

Immediate

Government of India  
Ministry of Communications  
Department of Telecommunications  
6<sup>th</sup> Floor, WPC Wing, Sanchar Bhawan,  
20, Ashkoa Road, New Delhi-110001

No. R-11014/04/2021-NT

Dated: 17.03.2021

Meeting Notice

**Subject: Meeting with stakeholders w.r.t. Working Group (WG)-1 (upto 1 GHz) of NFAP-2018 Review/Revision Committee-regarding.**

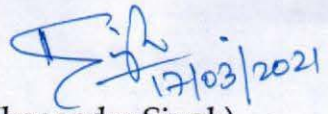
A Committee has been constituted by the department to review/revise the National Frequency Allocation Plan (NFAP) – 2018 under the chairmanship of the Wireless Advisor to the Government of India comprising three working groups-WG-1, WG-2 and WG-3(Reference WPC Wing OM T-11012/03/2020-Conf dated 26.02.2021).

2. Working Group – 1, constituted as part of the above committee is tasked with the review and revision of the NFAP 2018 for the frequency bands upto 1 GHz, taking into considerations of World Radiocommunication Conference 2019 as available in the Radio Regulations 2020, national requirements and the latest developments in the Radiocommunication technologies.

3 In this regard, input/comments were sought from the national stake holders for consideration for incorporation in the revised NFAP. Working Group-1 has received inputs/comments for the frequency band upto 1 GHz from various stake holders. These inputs/comments have been suitably incorporated in the draft revised NFAP proposal. The same is attached herewith for further discussion/deliberation in the virtual meeting scheduled to be held **on 19.03.2021(Friday) at 15:00 Hrs.** The link for the meeting is:

<https://vcdot.cdof.in/vmeet/mah-ps1-lft>

4. All the stake holders are requested to attend the meeting for finalization of the draft revised NFAP proposal for the frequency band upto 1 GHz.

  
17/03/2021

(Khagendra Singh)

Assistant Wireless Advisor and

Member Secretary (WG1)

Tel No. 2303 6633

Encl: As above

To,

1. All Concerned
2. Sr. DWA(V)/Sr.DWA(CoP)/Sr.DWA(P)/Sr.DWA(T)/Sr.DWA(BW) WPC Wing with the request to attend the meeting.
3. Sr.DWA (Conf), WPC wing for information pls.
4. Director (IT), DoT, Sanchar Bhawan with a request to upload in DoT website.

## **Draft Proposal for NFAP-18 update.**

### **Introduction**

Working Group received 10 no of contributions for updating NFAP-18. Contributions received are from COAI, Qualcom, Airtel, BIF, RJIL, Amateur(NAIR), TIFR, PMRTS Associations, DGCA, and Mr RB Sahajpal. The contributions are related to modification of IND footnote 13,16, 18, 25, 26, one contribution to make provision for drone device and one contribution was received for modification of NFAP-18 structure.

Contributions were discussed in virtual mode among the working group members, and the modification in the IND footnote 13, 16, 18, 24, 25, 26 are brought forwarded in a Draft proposal developed by the working group. The working group has also consulted the various WPC sections internally before proposing the draft. Some bands are included for discussion among the stakeholders who are interested especially proposals in the Amateur bands and protection of usages in band for TIFR,

Draft proposals are given with relevant part of Frequency Allocation Table(FAT), corresponding footnote(s) below the FAT, followed by other proposals.

### **Draft Proposal**

**IND1 to 15:** No modification

**470-890 MHz**

Allocation to Radiocommunication Services			
Region 1	Region 2	Region 3	India
<b>470-694</b> BROADCASTING  Fixed Mobile  5.292 5.293 5.295  5.149 5.291A 5.294 5.296 5.300 5.304 5.306 5.312	<b>470-512</b> BROADCASTING Fixed Mobile  5.292 5.293 5.295	<b>470-585</b> FIXED MOBILE 5.296A BROADCASTING  5.291 5.298	<b>470-585</b> FIXED MOBILE 5.296A IND 16 BROADCASTING Space operation (space-to-Earth)  5.298 <del>IND-24</del>
	<b>512-608</b> BROADCASTING 5.295 5.297	<b>585-610</b> FIXED MOBILE 5.296A BROADCASTING RADIONAVIGATION  5.149 5.305 5.306 5.307	<b>585-608</b> FIXED MOBILE 5.296A IND 16 BROADCASTING RADIONAVIGATION 5.149 <del>IND-25</del>
	<b>608-614</b> RADIO ASTRONOMY Mobile-satellite except aeronautical mobile-satellite (Earth-to-space)	<b>610-890</b> FIXED MOBILE 5.296A 5.313A 5.317A BROADCASTING  5.149 5.305 5.306 5.307 5.320	<b>608-610</b> FIXED MOBILE 5.296A IND 16 BROADCASTING RADIONAVIGATION RADIO ASTRONOMY 5.149 5.307 IND 25
	<b>614-698</b> BROADCASTING Fixed Mobile  5.293 5.308 5.308A 5.309		<b>610-614</b> FIXED MOBILE 5.296A 5.313A 5.317A IND 16 BROADCASTING RADIO ASTRONOMY 5.149 5.307 5.320 <del>IND-25</del>

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694-942 MHz

Allocation to Radiocommunication Services			
Region 1	Region 2	Region 3	India
<b>694-790</b> MOBILE except aeronautical mobile 5.312A 5.317A BROADCASTING  5.300 5.312			
<b>790-862</b> FIXED MOBILE except aeronautical mobile 5.316B 5.317A BROADCASTING 5.312 5.319	<b>698-806</b> MOBILE 5.317A BROADCASTING Fixed 5.293 5.309		<b>614-890</b> FIXED MOBILE 5.296A 5.313A 5.317A IND 16 IND 18 BROADCASTING
<b>862-890</b> FIXED MOBILE except aeronautical Mobile 5.317A BROADCASTING 5.322 5.319 5.323	<b>806-890</b> FIXED MOBILE 5.317A BROADCASTING  5.317 5.318		5.149 5.320 <del>IND-25</del>
<b>890-942</b> FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 Radiolocation  5.323	<b>890-902</b> FIXED MOBILE except aeronautical Mobile 5.317A Radiolocation 5.318 5.325	<b>890-942</b> FIXED MOBILE 5.317A BROADCASTING Radiolocation  5.327	<b>890-942</b> FIXED MOBILE 5.317A IND 16 IND 26 BROADCASTING Radiolocation

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**IND16** The following frequency bands, or parts thereof have been identified for implementation of International Mobile Telecommunications (IMT):

Sl. No.	Band as mentioned in RR	Relevant RR Footnotes
1	450-455 MHz	5.286AA
2	455-456 MHz	
3	456-459 MHz	
4	459-460 MHz	
5	460-470 MHz	
6	470-585 MHz*	5.296A
7	585-610 MHz [Proposal to delete star]	
8	610-890 MHz	5.313A, 5.317A
9	890-942 MHz	
10	942-960 MHz	
11	1427-1429 MHz	5.341C, 5.346A
12	1429-1452 MHz	
13	1452-1492 MHz	
14	1492-1518 MHz	
15	1710-1930 MHz	5.384A, 5.388
16	1930-1970 MHz	
17	1970-1980 MHz	
18	1980-2010 MHz	
19	2010-2025 MHz	
20	2025-2110 MHz	5.388
21	2110-2120 MHz	
22	2120-2160 MHz	
23	2160-2170 MHz	
24	2170-2200 MHz	
25	2300-2450 MHz	5.384A
26	2500-2520 MHz	5.384A
27	2520-2535 MHz	
28	2535-2655 MHz	
29	2655-2670 MHz	
30	2670-2690 MHz	
31	3300-3400 MHz	5.429F
32	3400-3500 MHz	5.432A, 5.432B, 5.433A
33	3500-3600	

~~\* Part of the band 470-698 MHz would be made available for IMT once the current and future usage of the band 470-698 MHz by the broadcasting service is finalized.~~

[Proposal]

[\* The block 520-585 MHz of 470-585 MHz band may be considered for IMT in coordination with other existing services]

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**IND 17** : No modification

694-942 MHz

Allocation to Radiocommunication Services			
Region 1	Region 2	Region 3	India
<b>694-790</b> MOBILE except aeronautical mobile 5.312A 5.317A BROADCASTING  5.300 5.312			
	<b>698-806</b> MOBILE 5.317A BROADCASTING Fixed 5.293 5.309		
<b>790-862</b> FIXED MOBILE except aeronautical mobile 5.316B 5.317A BROADCASTING 5.312 5.319	<b>806-890</b> FIXED MOBILE 5.317A BROADCASTING  5.317 5.318		
<b>862-890</b> FIXED MOBILE except aeronautical Mobile 5.317A BROADCASTING 5.322 5.319 5.323			
<b>890-942</b> FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 Radiolocation  5.323	<b>890-902</b> FIXED MOBILE except aeronautical Mobile 5.317A Radiolocation 5.318 5.325	<b>890-942</b> FIXED MOBILE 5.317A BROADCASTING Radiolocation  5.327	<b>890-942</b> FIXED MOBILE 5.317A IND 16 IND 26 BROADCASTING Radiolocation

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**IND18:**

**IND 18** In Region 3, the frequency ranges 406.1-430 MHz, 440-470 MHz, and 4 940-4 990 MHz are harmonized for Public Protection and Disaster Relief (PPDR) applications. ~~In Region 1, the frequency range 380-470 MHz is harmonized for PPDR applications.~~ Additionally, parts of the frequency range ~~694806~~-894 MHz may also be considered for PPDR applications. See **Resolution 646 (Rev. WRC-1519).**]

The band 450-470 MHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) (see No. 5.286AA). The band 406.1-410 MHz is also allocated to radio astronomy service.

Trunked radio systems are operational in the frequency ranges 336-340 MHz paired with 346-350 MHz, 351-358 MHz paired with 361-368 MHz, 380-389.9 MHz paired with 390-399.9 MHz, 410-420 MHz paired with 420-430 MHz, and 806-819 MHz paired with 851-864 MHz. The preferred use of these frequency ranges is as under.

Sl. No.	Frequency (MHz)	Paired Frequency (MHz)	Proposed Applications/ paired frequency (MHz)	
1	336-338	346-348	PMRT	
2	338-340	348-350	PMRT	
3	351-356	361-366	CMRT	
4	356-358	366-368	CMRT	
5	380-389.9	390-399.9	380-387.5 (PPDR)	390- 397.5 (PPDR)
			387.5-390 (CMRT)	397.5- 400 (CMRT)
6	410-420	420-430	410-417.5 (PPDR)	420- 427.5 (PPDR)
			417.5-420 (CMRT)	427.5- 430 (CMRT)
7	440-470	-	Part of 440-470 MHz may be considered for PPDR.	
8	806-811	851-856	PPDR	
9	811-814	856-859	<del>PMRT- CMRT/PMRT*</del>	
10	814-819	859-864	PMRT	
11	819-824	864-869	<del>PMRT</del> CMRT	
12	4940-4990	-	PPDR	

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\*To be considered for digital technology

*Abbreviations*

- PMRT: Public Mobile Radio Trunking
- CMRT: Captive Mobile Radio Trunking
- PPDR: Public Protection and Disaster Relief

Existing radio trunking systems, not in conformity with the above table, will continue to operate until the end of their lifetime. New systems or expansion of existing systems are encouraged to conform to the above table.

Wideband and broadband PPDR applications shall be in accordance with the channel arrangements that promote harmonization to the greatest extent possible. The harmonization shall also be encouraged for the radio trunking systems in general and, in particular, those operating in conformity with the table above.

Broadband PPDR application will be encouraged in the Frequency Band 410-420 MHz paired with 420-430 MHz

**IND 19 to IND 23 :** no modification

~~**IND 24**— Subject to not constraining the deployment of the services by which the bands 470–520 MHz and 520–585 MHz may primarily be used, the requirements of fixed and mobile services may also be considered in these bands.~~

~~**IND 25**— Subject to coordination and not constraining the deployment of the services by which the band 585–698 MHz may primarily be used, the requirements of Digital Broadcasting services, including Mobile TV, may also be considered in the band.~~

**IND 26 to IND 37 :** No modification

#### **Other proposals**

**IND 13** The facility use for radio astronomy service at Pune needs to be protected from any radio emissions which may fall within the frequency bands allocated to radio astronomy service. The assignments to the frequency bands listed in **No. 5.149** need to specifically take into account the protection aspect to the facility use for radio astronomy service at Pune.

**[Footnote 5.149 refers to the bands (in Region 3):-13 360-13 410 kHz,25 550-25 670 kHz,37.5-38.25 MHz, 73-74.6 MHz ,322-328.6 MHz,406.1-410 MHz,608-614 MHz ]**

**[TIFR consideration for protection of RAS in the band 37.5-38.25 MHz, 68-74.8 MHz ,406.1-410 MHz ,585-608 MHz,608-610 MHz,610-614 MHz,614-890 MHz**

**requires thorough analysis while protecting existing assignments]**

**IND 18** Channeling plan to accommodate digital technologies in 6.25 kHz, 12.5 kHz and 25. kHz to be submitted for discussion

**[As the mix of channel plans cannot be implemented in the same frequency range, the suggestion for earmarking of separate sub-bands for respective channel widths could be feasible. However, if their demand is limited to separate/ variety of channel plans and not for additional bands, the channel plan issue can be dealt separately]**



**IND 26** In addition to the services by which the bands 902.5-915 MHz and 947.5-960 may primarily be used, certain frequency spots may also be considered for train control & mobile train radio systems at specified locations.

[BIF/Qualcom Proposals were received for making the 25MHz paired spectrum 900 MHz band exclusively for TSP s, existing operations of Defence and Railways are required to be shifted to other frequency bands. Therefore, at this stage, the proposal may not be considered. This may require long term coordination of the stakeholders with WPC HQ]

Amateur(NAIR) Proposal for expansion to below bands.

1800-2000 kHz, 3700-3890 kHz, 10100-10150 kHz, 52-54 MHz,146-148 MHz

[Due to existing assignments in these bands, proposal cannot be considered. However the operational difficulties and inconsistencies faced by amateur operation viz-a-viz international amateurs for adopting different emissions can be taken up with COP wing of WPC]

1) BIF/COAI : Contribution for inductive application in the band 9KHz to 30 MHz Maximum 250nW (-36 dBm) to enable innovations and technology expansion in field of short-range low power inductive wireless charging.

[https://www.etsi.org/deliver/etsi\\_en/300300\\_300399/300330/02.01.01\\_60/en\\_300330v020101p.pdf](https://www.etsi.org/deliver/etsi_en/300300_300399/300330/02.01.01_60/en_300330v020101p.pdf)

[The feasibility of identifying the different sub-bands in 9KHz to 30 MHz for the generic purpose as defined in the ETSI document need to be examined by the WPC and the GSR 1047 accordingly can be updated.]

**DGCA** proposal for 50-100 MHz de-licensed spectrum in the 750-950 MHz band for the Drone operations for IoT, Command & Control, Closed Network Security Cameras, Long Range Internet etc. Such a big chunk of spectrum may not be available for extraction in the said band for delicensing. It is understood that the LTE based licensed and 2.4GHz/5 GHz delicensed systems are available in machine to machine communications industry which can be utilized by the Drone applications also. However, any proposal for new regulation in the ITU-R can be initiated thru coordination with WPC HQ, New Delhi.

[Due to existing assignments in the proposed bands it is not feasible to extract un-licensed spectrum in the band]