CONSUMER PROTECTION ASSOCIATION
HIMMATNAGAR
DIST. : SABARKANTHA
GUJARAT

Comments on

Consultation Paper on Assignment of the Microwave Spectrum in 6 GHz (lower), 7 GHz, 13 GHz, 15 GHz, 18 GHz, 21 GHz Bands, E-Band, and V-Band

Introduction

We welcome the opportunity to comment on TRAI's Consultation Paper on the assignment of microwave spectrum in the 6 GHz (lower), 7 GHz, 13 GHz, 15 GHz, 18 GHz, 21 GHz bands, as well as the E-Band and V-Band. As a voluntary consumer organization, our focus is on ensuring that spectrum policies ultimately benefit the end-users – the consumers. These bands play a critical role in telecommunications backhaul and emerging wireless access, affecting how networks are deployed and services delivered. Our comments center on five key consumer concerns: **Affordability**, **Quality of Service**, **Digital Inclusion**, **Public Interest**, and **Transparency & Fair Competition**. We address both licensed (e.g. telecom backhaul) and unlicensed use cases (e.g. Wi-Fi and community networks) across all the mentioned bands, emphasizing the implications for innovation, small operators, and community networks.

Affordability

Spectrum Assignment and Consumer Costs: The method of spectrum assignment has a direct impact on the cost of telecom services for consumers. High spectrum prices – often a result of aggressive auction mechanisms – tend to **trickle down to users** in the form of higher tariffs or slower network rollouts. Studies have shown that **elevated spectrum costs reduce the funds available for network investment and create upward pressure on consumer tariffs**. In simpler terms, when operators pay exorbitant fees for spectrum, they may recoup these expenses by charging consumers more or limiting the expansion of services. By contrast, **administrative allocation or modest pricing of backhaul spectrum can keep network costs lower**, helping operators maintain affordable data plans.

Auction vs Administrative Allocation: We urge caution in using auctions for these microwave bands, especially the E-Band and V-Band that are intended for backhaul and niche access uses. Industry experts have warned that **auctioning the E and V bands would deny consumers and the nation the full benefits of broadband connectivity**, contradicting international best practices. In fact, TRAI's past recommendations (2014-15) suggested *not* auctioning these bands – instead recommending light-licensing for E-Band and delicensing (unlicensed use) for V-Band – precisely to avoid burdening networks with high costs. Making backhaul spectrum available on an administrative or light-licensed basis (with minimal fees) can **prevent a cost spiral** where consumers ultimately pay more for data. We align with the view that **spectrum assignment should not be treated primarily as a revenue-generating tool for the government, but rather as**

an enabler of affordable telecom services for all. Any spectrum pricing regime must consider India's price-sensitive market and strive to keep connectivity **affordable**, especially for low-income and rural users.

Quality of Service

Spectrum Availability and Network Performance: Sufficient and appropriate spectrum allocation is directly linked to the quality of telecommunications services consumers receive. Markets that allocate more spectrum to networks tend to enjoy **better coverage and higher service quality** because networks can be rolled out widely and handle more traffic. This holds true not only for mobile access spectrum but also for **microwave backhaul spectrum**, which is the backbone carrying data between cell towers and core networks. Notably, about **60% of mobile cell sites worldwide rely on microwave links for backhaul** – underscoring that these 6–21 GHz bands, along with E/V bands, are critical to maintaining network capacity and uptime. If backhaul spectrum is scarce or congested, consumers may experience call drops, slow internet speeds, or network outages, especially during peak times.

Urban Capacity and Rural Coverage: Proper assignment of the higher microwave bands (13, 15, 18, 21 GHz, and especially E/V bands) can significantly boost service quality in **high-density urban areas**. These bands support high-capacity links needed for 4G/5G cell sites and fiber-like wireless connectivity in cities. TRAI's initiative is expected to **enhance the digital connectivity backbone, supporting 5G deployment and enabling future-ready networks in high-capacity, last-mile, and urban deployments**. This means consumers in cities could see faster and more

reliable data as operators deploy millimeter-wave backhaul for network densification (for example, connecting many small cells or Wi-Fi offload points).

At the same time, **making mid-band microwave spectrum (6–18 GHz) readily available for backhaul is vital for rural and remote areas**. In regions where laying fiber is difficult or uneconomical, microwave links are the main option to connect villages and cell towers. These microwave solutions typically **have lower deployment costs than wired fiber backhaul**, making rural coverage expansions more feasible. Ensuring that operators (including small ISPs or telcos) can obtain 7 GHz, 13 GHz, 15 GHz, etc., carriers without excessive hurdles will allow them to upgrade rural networks, reducing congestion and improving voice and data quality for underserved communities. In summary, a spectrum assignment framework that **provides ample backhaul capacity with minimal delay** will directly translate into better quality of service for consumers, whether they live in metro cities or far-flung villages.

Digital Inclusion

Bridging the Digital Divide: We stress that spectrum policy should actively promote **equitable access to broadband** across all segments of society. Today's digital divide – the gap between the connected and unconnected – often falls along geographic and socioeconomic lines. Smart spectrum management can help close this gap. For instance, the 6 GHz (lower) band is being considered for **license-exempt use (e.g. Wi-Fi/RLAN)** in India, which aligns with global trends and can **foster broader internet access and next-generation connectivity for homes, enterprises, and public**

spaces. We strongly support delicensing the lower 6 GHz band (5925–6425 MHz) for Wi-Fi, as this will enable affordable, high-throughput indoor and outdoor broadband in both urban public hotspots and rural community centers. Opening up 500 MHz of unlicensed spectrum here will allow consumers to benefit from Wi-Fi 6E/7 technology, relieving congestion on existing Wi-Fi bands and complementing mobile networks – ultimately meaning better, cheaper internet connectivity for the public.

Supporting Underserved Areas and Community Networks: The V-Band (60 GHz) offers another opportunity for license-exempt use. We urge that V-Band rules allow **low-power indoor and outdoor use on a license-exempt basis**, as envisaged in the consultation. Worldwide, more than 70 countries have already **opened the 60 GHz band for unlicensed usage**, leading to a flourishing of innovation in wireless gigabit technologies. In India, unlicensed V-Band could be a boon for **community networks, startups and small ISPs** to deploy wireless gigabit links for last-mile connectivity. Already, community-driven initiatives in India have successfully used unlicensed spectrum in 2.4 GHz and 5 GHz to connect remote villages at low cost. These projects demonstrate that **unlicensed spectrum can bridge the digital divide by enabling community Wi-Fi networks and other affordable IT-enabled services in digitally marginalized areas**. We recommend that a similar ethos be applied to new bands: by **allowing license-exempt or lightly-licensed access to spectrum, local innovators can deliver broadband to places traditional operators might not reach**.

Fixed Wireless Access and Backhaul for Rural Connectivity: We note and support the idea of earmarking certain bands (or portions of bands) for **Fixed Wireless Access (FWA)** to serve as “last-mile” solutions in rural/remote

areas. This could include use of mid-microwave bands or even higher frequencies with appropriate propagation characteristics for villages. Importantly, any such allocation should come with affordable terms. Likewise, for **non-commercial or captive backhaul** (such as for educational networks, government initiatives, or community cooperatives), a carve-out of spectrum with simple administrative assignment and minimal charges would greatly help rural connectivity efforts. Reports by industry bodies have emphasized that **unlicensed or low-cost spectrum access is a cost-effective mechanism to solve last-mile connectivity challenges**. In sum, to promote digital inclusion, the spectrum policy should prioritize low-cost access and diversity of usage models – from big operators to tiny community networks – ensuring that **no region or population is left behind in the broadband revolution**.

Public Interest and Innovation

Maximizing Public Benefit: Spectrum is a public resource, and its management must serve the public interest. We believe the paramount goal of spectrum assignment in these bands should be to **maximize the benefit to society at large**, rather than just maximizing government revenue or individual corporate gains. The proposed framework has the potential to significantly boost India's digital infrastructure – an outcome undeniably in the public interest. It is expected to **play a critical role in enhancing the country's connectivity backbone, supporting widespread 5G deployment, and enabling future-ready communications**. This means not only better mobile service for consumers, but also enabling new public-interest applications. For example, robust backhaul in E-Band can support 5G networks that deliver e-health, online education, and smart-city

services. Similarly, opening the 6 GHz and 60 GHz bands for Wi-Fi and other access uses can catalyze innovations in telemedicine, IoT, and community broadband that benefit consumers directly.

Enabling New Technologies: The public will gain from policies that encourage adoption of **cutting-edge technologies**. We support TRAI's consideration of Integrated Access and Backhaul (IAB) in bands like E and V, which could facilitate rapid 5G rollouts by using wireless links to connect 5G small cells. This will help bring ultrafast 5G services to more areas (including those where laying fiber is slow or costly), thus benefiting consumers with advanced services sooner. We also note that many emerging consumer technologies – from virtual reality headsets to smart city sensors – can operate in unlicensed mmWave bands. By allowing **low-power device-to-device communications in V-Band on a license-exempt basis**, India can unlock innovations for indoor consumer applications (like next-gen Wi-Fi, AR/VR, etc.) without the friction of licensing. Indeed, experiences abroad show that when regulators open up bands like 60 GHz for flexible use, **innovation flourishes and consumers ultimately enjoy new services and applications**. We urge that India follow such global best practices.

Crucially, treating certain spectrum (such as unlicensed Wi-Fi bands) as a **"public good"** can have wide socio-economic ripple effects. Unlicensed spectrum has been recognized for delivering not just direct communication value, but also for enhancing the value of licensed mobile networks via Wi-Fi offload and fostering an ecosystem of devices and services. From a public-interest standpoint, enabling both licensed expansion (for carrier-grade networks) and unlicensed innovation (for

entrepreneurship and community use) creates a healthy, **balanced wireless ecosystem** that best serves consumers.

Transparency and Fair Competition

Open and Transparent Processes: We call for the spectrum assignment processes to be **open, transparent, and free of bias**. In the past, non-transparent allocation of spectrum in India led to serious concerns; the current consultation is an opportunity to ensure full public accountability in how these valuable bands are assigned. If the methodology is administrative allocation (as indicated for backhaul spectrum under the Telecom Act, 2023), then clear guidelines must be established. For example, spectrum should be assigned on an equitable **first-come-first-served or needs-based basis with published criteria**, and details of assignments (which operator holds which frequency/link) should be publicly accessible. This transparency will prevent perceptions of favoritism and build confidence that **spectrum is being used for the public good**. We support measures like **spectrum caps or link limits** in the microwave bands to prevent any one player from hoarding capacity to the detriment of competitors and consumers. All operators – big or small – should have fair access to backhaul spectrum resources needed to deliver services.

Fostering Fair Competition: A pro-consumer spectrum policy is one that stimulates competition, as competition leads to better prices and services. Thus, the assignment framework should consciously **enable participation by smaller operators, ISPs, and new entrants** wherever feasible. One way to do this is by designating certain bands or portions for unlicensed or lightly-licensed use – this lowers entry barriers and lets multiple entities use

the spectrum concurrently. License-exempt access in 6 GHz and V-Band means not only the licensed mobile operators, but also **broadband providers, startups, and community networks can contribute to connectivity**, creating a diverse competitive landscape. In licensed bands, any allocation (be it an auction or administrative distribution) should be designed such that it does not unfairly tilt the market toward only the largest incumbents. We note that even the principles outlined in past spectrum discussions emphasize that allocation should be **just, equitable, and oriented toward competition, efficiency, affordability, and consumer interest – not merely revenue maximization**. We wholeheartedly endorse this view. A fair competitive environment incentivizes operators to roll out networks in underserved areas and keep service quality high and tariffs reasonable, all of which benefits consumers.

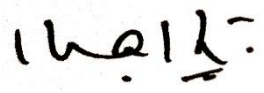
Finally, we advocate for **continuous oversight and stakeholder input** in the spectrum assignment process. Regular reviews should ensure that the chosen methods (auction, administrative assignment, unlicensed designation, etc.) are indeed meeting the goals of affordability, quality, and inclusion. If mid-course corrections are needed – for example, if any assignment approach is found to be creating a monopoly or underutilization – the policy should be flexible to address that. By keeping the process transparent and competition-friendly, India can avoid pitfalls of monopolization and ensure that the **use of spectrum truly serves the public's interest** rather than narrow interests.

In conclusion, we commend TRAI for initiating this comprehensive consultation and considering the nuanced needs of backhaul and access spectrum in the 6–7 GHz, 13–21 GHz, E-Band, and V-Band ranges. From a

consumer perspective, our plea is for a spectrum assignment strategy that **puts people first** – one that delivers affordable services, better network quality, and connectivity for all, while spurring innovation and fair play in the market. The decisions taken on these bands will have a far-reaching impact on India's digital future. By prioritizing consumer-centric principles as outlined above – *Affordability, Quality of Service, Digital Inclusion, Public Interest,* and *Transparency & Fair Competition* – the Authority will ensure that this precious spectrum resource is harnessed in a manner that connects every Indian to a high-quality digital communication network. We appreciate the opportunity to contribute and are hopeful that the final policy framework will reflect these consumer interests for the greater good of India's digital ecosystem.

Thanks.

Sincerely Yours,



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