

Immediate

Government of India
Ministry of Communication
Department of Telecommunications
Wireless Planning & Coordination Wing

Dated: 12.12.2024

Subject: Minutes of the 4th meeting of Working Group (WG) 1 (upto 1 GHz) of NFAP – 2022-Review/ Revision.

Kindly refer to the fourth meeting of the Working Group-1 for the NFAP-2022 Review/Revision was held on November 20, 2024, chaired by Sh. Viresh Goel, Joint Wireless Adviser to the Government of India and please find enclosed the minutes of the meeting for reference and necessary action if any.

Preetam
12/12/2024

(Preetam Meena)
Engineer (WPC Wing)
Tel No.9868049160

Encl: As above

To,

All participants

Government of India
Ministry of Communication, DoT
Wireless Planning & Coordination (WPC) Wing

Dated: 12.12.2024

Subject: Minutes of the 4th meeting of Working Group (WG) 1 (upto 1 GHz) of
NFAP – 2022-Review/ Revision

Working Group-1 of the NFAP-2022 Review/Revision Committee conducted its 4th meeting on 20th Novemeber,2024 in online (virtual) mode under the Chairmanship of Sh. Viresh Goel, Joint Wireless Adviser to the Government of India. Representatives from Industry, Academia, officers from the Wireless Planning Co-ordination (WPC) Wing of the Department of Telecommunications (DoT), and other Government Organizations such as JCES, AAI, CDOT, MIB, Doordarshan, NCRA-GMRT etc. participated in the meeting and took part in the discussions and deliberations.

2. The meeting started with the welcome address and overview from the Chairman, highlighting the salient points of discussions and deliberations on various input documents received by WG-1. He also informed that consolidation of various input documents are under process and outstanding issues needs to be finalized by December 2024, as per stipulated timelines.

3. The input documents which were discussed during the 4th meeting of WG-1 are tabulated as follows:

Sr No.	Name of Contributor	Proposal	Frequency Band
i.	Shure Audio Technologies	Revised proposal for use of 470-694 MHz for Audio PMSE	470-694 MHz
ii.	ITU-APT Foundation of India (IAFI)	Proposal for use of 174-230 MHz and 470-612 MHz for Audio PMSE	174-230 MHz and 470-612 MHz
iii.	National Centre for Radio Astrophysics – GMRT	Rephrase IND 13 footnote for exact location, size of GMRT facility near Pune and protection of radio astronomy services	50 MHz- 1500 MHz
iv.	National Centre for Radio Astrophysics – GMRT	Mentioning of “IND 13” in Frequency Allocation Table for all frequencies below 1500 MHz, for which RAS frequencies are applicable	50 MHz- 1500 MHz
v.	National Centre for Radio Astrophysics – GMRT	Note in IND 16 for protection of RAS band 608-614 MHz around GMRT facility	608-614 MHz
vi.	ITU-APT Foundation of India (IAFI)	918-922 MHz for NB-IoT	867-868 MHz, 918-922 MHz

vii.	ITU-APT Foundation of India (IAFI)	Simplification of IND 16 table (Table to Para format) Deletion of Note 1 and Note 2 of IND 16	612-960 MHz
viii.	Arya Omnitalk Radio Trunking Services	Channel Plan for Digital PMRTS with 6.25/12.5 KHz channel spacing in 811-814 MHz Band	811-814/856-859 MHz

4. Discussions on various input documents: -

A. Audio PMSE

4.1 Shure Audio Technology presented their revised input document in the meeting, requesting addition of an IND footnote in NFAP for Audio PMSE in 470-698 MHz frequency band, referring to ITU-R RR No. 5.296.

4.1.1 COAI commented that the RR footnote No. 5.296 is applicable to Region 1, not Region 3. It was also pointed out that the range for APT 600 MHz starts from 612 MHz, Hence the range may be kept below 612 MHz. There is also requirement for studies with regard to potential interference scenarios in the adjacent bands to Primary services . JCES also supported the views presented by COAI.

4.1.2 Shure representative pointed out that it is already highlighted that the purpose of the IND footnote would be get secondary allocation for Audio PMSE in the requested band, and Audio PMSE shall not cause harmful interference and claim protection from existing or planned primary services. The idea behind the proposal was to get regulatory certainty regarding the use of Audio PMSE applications and thereby give confidence to the associated industry.

4.1.3 Another representative from Audio Broadcasting Industry also supported the view of the Shure and seconded their proposal. Also Stated that the radiated power output from Wireless Microphones is only 50 mW and the possibility of interference to other devices dose not exist. Moreover, the PMSE usages are allowed in Region 1, 2, and 3.; as the requirement and the usages of wireless microphone are essential in today's world.

4.2 ITU APT Foundation of India presented their input contribution on Audio PMSE in frequency bands 174-230 MHz and 470-612 MHz. The proposal was similar to the Shure Audio Technology contribution on Audio PMSE, apart from the facts that to considered Audio PMSE in VHF range 174-230 MHz and limited the allocation for Audio PMSE to 470-612 MHz in UHF range. IAFI representative highlighted that Audio PMSE was limited to 612 Hz in order to avoid any kind of interference to future deployments to Cellular Mobile Services. It was also clearly mentioned by IAFI representative that in Region 3, the Land Mobile, PMSE along with Broadcasting is Primary Service along with IMT and Region 1 allocations does not have any impact on Region 3. IMT and PMSE (which comes under Land Mobile Service) both enjoy primary status in the frequency bands under consideration.

4.2.1 The representative of representative from Audio Broadcasting Industry stated that to limitation up to 612 Mhz is agreeable to Broadcasting Industry and Manufacturers.

4.2.2 Shure added that there is no IMT deployment in 612-698 MHz as on date and . Also, there is no clarity on IMT usage in this band in the near future as there is no

ecosystem for IMT available and is yet to be developed. Hence, it was requested to consider Audio PMSE secondary allocations till 698 MHz, until auction of this band for IMT and its deployments are finalized in the referred band.

4.2.3 COAI stated that the proposal of IAFI for limiting Audio PMSE till 612 MHz, in line with comments provided by COAI on the proposal of Shure. It was also stated by COAI that if WG can discuss issues outside the decisions of WRC in policy terms. In this respect IAFI representative commented that the band under consideration is already a mobile service in Region 3 and part of RR and Land Mobil and IMT are co-primary and equal status in the whole band 470-960 MHz and entire band is available to each country to decided how to use it.

4.2.4 The Chairman clarified that NFAP Revision activities are not just limited to incorporating revisions of RR alone, but also deals with India specific requirements for usage of frequency spectrum, and the Audio PMSE proposal needs to be considered based on the proposals, requirements, and necessity, current usages day in and day out in seminars, functions; and applications left out in the current NFAP. It was also requested the input contributors to share the frequency allocation details of PMSE in the applicable bands for Region 3 countries.

4.2.5 With regard to VHF band of 174-230 MHz proposed by IAFI for audio PMSE was supported by some of the stakeholders and there were no comments in opposition of the proposal from any of the stakeholders.

B. IND 13

4.3. Representative from NCRA-GMRT presented two input documents on NFAP footnote IND 13 of NFAP-2022.

4.3.1 The first input document which was regarding rephrasing the IND 13 footnote of NFAP for including the exact geo-coordinates and spread of the GMRT facility. NCRA-GMRT also pointed out that there were a special mention of frequency bands (68-74.8, 585-608 and 614-890 MHz) in IND 13, which may be removed and the currently indicated frequency range 50-1500 MHz be retained as they use this band at the specific area. In addition, the proposal mentioned that 'Any new proposed services and or/spectrum allocations affecting this limited geographic region and frequency range may be done in coordination with the GMRT, NCRA authorities on case-by-case basis.'

4.3.2 The other document presented by NCRA-GMRT is basically to include IND 13 in table of "Allocation to Radiocommunication Services" to all frequencies in the band between 50 MHz-1500 MHz, to become aware of all concerned.

4.3.3 IAFI representative commented that the specific bands proposed to be deleted from IND 13, which are allocated for Radio Astronomy and may not be deleted. COAI commented that the details of RAS in the frequency band 608-614 MHz and its location be shared for analysis. They also requested clarification if the request of NCRA is specific to Pune location or other locations also. It was also mentioned that until the detailed analysis is shared status quo may be maintained.

4.3.3. In this regard it was clarified that the bands proposed to be deleted are now covered in the proposed larger frequency band 50 MHz – 1500 MHz. It was also clarified that the request is for a specific location at Pune only. It was also confirmed by NCRA that the mentioned specific bands (68-74.8, 585-608 and 614-890 MHz) in IND 13 are not RAS bands, and he was not aware why these bands are specifically mentioned in the IND 13. NCRA proposal is for only seeking protection to their very

sensitive GMRT reception facility at the specific location new Pune with their operational range of frequency band 50 MHz – 1500 MHz.

4.3.4 It was also pointed out by IAFI that 50-1500 MHz is a huge frequency range with a large number of users. Hence, coordinating with all users in the entire band may be difficult proposition. They suggested that it would be better to mention the protection levels required for interference free operations of GMRT facility.

4.3.5. Nokia representative further added on this point stating that there is a need to specify the exact requirements of protection levels/power levels for interference free operation of GMRT equipment, through appropriate studies. They also sought where there were interference to GMRT earlier or seeking protection to GMRT prospectively.

4.3.6. In this context, NCRA-GMRT stated that all other users/services near GMRT facility may be allowed to operate at such power levels so that they don't drive the extremely sensitive GMRT equipment (which are receive Only) in non-linear range. The sensitivity and importance of this facility should be recognized by all wireless users who are operating in and around the GMRT geographical area. Hence, coordination with all relevant stakeholders in 50-1500 MHz band is requested in the proposal, for finding ways of wireless co-existence without suffering harmful interference.

4.3.7 IAFI noted that putting a large range of 50 MHz-1500 MHz in NFAP for which coordination needs to be done will be difficult, considering that variety of operations in these bands. It would be reasonable to add some specific bands and for other bands coordination can be done on case to case basis.

4.3.8 In this regard representative from NCRA-GMRT stated that protection requested is to the extent possible and they are not seeking exclusive protection. They are just seeking to co-exist in these bands as GMRT operations are quite sensitive, though they have taken radio protections and the nearby operations may co-exists till they don't drive their system in non linear range in these bands and affect the GMRT facility at specific location near Pune.

4.3.9. The Chairman also recognized that NCRA is seeking protection of GMRT at specific location; this GMRT facility of international repute and acknowledged their proposal in the specific geographical area for the specified frequency range of 50-1500 MHz. This facility is being used by Astronomers to monitor beyond the horizon, and carry out their work. He also mentioned that the protection levels/power levels for interference free operation of GMRT equipment should be given due importance and protection to GMRT at specific location may be done on case-by-case basis.

C. IND 16

4.4. NCRA-GMRT also submitted an input contribution with regard to NFAP footnote IND 16 of NFAP. NCRA-GMRT has requested to add a note to IND 16 table of NFAP, stating that "IMT allocations may not be made in 608-614 MHz band around the radio astronomy facility referred to in IND 13. Additionally, in view of the fact that the primary allocation for this band is for RAS, protection from all emissions be provided to any new RAS facilities which might be setup in future on Indian soil." However, the exact revised version of input document couldn't be shared by NCRA-GMRT during the meeting and it was stated that the document shall be sent shortly for perusal of all the stakeholders.

4.4.1 COAI sought clarification on the introduction of the Note in IND 16 mentioning the specific location of GMRT near Pune; which was clarified by the NCRA, and

proposed Text was displayed. It was also clarified that in Table of IND 16, the applicable RR footnote need to be mention in front of the 608-614 MHz band.

4.4.2 In this context, NCRA-GMRT was advised that the relevant input document should be shared at the earliest and it should contain reference to the RR No. which mentions primary allocation to RAS in 608-614 MHz band.

D. NB-IoT in 918-922 MHz band

4.5. IAFI presented an input document to support NB-IoT in 918-922 MHz band. As per the proposal, it is proposed to add the following text to NFAP as a new India footnote to support NB-IoT: “The frequency range 918-922 MHz band may be used for LPWAN & low power short range communications, in addition to the band 865-868 MHz”.

4.5.1. It was pointed out that 865-868 MHz had already been delicensed for such activities and it appears that 918-922 MHz proposal may also be for delicensing to accommodate the applications specified. Also, it had already been communicated to all stakeholders earlier that as per the Main Committee of NFAP Review, the delicensing matters are not to be taken up at the NFAP WG level. Hence, the stakeholder was requested to take up the proposal with concerned group in WPC Wing (hq), through appropriate communication channel. IAFI agreed to the same.

4.6. IAFI also submitted a input document on NFAP footnote IND 16. The proposal of IAFI was to convert the table in IND 16 to paragraph format specifying that it would be easier to comprehend. More importantly, the proposal sought for deletion of Note 1 and Note 2 of IND 16.

4.6.1 It was confirmed that the proposal was considered i.r.o. portion as per the scope of WG-1, i.e upto 1 GHz only.

4.6.2 Elaborate deliberations were initiated COAI, GSMA and JCES on this proposal i.r.o. convenience to the Table format, simplification of Notes below the Table. It was identified that the proposal is on deletion of Note 1 and Note 2 below the Table. It was stated that DD/ Broadcasting has also proposed to delete the Note 1. Upon seeking specific comments from the Stakeholders, and Industry the COAI and GSMA sought a weeks time to comment on the proposal of deletion of Note 1 and Note 2.

4.6.3 JCES sought clarification whether there is any IMT ecosystem available in the bands proposed to be deleted. Clarification was sought whether the Table under IND 16, and it was clarified the Table to be retained.

E. Channel Plans

4.7. A contribution was received from Arya Omnitalk Radio Trunking Services Limited regarding Channel Plans in 811-814 MHz, which was elaborately discussed in the meeting:

4.7.1. Arya Omnitalk representative presented the Channel plan regarding for 12.5 kHz and 6.25 kHz channels in 811-814 MHz.

4.7.2. It was requested Arya Omnitalk to provide details of bunching of the channels, which will be needed during actual assignment of the channels. In response, Arya Omnitalk stated that they would be providing the requisite information at the earliest.

4.7.3. Susan Future Technologies Pvt. Limited added that it would be submitting a proposal for wideband Channelling Plan in the referred frequency band, for consideration of the WG.

5. The Frequency Plans which are currently in use for VHF and UHF by Frequency Assignment groups of WPC Wing, DoT were also presented in the meeting to all stakeholders, to get approval for publishing the same in the revised NFAP document. Additional Channelling Plans, if available, were also requested from the stakeholders, for addition in the list.

5.1. IAFI representative supported the proposal of adding Channel Plans to NFAP document. He also added some other channel plans which are available in ITU-R Recommendations like ITU-R M.2015, may also be included in the list.

6. Finally, the Chairman informed that WG1 work is nearing its finalization stage as per the stipulated timelines. Most of the input contributions received by WG-1 have been thoroughly deliberated in the four meetings held to date. The Chairman thanked all the stakeholders for the active participation in the meetings and again requested everyone to provide their written comments, counter-comments in respect of the various outstanding issues/input documents, along with necessary justification, at the earliest. Also, any new contributions may strictly be made within 27th November 2024, so that all pending work may be deliberated and finalized by the next meeting in December 2024.

The meeting ended with a vote of thanks.

List of Participants

Sl No.	Name	Organisation
1.	Rajeev Kumar	Doordarshan
2.	Rajesh Kumar Rana	SHURE
3.	Abhay Mishra	DEAL, Dehradun
4.	Abhijit Panicker	COAI
5.	Ankur	GMRT
6.	Anuresh Sharma	
7.	Anil Tandon	DG, BIF
8.	Ashish Garg	GSMA
9.	Ashish Kumar Bahal	MTROA
10.	Ashwini VN	Harman International
11.	Athul Johny	
12.	AVS Rao	Arya Omnitak
13.	Balamurali Divakaran	Calixto Systems Pvt. Ltd.
14.	Bharat Bhatia	IAFI
15.	Bharti	-
16.	Bhawana Kanyal	-
17.	Debashish Bhattacharya	BIF
18.	Anurag Gupta	CDOT
19.		DCPW
20.	Dilip Lakhera	Airtel
21.	Divya Oberoi	NCRA/GMRT
22.	Dr. Sidharth Shukla	
23.	Harish	IIT Kanpur
24.	Harsh	IN-SPACE
25.	Kantha Shree	C-PRAV Certification Service
26.	Kshem Kapoor	COAI
27.	M. Rajith Ali	SIA-India
28.	Mallesh	Zero-Sum
29.	Manoj Kottil	
30.	Ashwani Kumar	Nokia
31.	Rajesh Kumar Rana	SHURE
32.	Rashid Mohamad	-
33.	Ravi Tulsian	
34.	Rijin John	Silizium Circuits
35.	Suresh Kumar Karthikeyan	Susan Future Technologies Pvt Limited
36.	Suresh Madan	CEMA
37.	Swati Rawat	RJIL
38.	Uma	-
39.	Vikram Tewathia	COAI
40.	Vipen Malhotra	MTROA
41.	Vikas Jakhar	JCES
42.	Umesh Kumar	AAI
43.	Viresh Goel (Chairman)	WPC Wing, DoT
44.	Vishal Singh Yadav	WPC Wing, DoT
45.	Preetam Meena	WPC Wing, DoT
46.	Raju Dey	WMO, DoT