NEWS BROADCASTERS & DIGITAL ASSOCIATION
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Only by Email <advmn@trai.gov.in>

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Shri Akhilesh Kumar Trivedi
Advisor (Networks, Spectrum and Licensing)
Telecom Regulatory Authority of India
Mahanagar Doorsanchar Bhawan,
J.L. Nehru Marg, (Old Minto Road)
New Delhi - 110002

Dear Sir,

Re: NBDA Comments on TRAI Consultation Paper dated 6.4.2023 on Assignment of Spectrum for Space-based Communication Services ('Consultation Paper')

Attached please find comments of NBDA on the TRAI Consultation Paper dated 6.4.2023 on "Assignment of Spectrum for Space-based Communication Services".

Thanking you,

Yours faithfully,

Annie Joseph
Secretary General

CC: Mr. Avinash Pandey, President, NBDA

Encl: As above

Corporate Office: Mantec House, 2nd Floor, C- 56/5, Sector 62, Noida 201 301
Telefax: 0120 – 4129712 **Email:** nbda@nbdanewdelhi.com **Website:** www.nbdanewdelhi.com
Registered Office: FF-42, Omaxe Square, Commercial Centre, Jasola, New Delhi –110 025

NBDA Comments on TRAI Consultation Paper dated 6.4.2023 on Assignment of Spectrum for Space-based Communication Services ('Consultation Paper')

The News Broadcasters & Digital Association (NBDA) (formerly known as News Broadcasters Association (NBA), is an association of 24x7 television broadcasters and digital media entities/platforms who broadcast and/or publish news and current affairs programmes and content. NBDA represents several important and leading national and regional private news and current affairs broadcasters who run news channels and digital platforms in Hindi, English and Regional languages.

At the outset, NBDA states that on a perusal of the Consultation Paper, it appears that while the Paper relates to assignment of spectrum for space-based communication services however, it also involves issues which go far beyond the questions in respect of selection of bands for auction and auction modalities, which have been formulated for consultation.

In view of the above, before providing responses to all relevant questions as they relate to the interest of its Members as well as legacy users of all satellite services, NBDA would like to offer its preliminary comments, which are given herein below:

A. Beneficiaries of the Auction Process Systems

1. That while India is considering the opening up of its entire service strata to space-based service providers, it is necessary to lift the veil and assess who would be the potential gainers of such a decision. There are three types of systems which would get access to space spectrum in India once it is opened up:

   (i) GEO HTS systems;
   (ii) LEO system constellations; and
   (iii) MEO systems.

   In all the three domains cited above, India, on its own, does not have any major space-based assets or any plans which would lead to such systems being developed in the next few years. The only exception to the above being one or two medium-capacity GEO-HTS satellites, which are being operated by ISRO. Therefore, the major systems which would be the beneficiaries are all foreign-owned space service providers, which may partner with local players. With the new space policy being released and opening up of space for the first time since the year 2000, it is possible that in future, systems with Indian ownership and/ or collaboration may emerge. Furthermore, the scenario on the LEO satellite front is very fluid, with new players emerging all the time.

2. That it would be pertinent to mention herein that to deal with such situations, the Office of Communication (OFCOM) in the UK has proposed changes in

the rules pertaining to the licensing of LEO satellites so that they can coexist without degrading other consumer services. These rules include a check to guard against any restriction of competition that could arise if the granting of the licence prevents subsequent parties from entering the market.[1]

3. That India needs to delineate a similar scope and strategy development before it begins licensing spectrum to various contenders for purely revenue realizations.

B. Protection of Current Users (Legacy Users) of Satellite Spectrum

1. That the need to protect legacy users, which is also reflected in the International Telecommunication Union (ITU) policy (Allocations under Appendix 30,30A and 30B), is elaborated in detail in the Consultation Paper. Therefore, all ITU assignments of satellite spectrum arrived at post-international coordination need to be protected while the new systems (including LEO) need to operate on a no-interference basis vis-à-vis the existing systems.

2. That the policy needs to reinforce the above, as otherwise the incumbent users would be left to fend for themselves in the face of heavy interference generated by LEO systems.

3. That while the LEO systems have uplinks in the 28 GHz band however, the downlinks are in the Ku-band (10.7 to 12.7 GHz), which is currently used by DTH satellite systems in India, as detailed below :

1.5 Through the afore-mentioned letter dated 16.08.2022, DoT provided a list of frequency bands to be considered by TRAI for providing recommendations with respect to space-based communication services, as given below:

S. No.	Frequency Band	Link	Remarks
1	10.7 – 12.75 GHz	Space to Earth	**Ku Band DTH Downlinks**
2	12.75 – 13.25 GHz	Earth to Space	**Ku Band DTH Uplinks**
3	13.75 – 14.5 GHz	Earth to Space	**Ku Band DTH Uplinks**
4	17.1 – 18.6 GHz	Space to Earth	17.7–18.4 GHz is used for Earth to Space also.
5	18.8 – 19.3 GHz	Space to Earth	
6	19.3 – 19.7 GHz	Space to Earth	
7	19.7 – 21.2 GHz	Space to Earth	
8	27.5 – 29.5 GHz	Earth to Space	27.5–28.5 GHz has been identified for implementation of IMT in India.
9	29.5 – 31 GHz	Earth to Space	

Table 1.1: List of frequency bands referred by DoT

4. That it may be mentioned that the mere allocation of Bands does not alleviate the interference faced by the legacy systems like DTH or other licensed systems in the same band. In this regard, it may be noted that in January 2023, Dish Network filed a suit against the FCC authorization of Starlink Gen 2

[1]OFCOM's Space Spectrum Strategy (Nov 2022)
<https://www.ofcom.org.uk/__data/assets/pdf_file/0023/247181/statement-space-spectrum-strategy.pdf

satellites which authorized the 12 GHz band (12.2 to 12.7 GHz) for Starlink. It has been alleged by Dish Network that the "*Order contravened the Administrative Procedure Act, 5U.S.C. § 551et. seq., by arbitrarily and capriciously ignoring unrebutted expert studies submitted by DISH showing that SpaceX's Gen2 system would significantly exceed the applicable power limits adopted by the FCC for the 12 GHz band, and thus would risk causing unacceptable interference with DISH's Direct Broadcast Satellite ("DBS") service".*

5. That in India, DTH systems form one of the major delivery systems for broadcast of linear channels, with an estimated 80 million consumers and over 800 channels. The DTH system serves millions of viewers in rural and urban households and constitutes one of the major sources for their entertainment and information.

6. That India has an opportunity to frame a GSO and Non-GSO policy which protects legacy systems serving tens of millions of consumers instead of opening up the spectrum to foreign operators, which may cause direct interference with India's licensed and established systems, resulting in undue benefit for foreign operators at the cost of Indian consumers.

C. Extension of GSO Systems to Plan Bands not permitted to Foreign Satellites in India

1. That attention is invited to Para 1.6 of the Consultation Paper, which states that while Plan Bands are not permitted in India for foreign GSO systems, TRAI may relook at this provision. Para 1.6. states as under :

"While providing the above list of frequency bands, DoT also mentioned that "TRAI can however provide recommendations for other frequency bands also." Besides, DoT stated that "these frequency bands include "Planned bands" that when used by GSO systems in accordance with Appendices 30, 30A & 30B of Radio Regulations are reserved by ITU for use by National systems. Use of 'Planned Bands' by foreign GSO satellites is not permitted in India. TRAI may, inter-alia, take into account this aspect with respect to GSO systems, in the consultation process". The information on the Planned bands, as provided by DoT, is given below:

S. No.	Plan	Frequency bands		Applicable Appendix of ITU's Radio Regulations
		Uplink	Downlink	
1	FSS Plan	12.75 - 13.25 GHz, 6.725 - 7.025 GHz	10.7 - 10.95 GHz, 11.2 - 11.45 GHz, 4.5 – 4.8 GHz	Appendix 30B
2	BSS Plan		11.7-12.2 GHz	Appendix 30
3	BSS feeder links Plan	14.5 - 14.8 GHz, 17.3 - 18.1 GHz		Appendix 30A

Table 1.2: Details of Planned Bands

2. That such a concession to Foreign GSO Satellite systems, which is not permitted today, has long-term implications for the Indian Space Sector and future Indian GSO HTS systems, including those planned by ISRO. It would have been appropriate to provide a reason for such consideration after obtaining the opinion of the Department of Space (DoS) for such a move as the DoS is planning to use the above bands in its upcoming satellites, e.g. GSAT-22 which uses the FSS plan as at S.No 1 above in Table 1.2.

3. That the questions provided in the Consultation Paper put the stakeholders in a "*straight jacket*" in so far as they must respond to specific queries about the modalities of auction rather than the strategic issues of India's Strategic Plan for GEO HTS and LEO systems at present and in future. In fact, the strategy which should be followed should be similar to the one followed by OFCOM. Apparently, there seems to be an abnormal hurry to proceed with the auction of spectrum and/ or administrative allocation which can bind the country into space concessions, the impact of which cannot be ascertained at present as many of these systems are themselves developing and in turn facing lawsuits in several countries where these are being permitted to operate by the national authorities.

4. That no responses have been sought on the issue of benefits to consumers by virtue of adopting such a strategy, the potential pricing and a possible open licensing architecture which does not foreclose potential Indian or foreign players.

D. Proposal to allocate C-Band

1. That attention is invited to NBDA's letter dated 18.4.2023 (Attached), wherein it had elaborated in detail its concerns in respect of the Government's intention to allocate a major part of the C-Band spectrum (which at present is being used for broadcast services), for rolling out 5G telecom services. The proposal, if implemented, would pose an existential threat to the broadcast industry, as it would not only significantly reduce the C-Band spectrum available for broadcast services, but it may also result in interference with the broadcast signals, which can severely hamper and impact the quality of service/transmission.

2. That it is a well-known fact that the spectrum frequencies between 3.7 to 4.2 GHz are earmarked for providing broadcast services in line with the international practices. The same has large coverage and is a cost-effective communication solution. All the satellites which are engaged in provisioning of broadcast and satellite services use this band of spectrum, which is also used for emergency and disaster recovery purposes.

3. That at present, there are around 250 million TV households and around 900+ registered TV channels which are uplinked/downlinked using satellites through the C-Band spectrum and around close to 2000 registered DPOs who re-transmit the same post reception from the satellites. The sector provides employment to over 2 million people. Thus, any proposal for allocation or auction of satellite spectrum must factor in these aspects, the socio-economic importance/relevance and impact of the same. It must also ensure continuity of operations and uninterrupted availability of services.

4. That India is one of the most saturated markets in the world with more than 350 broadcasting companies with over 900 television channels serving every genre in all major languages of the country. Any move to make spectrum dearer will not only act as an entry barrier for the new companies but will also threaten the survivability of the existing stakeholders and will lead to collapse of the Indian broadcasting industry.

5. That it also needs to be appreciated that satellite signals, which are transmitted some thousands of kilometres away, are weak and would be overpowered and inundated by the terrestrial transmitters. Therefore, satellite internet should not be introduced or glorified as "*India being the first one to auction satellite spectrum"* at the cost of hundreds of Indian users losing their broadcast service. In fact, international experiences in U.S., E.U. and U.A.E. have already established and proven that interference with present status quo in the C-Band creates disruptions. The disruptions caused were even evidenced during the trial runs for 5G services. Further, as an industry, broadcasters have always opposed the dual use of frequencies.

6. That even TRAI had in its recommendations dated 11.4.2022 on "Auction of Spectrum in Frequency Bands identified for IMT/5G" acknowledged the risk of interference in the event there was auction of 3300-3670 MHz bands by observing that *"IMT emissions in the 3300-3670 MHz may saturate Low Noise Block (LNB) of the FSS earth station"*. Keeping in mind such risks, it had through its recommendation inter alia, emphasized on the need for the usage of high-quality band-pass filters.

7. That it is alarming that despite the apprehensions expressed by the broadcasters and TRAI, the Department of Telecommunication (DoT) has notified the National Frequency Allocation Plan 2022 (NFAP 2022), which reduced the Guard Band from 30 MHz to 10 MHz. In the event the consultation and recommendation to auction designated broadcast spectrum is accepted, the broadcast industry would be exposed to catastrophic consequences. The reduction in the guard band under NFAP 2022 would result in hampering the quality of service in the broadcasting sector. In fact, it

is understood that the usage of spectrum is also impacted by climate conditions and thus, situations may vary depending upon the nature and type of climate.

Therefore, it is suggested that all possibilities of interference/overlap must first be eliminated and the climatic conditions for effective use of spectrum in India must be studied and examined before proceeding with this exercise.

8. That it must also be appreciated that substantial amounts of investments have been made over satellites and for provision of broadcast and cable services, all of which may be completely wasted as it may result in satellite capacity getting lost as 5G interference in C-Band will impact thousands of head ends.

9. That in the case of U.S.A., the allocation of C-Band for 5G services was a result of detailed deliberations, the regulators had persuaded the satellite and broadcast operators to vacate the C-Band spectrum in return for huge compensation running into billions of USD. It is understood that there is still ongoing litigation in respect of the same.

10. That the nature in which questions have been posed/formulated in the Consultation Paper, the entire process appears to be a fait accompli and looks to give a clear-cut walkover for 5G services without even examining the impact that it would cause upon both the broadcast/satellite services as well as the 5G services.

11. That therefore the most important aspect to be examined before coming up with a consultation on the subject is to determine the existential threat to the broadcasters who are wholly dependent on the C-Band spectrum for Uplinking and Downlinking of signals.

12. That the questions posed in the Consultation Paper appear to have been drafted with the single-pronged approach of making 5G services happen using satellite/broadcast spectrum without appreciating the importance and power of broadcast as an existing serving utility for public good, catering to the various elements of human interest namely news, education, entertainment, sports etc. The news broadcasting was declared to be an "*emergency and essential service*" during the pandemic since it was the most important means of dissemination of information to the public about various protocols, guidelines, etc.

E. Proposal for Auction of Satellite Spectrum

1. That another aspect of concern for the Members is the proposal for auction of spectrum. In this regard, it may be noted that the question whether satellite

spectrum can be auctioned at all is a matter of debate, especially since vertical frequencies of C-Band is a shared spectrum which is coordinated by ITU and of which there is no scarcity.

2. That the very fact that satellite spectrum has no boundary limits and has an international character raises a fundamental constitutional question as to whether the same can be construed to be an exercise of sovereign powers conferred under Section 4 of the Indian Telegraph Act 1885.

3. That therefore before undertaking the present consultation process, the terms of usage between the Government of India and ITU should be included and disclosed to examine whether the satellite spectrum can be auctioned at all or not. Further, a study should be conducted about the possibility of using alternate bands as against consulting on a band which is already in use and is catering to a specific set of services.

4. That the Consultation Paper has advocated the auction route for spectrum allocation in spite of the mandate under Schedule 1 of the draft Indian Telecommunication Bill, 2022. In this regard, it may be noted that Clause 5 of the draft Indian Telecommunication Bill, 2022 states that the Central Government may assign spectrum for telecommunication *"through administrative process for governmental functions or purposes in view of public interest or necessity as provided in Schedule 1*". The Schedule 1 provides a list of services, Serial number 15 of the said list is reproduced below: "*15. Certain satellite-based services such as: Teleports, Direct To Home (DTH), Digital Satellite News Gathering (DSNG), Very Small Aperture Terminal (VSAT), National Long Distance (NLD), International Long Distance (ILD), Mobile Satellite Service (MSS) in L and S bands."* Therefore, it is submitted that in view of intent as expressed above, spectrum for broadcast services should continue to be assigned administratively as the very basic nature of broadcasting does not allow for the auction model to be followed, particularly in respect of teleport services and its corresponding distribution. It may also be noted herein that even globally, spectrum for satellite communication services in bands such as C-band, Ku-band and Ka-band is assigned administratively except for a few exceptions, in which orbital slots along with spectrum have been auctioned.

   Therefore, the status quo in respect of allocating spectrum for broadcast services should be maintained, as auctioning the same will have a detrimental impact on the broadcast industry. Thus, satellite spectrum should continue to be administratively allocated to the existing stakeholders.

5. That there is also a fundamental flaw in the understanding of the difference between satellite and mobile spectrum, which appears to be premised on a

predetermined and preconceived notion. As stated above, satellite spectrum is a shared resource and is governed by ITU frequency coordination and different management rules. Further, the revenue potential of the two sectors is also different.

6. That there are also other reasons as to why the auction methodology should not be followed while allocating satellite spectrum. The most important reason being the reduction in the usage and efficiency of satellite spectrum and complete destruction of value. While terrestrial spectrum is identifiable as frequency chunks which are unique and different from others and therefore can be auctioned with clear right allocations in favour of successful bidders, the same is not true for satellite spectrum. Since satellite spectrum is in the nature of a shared resource, therefore there is an absence of break-up or fragmentation of the same. The wider objective is more important, which is to reach the remote parts and for providing emergency services. There cannot be any exclusivity granted or claimed for satellite spectrum and the most important aspect is the inability of the same to be divided into chunks or into some pre-determined units. If the auction methodology is followed for the satellite spectrum, it would result in gross inefficiency and would create an opportunity for the influential and rich entities to act as gatekeepers against the economically weaker stakeholders/start-ups and eliminate any competitive choice with the consumers. A perfect balance needs to be attained to ensure that both the objectives (of introducing satellite-based internet and safeguarding the existing service providers like broadcasters, DTH & cable operators) are parallelly fulfilled without compromising or creating an existential crisis for any ongoing service/venture.

7. That if the spectrum were to reduce/ become scarce, only entities with deep pockets would corner available satellite capacity and leave negligible satellite capacity for smaller entities/niche broadcasters. As a result of this uncalled-for consolidation, India will lose the multitude of voices and opinions expressed through several media entities which sustains a democracy. Stifling the ability of smaller broadcasters to showcase their content by making the medium of distribution scarce and expensive could have a negative impact on India's global standing on Index of Freedom of Press indicators.

8. That another important aspect which needs to be appreciated is the cost of providing broadband service to enable internet access in underserved areas/population. It must be kept in mind that in order to make internet/broadband affordable for all persons, the cost of provision of the service must also be factored in. The interested telecom operators who desire to venture into this space have already made huge investments for deployment of satellites. In the event an auction takes place, the telecom operators would have no option but to pass on the burden of expenses to the end consumers

since telecom operators will have to purchase the satellite spectrum for a huge price. This would make the provision of internet services to end consumers unaffordable as the rates would be very high. The higher the operational costs, the higher the price and lower the penetration.

9. That linear broadcasters have a very small fraction (<5%) of the total spectrum that 5G spectrum possesses. 5G systems have multiple bands over which they can operate, which extend from 700 MHz band to mmWave bands. In so far as C-Band is concerned, allocation of nearly 50% of the band (3300-3670 MHz) has already been made. It is therefore evident that while impinging on the balance of the C-Band, and specifically 3700-4000 MHz will completely disrupt all C&S broadcast business, it will still not serve the needs of 5G, as higher bandwidths are available only in the mmWave and higher bands, extensively used now in many countries and therefore the present exercise is a matter of serious concern and dismay, as it proposes to auction spectrum without having carried out any study of the outcome and impact such auction will have upon the existing ecosystems. Therefore, it is submitted that the broadcast sector must be guaranteed full protection against any such disruption which is being proposed through this consultation exercise.

10. That the fact that prices of streaming data are at the lowest in India at present, satellite television is available at low-price points or at zero and that DD FreeDish is also available to a large number of Indian households is an advantage, which advantage will be potentially lost if broadcasting/satellite channels falls into the hands of a few corporate entities.

11. That India's digital revolution has been powered by the extremely low rates of internet data and streaming. It is undeniable that the large variety of content available on satellite television and the availability of television channels across genres and languages have played an important role in spreading relevant information of the Central Government and States and has helped faster adoption of digital India initiatives, which has multi-generational positive effects on all aspects of Indian society. The ability of the Government to reach Indians in every corner of the country will be severely impaired if the number and variety of broadcasters at present cease to exist.

12. That apart therefrom, access to the underserved populations will be affected as the cost of satellite services will rise and therefore auctioning satellite spectrum will create further problems instead of solving the existing issues. Auctioning of satellite spectrum may also result in hoarding of spectrum.

13. That it is an accepted fact that competition between various stakeholders in several industries provides consumers with better services at lower prices.

Therefore, competition amongst the various industries should not be restricted by policies such as auctioning of satellite spectrum.

14. That the proposal is anti-competition in nature which can have a detrimental impact on an already established industry, which is a shining example of a home-grown industry that has global reach, and it not only disseminates information and entertainment of the Indian diaspora across the globe, but also helps in spreading Indian culture, values, and the growing economic and social stature of the country amongst the world community.

F. Need for Study before reaching a Conclusion

1. That it is therefore important that before responding to the questions, which are essentially centred around quantum, frequency bands for gateway links & user links there must be an exhaustive study conducted on the various aspects highlighted hereinabove as to whether there should be any practical limit on the number of NGSO satellite systems in LEO & MEO, exclusive assignment, provisions for new entrant, assignment on shared basis, etc. Even otherwise, international practices in U.S.A, Mexico and Brazil are also evidence of the fact that the auctioning methodology has not succeeded, and the countries have shifted to administrative allocation.

2. That in the present Consultation Paper, TRAI has not referred to any data or conducted any study/ impact assessment that allocation of C-Band Spectrum for 5G services will cause to the broadcast industry, nor has it done any research or study to assess the disruption which will be caused as a result of such allocation.

3. That it is reiterated that the present consultation process has not discussed any consequences that would occur to the existing ecosystem of the cable and broadcast sector. Any proposal/consultation to auction the satellite spectrum, which is traditionally used to provide broadcast services and even utilised by the public broadcaster, Prasar Bharti, for dissemination of important news & current affairs events and public welfare messages, must be preceded by carrying out a comprehensive exercise of the pros and cons of the same.

4. That the study must also factor in the international precedents, availability of spectrum, and the ability of any proposed new services to co-exist with the existing broadcast permission holders. Further, a technical study must also be carried out in respect of possible interference in signal/frequencies if allocation in C-Band is made for 5G telecom services. Once the above exercise is complete, then TRAI will be in a position to circulate a consultation paper with all the above findings to the public and the stakeholders. Norms

and practices followed by ITU, as also the NFAP should be studied before undertaking any consultation process.

Therefore, it is submitted that TRAI should defer the present consultation process to first undertake such studies and any consultation on the subject must occur only if the same is determined to be feasible and if it guarantees continuity, stability and a sustainable environment for the existing stakeholders/permission holders. TRAI being an expert body is best placed to do the same.

Accordingly, in its response, NBDA has limited itself to matters of Policy rather than specifics of Auctions.

Q1. For space-based communication services, what are the appropriate frequency bands for (a) gateway links and (b) user links, that should be considered under this consultation process for different types of licensed telecommunications and broadcasting services? Kindly justify your response with relevant details.

NBDA Comments:

1. That the above question should be reframed to create a distinction between the existing space-based services such as VSATs, Broadcasting (C&S), DTH, Maritime and other legacy services and future GSO HTS and LEO/MEO services.

2. That the reason for this distinction is that there is no occasion to disturb the present licensed/permission-based services including the methodology of allocation of spectrum, which is as per ITU guidelines.

3. That access charges which are collected by the WPC for ITU allotted spectrum to these services cannot be extrapolated to bring a presumption that vertical frequencies transmitted by Foreign or Indian satellites can be auctioned.

4. That in regard to the spectrum for GSO HTS and LEO/MEO systems, there should be a clear policy on how present and future systems will be accommodated.

5. That an India Policy should be evolved in respect of the following characteristics of the LEO/MEO systems:

    a. Most of these systems are still evolving and filings are constantly being made to add more satellites in different phases, which may extend till

2028-2030. Hence there are no fixed constellations to be licensed for perpetuity.

b. The spectrum planned for each of the Constellation phases is different, spanning from L-Band, Ku-Band, Ka-Band to higher Bands including 28 GHz and higher bands.

c. A majority of LEO/ MEO systems are software-defined systems which enable them to move their beams and concentrate traffic in areas of highest demand. The beams of such systems may thus be constantly refocusing and pumping large powers to meet their own link budgets, disregarding other operating systems.

d. A majority of LEO systems have very small Antennas and side lobe interferences are very prominent. To have interference free operation of these systems is nearly impossible in respect of legacy systems or within the LEO systems themselves.

e. There is conflict in the spectrum allocations for 5G in the mmWave band and the LEO/MEO systems. The following is the position in the Ka-Band used for Gateways:
27.5-29 GHz- Used by all Foreign LEO/MEO systems based on FCC and OFCOM licenses
27.5-28.5- GHz reserved for 5G in India (making foreign LEO/MEO systems non-viable, only 0.5GHz left)
SES-O3B- 27.5-28.5 GHz (Complete clash with 5G in India)
ISRO Band for HTS satellites: 29-31-GHz (Non-clashing)

Q. 3 Whether there is any practical limit on the number of Non-Geo Stationary Orbit (NGSO) satellite systems in Low Earth Orbit (LEO) and Medium Earth Orbit (MEO), which can work in a coordinated manner on an equitable basis using the same frequency range? Kindly justify your response.

NBDA Comments:

1. That spectrum sharing is important not only amongst LEO/MEO systems but also existing legacy services, with the legacy services having priority of use without interference.

2. That on 20th April 2023, FCC has approved new rules which govern how space-based systems coordinate and share spectrum.[2] This became necessary in the

[2] Revising Spectrum Sharing Rules for Non-Geostationary Orbit, Fixed-Satellite Service Systems, IB Docket No. 21-456; Revision of Section 25.261 of the Commission's Rules to Increase Certainty in Spectrum Sharing Obligations Among Non-Geostationary Orbit Fixed-Satellite Service Systems, RM-11855, Order and Further Notice of

face of early "licensed systems" and the new applicants which have proposed their own systems.

3. That as these new rules of FCC have been issued on 20th April 2023, post the date of issue of the Consultation Paper, many of the questions framed herein need a relook by both the DoT and TRAI.

4. That while the bulk of the LEO systems are licensed by the FCC, FCC is not the ITU nor does it govern the allocations in other countries even though these constellations obviously cover these countries. There are also competing systems announced by other countries or groups including Japan, Korea, Russia and China.

5. That it is the duty of each country to frame rules which permit shared use of spectrum not only between the earlier licensed systems but also with regard to those which follow later. In India, there should be a constitution of a Space Body which should look at these strategic issues which have a long-term bearing on the nation rather than just trying to garner revenues from auction.

6. That furthermore, though the industry does not see any viable alternative to satellite broadcasting, a minimum protection of 10 years should be given to the existing stakeholders, which may be reviewed from time to time.

Q4. For space-based communication services, whether frequency spectrum in higher bands such as C band, Ku band and Ka band, should be assigned to licensees on an exclusive basis? Kindly justify your response. Do you foresee any challenges due to exclusive assignment? If yes, in what manner can the challenges be overcome? Kindly elaborate the challenges and the ways to overcome them.

NBDA Comments:

1. That the bands of C, Ku and Ka are characterized by the use of spectrum by applications such as Broadcasting, VSATs, DTH, Maritime etc., as has been elaborated in the Consultation paper. These are licensed services and the spectrum allocations are based on the licenses so granted. It is reiterated that there is no requirement for disturbing the present arrangements.

2. That the new users which are licensed for GSO HTS or NGSO systems need to operate on "*no interference basis*" to the existing systems. Further, the new systems must provide well-documented evidence that no interference will be caused to

Proposed Rulemaking (April 20, 2023 <https://www.fcc.gov/document/fcc-adopts-new-rules-satellite-system-spectrum-sharing>

the existing systems due to their operations and the steps they intend to take to ensure no interference.

3. That all new GSO/NGSO systems must have gateways within the country and sign accession agreements for all traffic from India to be routed exclusively through gateways and be subject to national laws.

Q5. In case it is decided to assign spectrum in higher frequency bands such as C band, Ku band and Ka band for space-based communication services to licensees on an exclusive basis,
(a) What should be the block size, minimum number of blocks for bidding and spectrum cap per bidder? Response may be provided separately for each spectrum band.
(b) Whether intra-band sharing of frequency spectrum with other satellite communication service providers holding spectrum upto the prescribed spectrum cap, needs to be mandated?
(c) Whether a framework for mandatory spectrum sharing needs to be prescribed? If yes, kindly suggest a broad framework and the elements to be included in the guidelines.
(d) Any other suggestions to ensure that that the satellite communication ecosystem is not adversely impacted due to exclusive spectrum assignment, may kindly be made with detailed justification.
Kindly justify your response.

NBDA Comments:

1. That TRAI is requested to take note of the comments provided in earlier paragraphs, wherein it has been stated that there should be no exclusive assignment of spectrum to any Non-GSO licensee. Further, new systems/space-based communication services must accede to operate on a non-interference basis to existing systems.

2. That TRAI must take note of the recent FCC Docket 23-29 dated 20th April 2023, as cited above, wherein FCC, which licenses the maximum number of LEO systems, has mandated that the systems need to operate on the obligatory basis of " ensuring non-interference" with the older systems.

Q7. Whether any entity which acquired the satellite spectrum through auction/assignment should be permitted to trade and/or lease their partial or entire satellite spectrum holding to other eligible service licensees, including the licensees which do not hold any spectrum in the concerned spectrum band? If yes, what measures should be taken to ensure rationale of spectrum auction and to avoid adverse impact on the dynamics of the spectrum auction? Kindly justify your response.

NBDA Comments:

1. That the allocation of spectrum, which is a national resource, granted whether by way of Auction or Assignment, should be accompanied by a roll out obligation. In case of non-utilization by the allottee, it should revert back to the Government of India with the conditions of license such as Bank Guarantee being applied.

   Further, unutilized spectrum should be made available to the Government of India by adding it to the next round of auctions to qualified and eligible bidders. There can be no exchange of spectrum outside of government licensing.

Q8. For the existing service licensees providing space-based communication services, whether there is a need to create enabling provisions for assignment of the currently held spectrum frequency range by them, such that if the service licensee is successful in acquiring required quantum of spectrum through auction/ assignment cycle in the relevant band, its services are not disrupted? If yes, what mechanism should be prescribed? Kindly justify your response.

NBDA Comments:

1. That for the existing service licensees, there is need to maintain a continuity of licensing and spectrum assignment provisions. This is applicable for all service providers such as C-Band broadcasting, DTH, VSATs, Maritime, Aeronautical and other services.

2. That Government of India has no locus standi in "auctioning" any spectrum which these operators enjoy on Indian or foreign satellites by virtue of ITU coordinated orbital slots with associated emissions.

3. That all new systems must necessarily operate as per ITU provisions of their licenses as purely on no-interference basis.

Q9. In case you are of the opinion that the frequency spectrum in higher frequency bands such as C band, Ku band and Ka band for space-based communication services should be assigned on shared (non-exclusive) basis, -
(a) Whether a broad framework for sharing of frequency spectrum among satellite communication service providers needs to be prescribed or it should be left to mutual coordination? In case you are of the opinion that broad framework should be prescribed, kindly suggest the framework and elements to be included in such a framework.
(b) Any other suggestions may kindly be made with detailed justification.
Kindly justify your response.

NBDA Comments:

1. That at the outset, it is stated that the Bands C and Ku should not be termed as higher frequency bands. This terminology should be preserved for the use of Bands 28 GHz and above.

2. That in accordance with the ITU coordination procedures, the band from each satellite (identified by its orbital location) to Earth and from Earth to such satellite is a protected band for that specific orbital location for which the administration of India as a signatory has acceded to the ITU and the right holder countries. Hence this band cannot be used in a shared manner except that satellites at a different orbital location can use the same band, again as per ITU coordination.
3. That if there are any other systems, which use these bands, and have an impact on the orbital location to earth terminals or earth terminals to the satellite at the orbital location, this must happen on a non-interference basis.

4. That in the higher bands of 28 GHz and above, including the E-Band, the NGSO and GSO systems must operate as outlined in Docket 23-29 of the FCC in terms of obligatory sharing of spectrum on a non-interference basis.

Q10. In the frequency range 27.5-28.5 GHz, whether the spectrum assignee should be permitted to utilize the frequency spectrum for IMT services as well as space-based communication services, in a flexible manner? Do you foresee any challenges arising out of such flexible use? If yes, in what manner can the challenges be overcome? Kindly elaborate the challenges and the ways to overcome them.

NBDA Comments:

1. That it is disturbing to note that while the TRAI is seeking response on whether the spectrum of 28 GHz should be used for space-based services or IMT or in any shared manner, the GSMA has already announced that in India it will be used for IMT[3].

   Apparently, this points to a decision already taken, or defacto understood will be taken.

[3] https://www.gsma.com/spectrum/wp-content/uploads/2018/12/AI-1.13-Positions.pdf
Quote:
"The 28 GHz band will be used for millimetre-wave 5G in the US, South Korea, Japan, India and Canada. This implementation is done outside of the WRC-19 process under an existing mobile allocation".

2. That perhaps during the discussions on the Consultation Paper, it would be clear whether India has taken a position outside of WRC-19 to allow the band of 28 GHz for IMT.

3. That it is reiterated that the band of 28 GHz should be used exclusively for satellite-based space communication services, including those in GSO-HTS satellites and not for IMT shared use. Such shared use is not possible due to high power differentials of GSO and IMT systems.

Questions 11, 12 and 13,14

NBDA Comments:
That no response is being given to the aforementioned question in view of the submissions made in the paragraphs above and as these questions pertain to auction modalities of shared IMT and Satellite use of 28 GHz band which in NBDA's opinion should not be used for IMT.

Q15. What should be the methodology for assignment of spectrum for user links for space-based communication services in L-band and S-band, such as-
(a) Auction-based
(b) Administrative
(c) Any other?
Please provide your response with detailed justification.
NBDA Comments:

1. That the L-Band and S-Band are characterized by larger footprints due to long wavelengths and thus the number of systems which can operate in these bands is limited. This is unlike the C-Band where the satellites can operate with an orbital separation of 1.5 degrees. The C-Band can thus support a large number of satellites, as is the case in Ka-Bands.

2. That further as the satellites in L-band and S-Band can penetrate clouds, fog, rain, storms, and vegetation, these have defence applications as well.

3. That based on country's requirements, the use of foreign systems in this band should be limited to only international systems such as *'Inmarsat'*, and that too limited to distress and safety.

4. That in respect of Non-GSO satellites (i.e. LEO and MEO satellites in the L-Band or S-Bands), the requirements of Indian establishments including Defence, Coast Guard, Airforce and other bodies, including Disaster Relief should be accorded priority as these bands are better suited for these requirements.

5. Any other private systems must contend for the limited spectrum via Auctions.

Q16. What should be the methodology for assignment of spectrum for user links for space-based communication services in higher spectrum bands like C-band, Ku-band and Ka-band, such as
(a) Auction-based
(b) Administrative
(c) Any other?
Please provide your response in respect of different types of services (as mentioned in Table 1.3 of this consultation paper). Please support your response with detailed justification

NBDA Comments:

1. That it is reiterated that the spectrum for Bands such as C-Band, Ku-Band and Ka-Band for GEO satellites which are duly coordinated is owned by such satellites by virtue of ITU coordination via multi-country process in which the Government of India via the WPC is representing the administration.

2. That consequently for various licensed services such as C-band Broadcasting, DTH, VSATs, Maritime, Aero communications, the service providers take leased capacity from the respective satellite operators who have acquired the ITU coordination rights. The users pay the satellite operator the lease charges as applicable for the satellite in use and as per the rates prevailing in international markets. Some of these leases may be for a long duration, i.e., 5 years or more, based on the satellite.

3. That these satellites have a wide footprint which may cover in addition to India, up to 140 or more countries as is the case for Asiasat or Intelsat satellites. Irrespective of the use in India, all the transponders on the satellite are active and beam over the territories covered in the footprint, including India.

4. That in India, the WPC charges administrative spectrum charges only for uplink on the satellite, if any. If the transmissions are from a foreign country (as is quite common, from say, Singapore, Hong Kong or Dubai), the respective Indian users downlink the signals directly and WPC is not involved.

5. That the following facts are important:

    a. The spectrum belongs to the satellite operators which execute leases with Indian consumers, if any. In so far as the transmission to and from the satellite from a specific orbital location is concerned, the spectrum which is used by satellites belongs to the satellite operator as it is allotted by ITU, of which India is also a participating Member.

b. Based on the service, there may be millions of terminals which are in use. These 'receive only' terminals do not need to be licensed and can use any spectrum in the range of the Low Noise Blocks.

c. The spectrum used is only limited to uplink to the satellite and downlink to the terminal and is very directed having a beamwidth of only 1.5 degrees (typical). Hence the same frequencies in say the C-band or Ku-band can be used by dozens of satellites over India and there is no exclusivity involved in say an operator using 13.8 GHz, which can be used by other operators on other satellites as well.

d. The satellite usage of frequencies cannot be compared with terrestrial usage, where a specific frequency is universally transmitted via dozens of towers and repeaters by virtue of which it is omnipresent in use and cannot be used by other operators.

6. That the legacy services and licensed operators in C-Band, Ku and Ka Bands need to operate in the extant environment and there is no occasion for any possibility of auction of these bands for the licensed services cited above.

7. That further any Non-GSO systems which are permitted to operate in these bands must necessarily operate on a non-interference basis only as is very clearly laid down by the ITU regulations for the operation of Non-GSO systems and also explained in the Consultation Paper itself.

Q17. Whether spectrum for user links should be assigned at the national level, or telecom circle/ metro-wise? Kindly justify your response.

Q18. In case it is decided to auction user link frequency spectrum for different types of services, should separate auctions be conducted for each type of services? Kindly justify your response with detailed methodology.

That the mention of auction is only for new services under IMT or Non-GSO systems. NBDA refrains from providing any comments on this matter for new uses, except to say that all such operations must be on a non-interference basis to existing systems.

Other Questions

NBDA submits that the remaining questions are specific to auction modalities and pertain primarily to space-based LEO and GEO-HTS systems, therefore, it is refraining from providing any comments on the same, in view of the submissions made in paragraphs above.

Conclusion

1. That the present consultation process needs to be deferred in order to first undertake study and research, including technical studies on the subject as detailed in the Consultation Paper to determine whether it is feasible and if it guarantees continuity, stability and a sustainable environment for the existing stakeholders/permission holders.

2. That NBDA believes that as the FCC Docket, which is of critical importance in the licensing of space-based systems, is of a very recent release, i.e., of 20th April 2023 and is subsequent to the release of the Consultation Paper, therefore TRAI needs to analyse the new global impact that such a decision creates with possible bearing on the Indian systems and issue a fresh Consultation Paper. The Indian decision makers, particularly when they seem to be making decisions on letting in foreign GSO and Non-GSO systems, whether in collaboration with Indian stakeholders or otherwise cannot ignore the impact of such a critical new development which the Indian markets will bear as a result of permitting the operation of multiple systems.

3. That India should constitute a Space Body which would look at these strategic issues which have a long-term bearing on the nation. A proper Space Body is required to evaluate the strategy and processes as pure civil servants focused on auction cannot decide these issues as the experience of other countries, well advanced in LEO systems, has shown. Even a body such as IN-SPACE is inadequate for this purpose as it is primarily a regulatory body and not a strategic think tank on future systems. In this regard, it may be noted on 20th April, 2023, the FCC via Docket 23-29 has recognized the complexity of the necessity of licensing a continued wave of new systems which are vying for license, while tens of thousands of LEO satellites have already been licensed by the FCC in previous 5 years. Consequently, the FCC has found it necessary to form the Space Bureau which will look into the waves of new licensees and how the systems can interoperate.

4. That India is in a difficult situation as it has very few orbital filings and it needs to oversee the overseas systems making inroads into India (with or without a local partner) with future interests of the country and not compromise future systems and efficient strategic initiatives for the country.

5. That NBDA's response for the preservation of the existing users in the C-band, Ku and Ka bands is very explicit and follows the ITU guidelines for the use of coordinated satellite slots and the right of such users to be provided an environment of no-interference from any new system. In this regard, it may be noted that the FCC Docket also establishes the principle of obligatory sharing of information amongst new systems and older systems and mandates operation on a no-interference basis.

6. That satellite spectrum for the broadcasters should be administratively allocated as vertical frequencies of C-Band is a shared spectrum which is coordinated by ITU and of which there is no scarcity. Therefore status quo should be maintained, as auctioning the same will have a detrimental impact on the broadcast industry.

7. That any recommendation that is finally made by TRAI must take into account the existential threat to the broadcasters/legacy users who are wholly dependent on the C-Band spectrum for Uplinking and Downlinking of signals.

These comments have been made on behalf of the Members of NBDA.

Annie Joseph
Secretary General

May 30, 2023

Encl: As above

ONLY BY EMAIL: <secy.inb@nic.in>

April 18, 2023

The Secretary
Ministry of Information & Broadcasting
A- Wing, Shastri Bhawan,
New Delhi 110003

Sub: C-Band Satellite Spectrum for Broadcast Services

Dear Sir,

News Broadcasters & Digital Association (NBDA) would like to draw your kind attention to certain news reports wherein it has been indicated that the Department of Telecommunication (DoT) is considering allocating a major part of C-Band for 5G services, which at present is being used for broadcast services.

It may be noted that the use of C-band (called Mid-Band in 5G terminology) has already been a matter of extensive debate amongst the stakeholders and consultation over the last 5 years.

1. Background Facts

1.1 At the outset, it is pertinent to mention that accessibility to subscribers is the edifice on which the entire broadcasting industry is premised and the transition from analogue to digital television was a welcome step as it had further strengthened the core of the broadcast industry. However, the proposal floated by the DoT for allotment of C-Band Spectrum to telecom service providers for enabling 5G services poses a gigantic threat to the very existence of the broadcast industry.

1.2 The entire broadcast industry is dependent on C-Band for uplinking and downlinking broadcast signals. This resource is distributed amongst multiple stakeholders for making approximately 900 channels available in India to the subscribers through various Distribution Platform Operators (DPOs). The 6 GHz band (5925 to 6425 MHz) is used for Uplinking and the 4GHz band (3700-4200 MHz) is used for Downlinking. These bands are assigned by the International Telecommunication Union (ITU) and are internationally coordinated.

1.3 Originally, as per the National Frequency Allocation Plan, 2018, only spectrum in the band of 3300-3600MHz was assigned for telecom services while the band range of 3700-4200 MHz was being used by broadcasters and DPOs for enabling services to end consumers.

1.4 TRAI in its Recommendations in 2018, recommended auctioning C band spectrum between 3300-3600 MHz band for 5G services.

Corporate Office: Mantec House, 2nd Floor, C- 56/5, Sector 62, Noida 201 301
Telefax: 0120 – 4129712 **Email:** nbda@nbdanewdelhi.com **Website:** www.nbdanewdelhi.com
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1.5 Subsequently TRAI in its recommendations dated 11th April 2022 on '*Auction of Spectrum in Frequency Bands identified for IMT/5G'* (Recommendations 2022), in Paragraph 6.4 recommended that:

> *"a) As the IMT emissions in the 3300-3670 MHz may saturate the Low Noise Block (LNB) of the FSS earth station which traditionally operates in the 3400-4200 MHz, there is a need to make use of high-quality bandpass filters operating in 3700-4200 MHz range.*
>
> *Therefore, DoT should ask the Ministry of Information and Broadcasting (MIB) to take appropriate action and sensitize the MSOs, DTH operators, and other users to ensure the use of high-quality bandpass filters operating in 3700-4200 MHz range to avoid interference from IMT stations.*
>
> *b) In order to avoid unwanted out of band emissions of the IMT stations falling within the FSS operating band 3700-4200 MHz, DoT should prescribe for having a sharp Spectrum Mask for IMT transmitters with an out-of-band PFD limit."*

1.6 The Recommendations 2022 cast specific responsibilities on the Ministry of Information & Broadcasting (MoI&B) and the DoT to take necessary steps to prevent interference in Satellite Based C-Band Services, particularly in relation to Cable & Satellite broadcast channels. It may be noted that these recommendations were given despite the fact that the band being considered did not directly overlap with the C-Band of 3700-4200 MHz

1.7 Before issuing the Recommendations 2022, the issue raised by the broadcasters during the consultation process which was undertaken by TRAI was the offering of the lower band of 3300-3670 MHz for 5G services which was considered detrimental to Satellite based C-Band, even though it contained a guard band before the regular C-Band of 3700-4200 MHz began.

1.8 Subsequently DoT increased the band to 3300-3670 MHz, pursuant to which the broadcasters objected to the addition of 70 MHz, thereby reducing the guard band from 100 MHz to 30 MHz.

1.9 On 26.10.2022, DoT notified the National Frequency Allocation Plan, 2022 where the C-band used for downlinking i.e., 3700-4200 MHz was allocated for dual use of Satellite and Mobile Services. While notifying the National Frequency Allocation Plan, 2022, DoT failed to take into consideration TRAI's recommendations, and the concerns and issues raised by the broadcasting industry in this regard.

1.10 Based on news reports, it is believed that the DoT is presently considering the auction of the following bands 3700-4000 MHz (out of 3700-4200 MHz downlink band) and 5925-6225 MHz (out of 5925 to 6425 MHz uplink band) for 5G purposes.

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2. The Impact of the Proposed Action on both uplink and downlink Bands of C-band services are given herein below:

2.1 Disruption of Broadcast Services

(i). That the proposed allocation of bands will significantly reduce the C-Band Spectrum available for broadcast services. The proposed approach signifies movement to an operational modality where satellite uplink as backhaul to distribution headends will give way to terrestrial telecom circuits.

(ii). That broadcast services will be completely disrupted, if the aforementioned bands are allocated for 5G services as there will be interference due to the high-power transmissions by terrestrial 5G transmitters, directly within the C-Band which are used for broadcast services.

(iii). That it may be noted that satellite broadcasting services and mobile terrestrial services cannot exist together in the same geographical location.

(iv). That the Low Noise Blocks (LNB) will get overdriven by the In-Band signals in the C-Band which will be about 1000 times stronger than satellite signals.

(v). That all filters with pass band of 3700 to 4200 MHz will be rendered redundant thereby, overlooking the recommendations by the TRAI.

(vi). That the reception of signals by thousands of cable operators across India will get completely disrupted and the customers, primarily in rural areas will cease to receive cable services.

(vii). That initially DoT had assured the broadcasters that they had nothing to fear with the expansion of the band (3300-3670 MHz) as the interference in respect of the frequency relating to broadcast services would be taken care of through filters, however, it appears that with the present proposal, DoT is taking away the whole distribution medium and therefore working against the spirit of doing business freely.

2.2 ITU Coordinated Satellites will be rendered redundant

(i). That over six international satellites and a similar number of ISRO owned C-band satellites will be rendered redundant once the spectrum in the band they operate is allocated for 5G as the reception of frequencies/signals would no longer be possible. As a result, all Satellites in the C-band will be rendered redundant all over India and would be forced to shift operations to other countries in the footprint.

(ii). That is pertinent to mention here that these satellites, having a life of 15 years operate on an ITU coordinated spectrum of 5925-6425 MHz (uplink) and 3700-4200 MHz (downlink) which is guaranteed by the ITU for operation throughout the footprint which may span over 150 countries for satellites such as Asiasat-7

Corporate Office: Mantec House, 2nd Floor, C- 56/5, Sector 62, Noida 201 301
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and Intelsat-20. Being signatories to the ITU, the countries where such signals are received have acceded to the use of these frequencies by the respective satellites. This process of satellite coordination is a collaborative process which has happened over multiple years and has guaranteed operations on a "no-interference" basis. Once the satellite is coordinated, there cannot be any country-based restrictions or "access rights" imposed.

(iii). That in India, the Wireless Planning & Coordination (WPC) Wing of the DoT, Ministry of Communications is the representative organ of the Government of India which is a signatory to the ITU and is responsible for coordination of these satellites. Therefore, if the proposal to take away a part of coordinated C-band is adopted, India would be acting in violation of its commitment to the ITU.

2.3 Change in the nature of the media industry to a monopolistic structure.

(i). That any potential move such as the one being proposed by DoT would divest India of its rich and diverse media network which was built assiduously since the days of satellite communications in the 1990s and would result in the setting up of duopoly operators, thereby rendering thousands of cable operators and their entire ecosystem worthless.

(ii). That the proposal under consideration by DoT would commercially benefit a certain section of telecom operators and result in monopolistic operations which are directly prejudicial to the entire satellite broadcasting industry in India.

(iii). That it appears that the counter argument of the potential beneficiaries on the present proposal seems to be that OTT and IPTV is gaining popularity and will replace the Cable Networks in the near future. While there is no problem with regard to the induction of new technologies including IPTV and OTT, however the creation of any potential monopolistic and restrictive environment due to induction of new technologies will impinge the free speech rights of the media.

(iv). That further, it may be noted that the rural populace in India is heavily dependent on linear TV for their entertainment and education, which they receive at minimal cost despite inadequate infrastructure on the ground. The diverse range of nearly 900 broadcast channels provides regional bonding, ownership and is a part of the social strata.

(v). That it is possible as appeasement to policy makers the telecom operators may offer to carry the linear TV channels via their ground fibre or 5G networks but such captivity of a free medium to the monopolistic networks of a few operators would be unprecedented and would directly impinge the media's right of freedom of speech and expression which would be ultra-vires Article 19(1)(a). In several cases, the Hon'ble Courts have held that allocation of a public resource must be done in a manner so as to be in public interest and to prevent creation of monopolies amongst private entities.

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(vi). That the allocation of new spectrum in the band 3700-4000 MHz and in the 6 GHz uplink band will sound the final death knell of the diverse broadcast industry. The industry intends to oppose the proposal as floated by DoT, for which it needs the support of the MoI&B.

3. Freedom of Speech and Expression of the Media

3.1. When it comes to seeking permission under the Uplinking and Downlinking Guidelines, News and Current Affairs channels are a separate category from other genres, particularly as they disseminate news/information of public interest and are therefore protected under Article 19(1)(a) of the Constitution. Being the fourth pillar of democracy, various Courts have consistently protected the freedom of speech and expression of the media and prevented any restrictions being put on the same, except under the subject matters covered under Article 19(2). It is important to have multiple mediums to disseminate information and if the proposal for allocation of bands cited above is implemented it will result in monopolies being created and therefore be a violation of the free speech rights of the media, as the medium of distribution and the content will be affected. Therefore, it must be borne in mind that even slightest curtailment of this medium will have an impact on distribution of content and content itself, which will be a violation of the free speech rights as mentioned above and therefore such curtailment should be avoided by the authorities. Further, measures which directly impinge freedom of speech and expression guaranteed to the media under the Constitution cannot be done by way of executive policies including administrative decisions.

4. 5G allocations in India and USA are not comparable

4.1 It appears that the demand for allocation of C-band spectrum for 5G is being made based on such allocation in USA. However, it is incorrect to draw a parallel between India and USA, as in USA, the Federal Communication Commission (FCC) evacuated C-Band, post deliberations and planning over many years and after paying over $10 billion to the satellite operators to launch new satellites suitable for the curtailed C-band. Earth stations and the cable operators were also similarly compensated for retrofitting of filters and undertaking earth station modifications for new satellites. In fact, such satellites have already been launched by Intelsat and SES.

4.2 However, the Indian broadcast industry is very different from other countries in terms of size, geography and the number of channels. Restricting satellite broadcasting would result in multi-fold increase in satellite transponder capacity and would not be feasible considering the limited orbital positions available over India. The scarcity created as a result of reduced bandwidth will lead to higher costs for broadcast services.

4.3 The Cable and Satellite Network of India with thousands of headends cannot be modified to work with the current satellites if the band itself is impinged with direct interference from 5G networks. Furthermore, all the filters of 3700-4200

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MHz (numbering in thousands), which have already been installed based on TRAI Recommendations, would also be rendered worthless if the aforementioned bands are allocated for 5G Services.

5. 5G Globally is using new bands beyond C-band (NR Bands and mm Wave bands)

5.1 As stated above, NBDA is not opposed to new technologies and innovation. However, it is a well-known fact that C-band can serve the needs of 5G only for an interim period as the data capacity it presents will be overtaken in a couple of years. The solution, as adopted in other countries lies in the use of higher bands which present higher bandwidths and higher capacities. These include the 28 GHz band, 37 GHz band and 49 GHz band. These bands have been used in many countries including USA, where the telecom companies had to move to these bands despite having subsumed a major part of the C-Band.

5.2 DoT has the option to offer mm band to telcos which has larger data carrying capacity which will result in both sectors continuing to offer best services to end users.

5.3 India can take an early lead in the use of higher bands instead of damaging a vibrant and essential media industry which has been operating successfully though the years. It must be noted that having a diverse media results in sustaining a strong democracy.

NBDA submits that certain sectoral interests have been more vocal in propagating their interests in respect of the modification of bands which are contrary to TRAI recommendations. However, there is ample understanding amongst the concerned authorities of the importance of the media industry as it stands today, especially as linear channels are consumed by millions of rural population. The television channels play a crucial role in maintaining diversity of information, thereby upholding the freedom of speech and expression and preventing monopolistic tendencies.

As a stakeholder, it is of deep concern to the broadcasters that hasty measures are being taken by the authorities to auction and allocate frequency in the C-Band to telecom operators without an iota of concern towards the linear TV broadcasting industry which revolves around the use of C-Band Spectrum, whereas, the telecom service providers have multiple options at their disposal for enabling services including the "mmWave bands" also termed as the 5G-nr-Bands (n-258-26 GHz, n260- 39 GHz, n261-28 GHz) where very large bandwidths are available. It appears that no consideration has been given to the fact that allocation of frequencies in C-Band will also result in disruptions of satellite services for media and broadcast sector and have huge financial ramifications for the various stakeholders in the broadcast industry.

Therefore, in the light of the numerous concerns that have been put forth in this letter, NBDA would request the MoI&B and the WPC Wing of the Ministry of Communications to view the matter judiciously and grant it an opportunity to put forth its reservations, concerns and submissions.

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Registered Office: FF-42, Omaxe Square, Commercial Centre, Jasola, New Delhi –110 025

NBDA looks forward to an urgent intervention in the matter and requests that no unilateral action be taken by DoT without holding a consultation with all stakeholders.

Thanking you,

Yours faithfully,

Avinash Pandey
President

CC: Mr. K. Rajaraman, Chairman, DCC & Secretary (T), Department of Telecommunication <secy-dot@nic.in>
Dr. P. D. Vaghela, Chairman, Telecom Regulatory Authority of India: <cp@trai.gov.in>

Corporate Office: Mantec House, 2nd Floor, C- 56/5, Sector 62, Noida 201 301
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