce searching costs for small, medium and large enterprises looking to expand their operations.

We propose that similar mechanisms be adopted, and combined with the sights provided by crowdsourced speed and performance testing platforms such as TRAI's MySpeed, Ookla and others to provide an honest accounting of the current state of broadband connectivity in the nation, as well as reveal actionable insights to improve the reach and scope of 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.**

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

We agree with most respondents, in that enforcement of central RoW rules is found wanting, largely due to state level concerns and priorities that run contrary to federal mandates.

We are of the opinion that while efforts are being made to connect the country with Fiber and overcome the stiff challenges of the RoW conundrum, for the sake of digitalising the

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<sup>19</sup> Federal Communications Commission, 2017. In the Matter of Connect America Fund Universal Service Reform – Mobility Fund | Order On Reconsideration And Second Report And Order. [Online] Available at: [https://docs.fcc.gov/public/attachments/FCC-17-102A1\\_Rcd.pdf](https://docs.fcc.gov/public/attachments/FCC-17-102A1_Rcd.pdf)

<sup>20</sup> Body of European Regulators for Electronic Communication, 2018. Common Position on information to consumers on mobile coverage. [Online] Available at: [https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/download/0/8315-berec-common-position-on-information-to-0.pdf](https://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/8315-berec-common-position-on-information-to-0.pdf)

<sup>21</sup> Telecommunications Regulatory Authority of India, 2020. Report on Independent Drive Tests Report of Delhi service area including Ghaziabad, Noida, Gurugram and Faridabad. [Online] Available at: <https://traigov.in/news-updates/traireleases-report-independent-drive-tests-report-delhi-service-area-including>

<sup>22</sup> Federal Communications Commission, 2020. Fixed Broadband Deployment Data from FCC Form 477. [Online] Available at: <https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477>

<sup>23</sup> Federal Communications Commission, 2020. FCC releases Form 477 data on broadband deployment. [Online] Available at: <https://docs.fcc.gov/public/attachments/DA-20-262A1.pdf>

<sup>24</sup> Federal Communications Commission, 2020. Fixed Broadband Deployment Data. [Online] Available at: <https://broadbandmap.fcc.gov/#/>

country, must explore complementary technologies to Fiber which enable provision of instant high speed connectivity and help bridge the gap. These technologies are E & V bands as well as Satcom. These need to be utilised /implemented as they do away with the need for digging for underground access and hence the need for RoW.

### **E & V bands:**

India today has barely 30% towers which are connected with Fiber. The NDCP desires that 60% and the NBM desires that 70% of towers should be fiberized. For 5G to be successful, almost 90% of the towers need to be fiberized. This is desired to be accomplished in the next 2-3 years. Given the challenges with RoW, this is likely to remain a pipe dream. Given that as a backdrop, it may be worthwhile to consider E & V bands or what is also known as 'Wireless Fiber'. This is a low cost, quick deployment complementary solution to the RoW challenge on hand.

As is well known that we are woefully short of capacity for downloading high speed data and we need more of Fixed Wi-Fi hotspots to help carry the huge additional data traffic ( through the use of videos ) that is likely to be generated. This would actually help the telcos' existing limited data carrying capacity due to mobile spectrum availability constraints. This would also lead to augmentation of their revenue streams besides improving the service quality and improving the customer experience.

The V band is a unique combination of High Data Capacity with very limited coverage involving distances which are barely in the range of upto 100 metres due to oxygen absorption characteristics thereby lending itself to completely unique combination of use cases of Wifi & secondary access besides short range backhaul.

Unfortunately, India is lagging behind other economies in terms of number of Public Wi-Fi hotspots. Based on the global average of one hotspot for 150, India should have 8 million hotspots by now, but we are currently about 0.35 million which is merely 5 percent of the global benchmark. Even the NDCP 2018 has set target for Public Wi-Fi hotspots under the *section 1. Connect India: Creating a Robust Digital Communication Infrastructure*, clause f) "Enable deployment of public Wi-Fi Hotspots; to reach 5 million by 2020 and 10 million by 2022". However, we are nowhere achieving those targets

By opening up the V band in a delicensed manner in line with the best international practices in over 80 countries globally and the E band in a light licensed manner as already recommended by TRAI in 2015 , we shall be able to overcome the RoW challenges as well as expand the much needed Public Wi-Fi hotspots

### **Satcom**

Digital India requires broadband connectivity across the length and breadth of the country. While terrestrial connectivity ( Mobile Broadband ) is feasible & economically viable to deploy in urban areas, however when it comes to rural and remote areas, especially those that are in remote and geographically challenged terrains, the cost of providing terrestrial connectivity shoots up by almost 10-20x, thereby making it economically unviable for terrestrial technologies to reach the last 20% of the population. To top it all, are the huge

challenges posed due to RoW (Right of Way). It is in such areas that Broadband through Satellite serves as a 'messiah'. as it does not have to overcome the challenges associated with Right of Way and the huge costs associated with roll out of terrestrial technologies.

Given the growing broadband demand over the inaccessible areas like the north-east, the islands, other niche areas, remote and rural & remote regions, which cannot be economically served by competitive terrestrial technologies, satellite broadband would be the most cost effective solution.

Despite the massive growth of the telecom market in India, as a recent ITU report indicates, India still has a very significant number of users not connected to a 4G or equivalent connection (for mobile and fixed broadband in the world. To fully connect its population with broadband access and achieve its stated goal for achieving 'Broadband for All', India would need to utilize its indigenous assets as well as other assets over the Indian sky to deliver Satellite Broadband to the masses. Based on the last count, there is a huge amount of untapped satellite capacity which is waiting to be utilized.

The policy framework needs to facilitate creation of the right environment for all players in the satellite ecosystem so that the end users can enjoy the fruits of 'satellite broadband on demand'. Also the policy framework should be such so that the latest state-of-the-art advanced satellite technologies available worldwide viz. HTS, NGSO Satellites, flat panel antennas, etc can be used to meet the national goals of 'Broadband for All' and to enhance broadband connectivity to the underserved and unserved, which can be served optimally using Satellite Communication Technologies

This promises a number of benefits for boosting the country's digital connectivity quotient, including provisioning of broadband to the remotest and most inaccessible terrains in an efficient manner in the shortest possible time. Other benefits include providing broadband on the move and several other innovative services and applications in public interest."

TRAI has always supported inclusion of Satcom in enabling broadband through a number of measures including recommendations for use of Satellite for Cellular & Wifi backhaul, ease of doing business, 'open sky policy' which allows free and transparent operation of market forces and many others.

The NDCP 2018 has for the first time recommended adequate use of Satcom in enhancing the Broadband landscape in the country

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

We find the use of common duct infrastructure shared with other public utilities to be a common recommendation from most respondents.

We have highlighted in our original response, numerous examples of cross sectoral cooperation across the world in an effort to provide a repository of global best practices to inform recommendations unique to Indian conditions and markets.