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Dated: 24.01.2022

To,
Shri Syed Tausif Abbas, Advisor (NSL)
Telecom Regulatory Authority of India,
Mahanagar Door Sanchar Bhawan,
JawaharLal Nehru Marg,
New Delhi – 110 002.

Subject: Bharti Airtel's counter comments to Consultation Paper on Auction of Spectrum in frequency bands identified for IMT/5G

Dear Sir,

This is in reference to TRAI's Consultation Paper on Auction of Spectrum in frequency bands identified for IMT/5G dated 30.11.2021 (CP No. 8/2021).

In this regard, please find enclosed our counter comments on the Consultation Paper for your Kind consideration.

Thanking You,

Yours' Sincerely,
For Bharti Airtel Limited

Rahul Vatts
Chief Regulatory Officer

Encl: a.a

Counter Comments re TRAI CP on "*Auction of Spectrum in frequency bands identified for IMT/5G*"

At the outset, we reiterate the submissions made by us as part of our main response vide our submission dated 10 January 2022.

We submit these additional submissions in response to comments provided by certain stakeholders in reference to Spectrum caps, and setting aside any IMT spectrum or direct allocation to verticals/enterprises.

We reiterate that 5G, as backbone of a digitally connected India, will play a vital role in the nation's journey towards becoming a $5 trillion economy and bringing high speed broadband access to every citizen, hence the current consultation exercise should take care of the following:

A. Spectrum policy must take into account the 'Public Good'
B. Unsold and unutilised spectrum is a waste of precious national resource and represents the loss of a vital *socio economic opportunity*
C. The economic model for the spectrum auction should be built on the 'Multiplier Effect' of 5G networks and not revenue maximisation
D. Industry health must be taken into account if we are to ensure that sustainable network investments are able to unlock the potential of the spectrum deployed.
E. 5G is an altogether different ballgame now - Techno-commercial spectrum valuation approaches of the past need a refresh.
F. 5G Spectrum should be interference-free, clean and immediately usable, and, backhaul will be critical
G. Ease & simplify the Spectrum auction payment terms
H. Need to revise the Spectrum Caps
I. No setting aside of spectrum for Private Captive Network & encouraging spectrum leasing

It is in respect of last two that we provide our specific comments:

A. Spectrum Caps: Some of the respondents have argued to relax the spectrum cap. We reiterate the following (mentioned in our main response as well):

1. **Band-wise spectrum cap:**
   a. Reduce the spectrum cap from 50% to 35% in the sub-GHz band.
   b. 35% cap may also be imposed for 3.3GHz and mmWave separately
2. **Overall Cap:**
   c. Overall cap of 35% should be continued with.
   d. For computation of overall cap of 35%, 3300-3670 MHz and 24.25-28.5 GHz should be included

Earlier the sub-GHz supply used to be limited and TSPs had access to barely 10-15MHz of it. Since a few new bands are also being added in sub-GHz, it is logical to lower the cap to 35% while giving wider choice to TSPs to access this spectrum. Over the last decade, the Indian Telecom sector has consolidated to four operators (three private per circle) and they had access to only two primary sub-GHz bands (800MHz and 900MHz).

But with 700MHz band and proposed inclusion of newer bands (600MHz and 500MHz) in the upcoming auctions, the supply sub-GHz spectrum will increase. Since sub-GHz is a fundamental resource for coverage layer whether urban or rural areas.

It is pertinent to note that, with increased supply on one hand, the market players have shrunk to effectively 3 private players, therefore, to avoid concentration of sub-GHz with anyone TSP and ensure that spectrum for all, a spectrum cap of 35% for sub-GHz should be prescribed.

B. Spectrum for Private Cellular Networks:

We submit our comments, in addition to our comments provided as part of our main response wherein we have argued for creating framework for network slicing and leasing by MNOs to verticals, and against setting aside any IMT spectrum for such verticals and/or direct allocation of spectrum to such enterprises for localized use.

Before stating our counters, we reference here certain observations made by some of the respondents favoring spectrum set-aside directly to verticals:

"…Therefore, the extant licensing framework is adequate for enabling TSPs to utilise spectrum licensed to them to offer managed NPN services through techniques such as "network slicing." However, it would be unrealistic to expect that this approach alone, can serve the entire demand for enterprise NPNs for enabling Industry 4.0 use-cases in India…"

*"…Moreover, given that sub-leasing is likely to be limited to Licensed Service Areas (**LSAs**) where the TSP holds spectrum utilisation rights, enterprises that are national in scale may need to lease spectrum from multiple TSPs…."*

"…Due to the above complexities and ambiguities around the leasing process, spectrum leasing is not a viable option for Enterprises to deploy private networks. We are of the view that TRAI should suggest a policy framework which gives private entities an option to obtain spectrum directly from the Govt. for allocation of spectrum to Enterprises for private 5G network to meet their business requirements at nominal cost…."

*"…**Spectrum reservation in unsold bands**:*
Big chunk of spectrum is lying unsold in different band categories. India may adopt policies just like UK where unused spectrum is allowed to be used by private networks…"

"…Spectrum allocation for private networks should be done through an administrative process and should be completely delinked from auction process or even market determined price…"

"…it is unrealistic to expect that enterprise networking requirements can be fully met with 5G technologies. Moreover, adopting policies that assume TSP-provided 5G services will fully address India's private sector wireless needs would be a mistake…"

"…Globally, the bands of n77, n78 and n79 in the Sub 6 and n257, n258 are the preferred bands dedicated for private cellular (5G) networks. It is our suggestion that India adopt similar strategies in order to ensure easy access to eco-system partners, keep costs low and stay ahead in the technology evolution…"

"…The assignment methodology should be light licensing to allow easy access to spectrum for those enterprises who want to use it. A simple online process would be ideal. License terms (length of license period) should be

no different than for TSPs, but we suggest an annual "check-in" or renewal to make certain that the business continues to exist and continues to use the spectrum…"

In view of the above responses by various stakeholders, we now submit our comments to address the above, and also to support our view that is against any spectrum aside. In specific we state as follows:

1. We agree that the industrial applications and use cases need spectrum resources. That is an opportunity that any and every Telco aims to compete for, and offer solutions by making use of spectrum for 5G. Various global and local research reports give various levels of economic value such use cases can enable.

2. We also state that there is no dearth of connectivity, technology and options that any commercial private enterprise needs today and cannot be provided by competitive telecom market. When we say telecom market here, it is not just limited to Unified Licensees and IMT spectrum alone, but also options like fiber, access to unlicensed spectrum, ISP providers, CMRTS license among others.

3. We would also like to state that in last 25 years of telecom, the business requirements of enterprises have been ably met by Telecom operators, by bringing the benefits of new generation of technologies from 2G to 3G to 4G and now, 5G. With options like network slicing, leasing emerging, it is the Telcos who are at the forefront of bringing innovative solutions to enterprises.

4. Telcos have to deliver on commitments and conditions related to rollouts, efficiency, contribution to exchequer –all set by the Government and the Regulator. For TSPs it means committing investments, and then operate at efficient scale to earn the return to fund these investments. Predictability and consistency of regulatory regime that avoids fragmentation is critical.

5. We also would like to highlight to TRAI that many of the stakeholders favoring localized private networks and access to spectrum through direct allocation, are either themselves big commercial enterprises (private or non-private), and/or will be used by such capable, well-funded commercial enterprises.

6. Now, from the perspective of IMT spectrum, it has been identified for purpose mobile networks should not be set-aside and TSPs should have flexibility to serve enterprise needs through slicing, and leasing both.

7. Setting aside spectrum clearly poses risks to 5G's success. The Telecom operators who buy it through auction, will have to afford a higher investment burden as set-aside will decrease spectrum availability for 5G. We also do not see any evidence of a market failure in enterprise segment or the needs private commercial enterprises/verticals have which Telcos have denied /failed-in from serving – that spectrum set-aside from core IMT/5G bands need to be created.

8. Further, by arguing for spectrum aside in core 5G / IMT bands, basically these commercial enterprises want to leverage the scale efficiencies created by Telcos, to get the equipment and create captive networks, but without making commensurate investments.

9. Setting aside IMT spectrum for localized private use for industrial/enterprise users directly, will create pockets of fragmentation, and tomorrow possibly require protection zones.

10. IMT Spectrum has a direct relationship with monetization opportunity. The enterprises seeking it themselves are commercial enterprises. They cannot argue to have access to precious IMT spectrum, that too out of the allocation framework for other equal participants.

11. The TRAI and Policymakers are already aware of the fact, and we have stated in our main response to this CP, that today, for Telcos, growth in traffic on networks does not guarantee revenue realization, least being in same proportion. The network traffic and revenue generation ability has decoupled.

12. On one hand, government has already sliced away a good chunk of spectrum (605MHz) for license exempt use[1] of low power applications including WiFi applications. Today it competes for the same commercial opportunity with a licensed Telco. OTTs are riding and driving huge surge on MNOs networks, have already taken the monetization aspect away from Telcos. Now, if the TRAI further slices away the IMT spectrum for verticals' captive networks, it is a grave situation for licensed operators.

13. How does the TRAI/Government plan to address the non-level field that gets created due to slicing away the core 5G/IMT spectrum? On one hand, as licensed Telco, we buy it through competitive auctions at prices determined by market (reserve valuation done by TRAI), and on the other hand, part of same spectrum gets allocated to other commercial enterprise users administratively at low cost?

14. How does TRAI plan to address the challenge of same commercial opportunity that an MNO must capture after paying thousands of crores in buying spectrum and monetizing it thereafter by deploying it for various use cases, and, offering the same opportunity to private enterprise as captive usage?

15. By slicing away IMT spectrum and allocating it to verticals for captive usage, thereby taking away the enterprise monetization opportunity from licensed MNOs, how does TRAI plan to address the challenge of unintended consequences, wherein almost entire cost recovery for spectrum will have to be funded by normal subscriber.

16. By offering IMT spectrum set aside for verticals, and at low or free of cost, effectively TRAI/ Government will be asking the average telecom subscriber to cross subsidies the big commercial enterprises for latter's needs.

17. Furthermore, owning an IMT grade or IMT spectrum, which can be granted under exclusive rights, but for purpose captive usage – means it must have rollout obligations, security conditions and other necessary requirements like another licensee.

18. The captive private networks must contribute towards the USO fund as well. This is an opportunity for government to not only increase the contributor base towards universal connectivity, but also lower the incidence on all participants.

19. It is also important that while doing its spectrum valuation exercise, the TRAI defines and discounts the revenue opportunity that could have come to licensed TSPs by deploying this spectrum for various use cases. It must be accommodated and demonstrated in the model of TRAI.

[1] Section 7.2.1 of DoT's *Induction Note of Department of Telecommunications, November 2021*

20. TRAI should also value and benchmark such spectrum to be set-aside, with the same amount of valuation / reserve price that an MNO will have to consider in its bidding. It will be ironical that for IMT bands that have no relation to any other band are valued by TRAI using theoretical technical efficiencies and propagation, and value of spectrum in same IMT band is not ascertained if given to enterprises for direct usage.

21. The above valuation is important considering that one of the **respondents** has said that "*Big chunk of spectrum is lying unsold in different band categories. India may adopt policies just like UK where unused spectrum is allowed to be used by private networks….",* and it has also sought reservations in almost all core 5G bands (mid-band, mmWave). We would be keen to know how would TRAI like to offer same spectrum for which a licensed Telco is expected to bid through auction.

22. As private networked campuses will make use of spectrum exclusively, it means that otherwise public users (i.e. subscribers) of Telco network, may have opportunity to connect to captive wireless networks of all such private enterprises, thereby dropping the usage and thus revenue of Telco networks. This situation will further aggravate in the era of IoT and M2M, wherein millions and billions of devices and machines, majority of which will be deployed in industries and campuses, will be designed to connect to captive wireless networks. Then for what commercial opportunity MNOs should buy the spectrum through auction?

23. We also do not agree to term ***non-public network (NPN).*** Under the Telegraph Act, the Unified License granted by the Department of Telecom, and under India's Telecom policy (NDCP-18), nowhere such term has been defined or created. Rather, TSPs licenses have always provided necessary connectivity to enterprises.

24. In-fact, India has been one of the very few progressive markets that defined approach to technology and service neutrality and enshrined under its licenses, and time has come to allow Telcos deploy spectrum for innovative use cases and serve India's business needs too. Therefore, we argue that network slicing and spectrum leasing under UL should be allowed.

25. In-fact, the NDCP, strategy 1.2 (b) (iii) already envisioned to usher in leasing: "…***Further liberalizing the spectrum sharing, leasing and trading regime..***.". Further, the NDCP, in order to promote Next Generation Access Technologies in India, has envisioned the following actions:

    "i. Encouraging licensed service providers to utilise next generation access technologies to ensure cost optimization, service agility and new revenue streams
    ii. Recognising mid-band spectrum, particularly the 3 GHz to 43GHz range, as central to India's strategy for Next-Generation Networks
    iii. Promoting the effective utilisation of high capacity backhaul E-band (71-76/81-86 GHz) and V-band (57-64 MHz) spectrum in line with international best practices
    iv. Rationalizing annual royalty charges for microwave links for backhaul connectivity…"

26. In view of the NDCP strategies that are very clear, we are of the considered view that core IMT bands specially in mid-band and high capacity backhaul bands like E-band and V-band, spectrum cannot and should not be allocated to verticals out of the policy and regulatory framework for allocation of such bands for licensees.

27. In view of above & the NDCP framework, there is no justification of direct spectrum allocation to verticals for captive private networks; and hence we urge the Authority to not support this approach. Rather we request the TRAI to recommend framework for spectrum leasing by MNOs to easily and effectively serve the needs of the verticals.

28. Notwithstanding our contention that spectrum in licensed / IMT bands should not be set-aside for private commercial entities to access directly and deploy for their captive usage, we also argue that such private captive users cannot claim to stay outside of licensing umbrella.

29. There is an already existing framework of a CMRTS[2] license and as part of the Annexure to TRAI's current CP, the Parliamentary Standing Committee report highlights that **captive users like metros, airports, refineries etc. have taken this license, and the license is for captive use**. Even the CMRTS licensees pay certain regulatory levies and are under certain license obligations. Further, the apprehension that TSPs may not be able to serve national needs of enterprises, then can be addressed by taking the CMRTS license. We believe India was ahead of time when it created license for CMRTS, and same may be brought under the UL regime or strengthened for private enterprises to make use for captive purpose.

30. Apropos, we do not see any reason why commercial enterprises like private companies can claim access to IMT grade spectrum, for purpose of their captive usage. We believe that if any entity has to access IMT spectrum from any of the IMT bands (current or future), they should obtain a UL, and get the access rights to IMT spectrum.

31. If at all there is a need to consider direct spectrum allocation for to verticals for captive private networks, the same can easily be given in unlicensed bands instead of giving spectrum in IMT bands since coverage is not an issue for such enterprise users.

32. In the end we would like to highlight that, if the government and regulator are still keen to bring more vertical competition, by brining players directly into telecom services domain e.g. through unlicensed bands, direct allocation of spectrum to enterprises through set-asides etc., then it is time that Telcos are also given the same flexibility, and multiple onerous license conditions and obligations on them should be done away with, allowing them to compete on equal footing.

[2] https://dot.gov.in/sites/default/files/LICENSE%20AGREEMENT%20CAPTIVE%20MOBILE%20RADIO%20TRUNKING%20SERVICE%20%28CMRTS%29_00.pdf