Remarks in the National Frequency Allocation Table

IND01 Freq. spots 101.4, 121.6, and 145.7 kHz have been earmarked for cable locator systems.

IND02 The following frequencies are earmarked for Cordless Telephones:
Base unit: 1610, 1640, 1675, 1690 kHz, 43.720, 43.740, 43.820, 43.840, 43.920, 43.960, 44.120, 44.160, 44.180, 44.200, 44.320, 44.360, 44.400, 44.460, 44.480, 46.610, 46.630, 46.670, 46.675, 46.710, 46.725, 46.730, 46.770, 46.775, 46.825, 46.830, 46.870, 46.930 and 46.970 MHz.

Remote Unit: 26.375, 26.475, 26.575, 26.625, 48.760, 48.840, 48.860, 48.920, 49.020, 49.080, 49.100, 49.160, 49.200, 49.240, 49.280, 49.360, 49.400, 49.460, 49.500, 49.670, 49.770, 49.830, 49.845, 49.850, 49.860, 49.875, 49.890, 49.930, 49.970, 49.90, 150.350, 150.750, 150.850 and 150.950 MHz.

IND03 Amateur Service is permitted in the following bands:

1820-1860 kHz

3500-3700 kHz

3890-3900 kHz

7000-7100 kHz

14000-14350 kHz

18068-18168 kHz

21000-21450 kHz

24890-24990 kHz

28000-29700 kHz

144-146 MHz

434-438 MHz

1260-1300 MHz (Radio location has got the priority over Amateur)

IND04 The frequency spots 2010.4 kHz and 2025 kHz are earmarked for Fishing vessels.

IND05 The frequency spots 3213, 5218, 13862.4 kHz, 73.675, 79.025, 159.55, 436.525 & 461.525 MHz are earmarked for demonstration of equipments on Non Interference and Non Protection Basis (NIB/NPB-shared use). In addition, appropriate channels for short-term demonstration of equipment in other frequency bands may be considered on case-by-case basis, on NIB/NPB.

IND06 The frequency spots 3698 and 5883 kHz are earmarked for shipping industry.

IND07 The frequency spots 8268, 12361.4 kHz, 156.375, 156.475, 156.575, 156.675, 156.850 MHz are earmarked for port operations (from Shore to Ship).

IND08 Use of wireless equipments intended to be used while in motion or during halts, in the frequency band 26.957-27.283 MHz, with a maximum Effective Radiated Power (ERP) of 5 Watts has been exempted from licensing requirements.

IND09 The frequency spots 36.5, 36.7, 37.1, 37.9, 160.9 & 161.8 MHz are earmarked for Radio microphones.

IND10 The requirement of Fixed/Mobile services in the band 54-68 MHz may be considered on case-by-case basis.

IND11 The requirement of broadcast services will be considered in the frequency band 87-91.5 MHz and 95-100 MHz on case-by-case basis.

IND12 The frequency band 91.5-95 MHz is earmarked for FM broadcasting.

IND13 Frequency spots in the frequency bands 88-100 MHz and 103.8-108 MHz for private FM broadcast have been specifically identified.

IND14 The frequency spots 143.950, 150.175 & 150.9 MHz are earmarked for Car

rallies/Sports activities.

IND15 The requirement of wide area radio paging systems will be considered in the frequency band 146.45-147.95, 151.5-153, 164.5-166.5 and 171-173 MHz. The frequency spots 146.5625, 146.6125, 146.6375, 151.6125, 151.6625, 151.6875, 165.3625 (Delhi only), 165.4625, 165.6625, 166.1125 166.1625 (except Delhi), 166.2375 & 166.2875 (Mumbai only), 166.3125, 166.3625, 166.3875, 166.4375, 172.8635, 172.8875 and 172.9375 MHz are earmarked for wide area radio paging only. The use of frequencies in the frequency band 151.5-153 MHz including the frequencies earmarked above in this band have appropriate geographical restrictions of operation around GMRT, Pune.

IND16 Following frequencies are earmarked for construction and allied industries including remote control of EOT:

148.5, 148.575, 166.875, 167.725 MHz with a channel bandwidth of 10 KHz. The maximum RF transmitter power for EOT cranes is 1 mW.

IND 16A Use of low power equipments for the remote control of cranes using frequencies 335.7125, 335.7375, 335.7625, 335.7875, 335.8125 and 335.8375 MHz, with a channel bandwidth of 10 KHz and maximum transmit power of 1 mW has been exempted from licensing requirement.

IND17 The requirement of onsite radio paging systems and talkback facility will be considered in the frequency band 150.05-151.5 MHz. The frequency spots 150.3, 150.9 and 151.07 MHz are earmarked for onsite paging and 151.15, 151.55 and 150.6 MHz for talkback facility for such systems.

IND18 The frequency spot 150.525, 151.250 and 166.950 MHz are earmarked for purposes such as O.B. Vans & film shooting.

IND19 Requirement of fixed and mobile services including those of wireless telemetry seismic systems will be considered in the frequency band 174-230 MHz on a case-by-case basis. Specific requirement of wind profiler radars in the frequency band 200-220 MHz may also be coordinated on a case-by-case

basis

IND20 Digital Audio Broadcasting (DAB) may be considered in the frequency band 174-230 MHz initially in the four Metro cities and further introduction of DAB could be considered on a case-by-case basis taking into account interference potentiality aspects.

IND21 Protection requirements of radio astronomy service in the frequency band 230-235 MHz within the appropriate coordination zone around GMRT, Pune may be borne in mind while considering spot frequencies for other services.

IND22 The requirement for wide area Radio Paging systems, two way radio systems including voice paging systems may be considered in the frequency band 276-280 MHz with talk back in the frequency band 917-921 MHz up to a maximum of 1 MHz in each band.

IND24 The requirement of short-range radio may be considered in the frequency band 350-351 MHz. The frequency spots 350.1625, 350.1750, 350.1875, 350.2000, 350.2125, 350.2250, 350.2375, 350.2500, 350.2625, 350.2750, 350.2875, 350.2900, 350.3025, 350.3150, 350.3275, 350.3400, 350.3525, 350.3650, 350.3775, and 350.3895 MHz are earmarked for this purpose.

IND25 Requirements of public mobile radio trunked systems (PMRTS) and Captive mobile radio trunked systems will be considered in the frequency band 338-340 MHz paired with 348-350 MHz and its additional requirements may be considered in the frequency bands 336-338 MHz paired with 346-348 MHz on case-by-case basis.

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IND26A The requirement of digital radio trunked service for captive networks will also be considered in the frequency band 351-356 MHz paired with 361-366 MHz and 356-358 MHz paired with 366-368 MHz on case by case basis.

IND27 Requirements for digital radio trunked systems may be considered in the frequency bands 380-389.9 MHz paired with 390-399.9 MHz as also in 410-430 MHz on a case- by- case basis.

IND28 Requirement of rural communications may be considered for coordination in the frequency band36<u>8</u>-380 MHz on case-by-case basis.

IND29 Requirements of digital seismic telemetry upto 1.5 MHz bandwidth may be met in the frequency band 406.1-450 MHz on case-by-case basis.

IND 29A The frequency spots 441.6 and 466.8 MHz may be considered for Anti Collision Device (ACD) applications on case by case basis.

IND30 The requirement of IMT and Broadband Wireless Access (BWA) may be considered for coordination on case by case basis in the frequency band 450-470 MHz, especially in rural areas.

IND32 The frequency spots 461.775, 461.825, 461.875, 461.925, 461.950 MHz are earmarked for Radio Paging Systems for on-site uses only.

IND33 Requirements of fixed and mobile services will be considered in the frequency band 470-520 MHz and 520-585 MHz on case-by-case basis.

IND33 A In the context of frequency band 585-806MHz, bearing in mind that broadcasting services include mobile TV, requirements of IMT and/or Broadband Wireless Access (BWA) in the frequency band 698-806 MHz may be considered for coordination on case by case basis, as appropriate.

IND34 Requirements of broadcasting and mobile satellite services except aeronautical mobile satellite(R) service in the frequency band 806-890 MHz may be considered for co-ordination on case by case basis.

IND35 Frequency band 806-811 MHz paired with 851-856 MHz has been earmarked for mobile trunked radio system to be used predominantly for captive networks. The requirements for public mobile radio trunked systems (PMRTS), which cannot be met in other bands, may also be considered in this band.

IND36 Frequency bands 811-814 MHz paired with 856-859 MHz has been earmarked for spectrum efficient digital public mobile radio trunked systems (PMRTS) and captive mobile radio trunked systems.

IND37 Frequency band 814-819 MHz paired with 859-864 MHz has been earmarked for mobile radio trunked systems to be used predominantly for public mobile radio trunked systems (PMRTS).

IND38 Requirement of public mobile radio trunked systems (PMRTS) and captive mobile radio trunked systems may also be considered, as appropriate, in the frequency bands 819-824 MHz paired with 864-869 MHz.

IND 39 Use of low power equipments in the frequency band 865-867 MHz with a maximum transmitter power of 1 Watt(4 Watts Effective Radiated Power) with 200 KHz carrier band width has been exempted from licensing requirement.

IND40 Frequency spots 849.0125/933.0125, 849.0250/933.0250, 849.0375/933.0375, 849.0500/933.0500, 849.0625/933.0625, 849.0750/933.0750, 849.0875/933.0875, 849.1000/933.1000, 849.1125/933.1125, 849.1250/933.1250 MHz have been earmarked for supervisory control and data acquisition system (SCADA) except in a few specific locations.

IND41 Frequency band 824-844 MHz paired with 869-889 MHz has been earmarked for wireless access systems for telecommunication services.

IND43 Frequency band 890-902.5MHz paired with 935-947.5MHz has been earmarked for Wireless Access Systems for telecommunication services.

IND44 Additional requirements for Wireless Access Systems in the frequency band 902.5-915 MHz paired with 947.5-960 MHz may be coordinated on case by case basis.

IND45 Certain frequency spots beyond 6.2 +6.2 MHz in the frequency bands 902.5-915 MHz and 947.5-960 MHz may be considered for train control& mobile train radio systems for specific locations on a case-by-case basis.

IND46 In relation to specific problem of harmful interference from wireless access systems (fixed/mobile) for telecommunication services into cellular based networks, appropriate measures of incorporating filters in the wireless access systems (fixed/mobile) for telecommunication services shall be taken. Appropriate measures of incorporating filters in cellular based networks for blocking signals leaking through the extended cellular frequency bands shall also be taken.

IND47 Certain frequency spots in the frequency band 926 – 926.5 MHz may be considered for very low power cordless telephone systems. The use of this band for such purpose is on the basis of non-interference, non-protection and non-exclusiveness.

IND48 Requirements of wireless access systems for telecommunication services in the frequency band 1700-2000 MHz (1710-1785 MHz paired with 1805-1880 MHz) may be coordinated on a case by case basis.

IND49 Requirements of micro cellular wireless access systems (fixed/mobile) for telecommunication services based on TDD access techniques, especially indigenously developed technologies, capable of coexistence with multiple operators will be considered in the frequency band 1880-1900 MHz on a case by case basis.

IND50 Additional requirements of micro cellular systems based on TDD access techniques, especially indigenously developed technologies, capable of coexistence with multiple operators in the frequency band 1900-1910 MHz may also be progressively considered on a case- by- case basis in exceptional circumstances in specific areas taking due account of existing usages.

IND51 Requirements of IMT applications in the frequency bands 1920-1980 MHz paired with 2110-2170 MHz (FDD mode) and 2010-2025 MHz (TDD mode) may be coordinated with existing users.

IND 51A Requirement of Deep Space Research operations in the frequency bands 2110-2120 MHz (uplink) and 2290-2300 MHz(downlink) may be considered at few locations.

IND52 The requirement of IMT and BWA applications may be considered for coordination on case by case basis in the frequency band 2300-2400 MHz.

IND53 Use of low power equipments in the frequency band 2.4-2.4835 GHz using a maximum transmitter output power of 1 Watt (4 Watts Effective Radiated Power) with spectrum spread of 10 MHz or higher has been exempted from licensing requirement.

IND54 INSAT system is presently using the frequency band 2535-2655 MHz for radio networking, cyclone warning dissemination system, meteorological data dissemination, satellite time frequency dissemination and multimedia applications. Requirements IMT and broadband wireless access applications may be considered for coordination in the frequency band 2520-2670 MHz on a case-by-case basis.

IND55 Requirements for Microwave Multipoint Distribution System (MMDS) including broadband applications in the frequency band 2.7-2.9 GHz may be considered on case by case basis, while ensuring protection to Aeronautical Radio navigation service and Radio location service. International recognition for such purpose is not affordable.

IND 55A Use of low power equipments for Wireless Access Systems including Radio Local Area Networks, in the frequency band 5.150-5.350 GHz and 5.725 – 5875 GHz using a maximum mean Effective Isotropic Radiated Power of 200 mW and a maximum mean Effective Isotropic Radiated Power density of 10 mW/MHz in any 1 MHz bandwidth, for the indoor applications has been exempted from licensing requirement.

IND 55B Requirement of indoor and outdoor Wireless Access Systems including RLAN may be considered, on a case to case basis, in the frequency bands 5470-5725 MHz with a maximum mean eirp of 1W and a maximum mean eirp density of 50 mw/ MHz in any 1MHz band.

IND56 Requirements of Broadband Wireless Access applications may be considered in the frequency band 3.3 – 3.4 GHz on a case-by-case basis.

IND56 A The requirement of IMT and Broadband Wireless Access applications in the frequency band 3400-3600 MHz may be considered for coordination on case by case basis.

IND58 Requirement of low power, spread spectrum based systems not covered under IND- 55A, may be considered in the frequency band 5725-5875 MHz. Such use will be on the basis of non-interference, non-protection and non-exclusiveness.

IND 58 A Use of low power equipments in the frequency band 5.825 to 5.875 GHz using a maximum transmitter output power of 1 Watt (4 Watts Effective Radiated Power) with spectrum spread of 10 MHz or higher has been exempted from licensing requirements**.**

IND59 The requirement for LMDS may be considered in the frequency band 10.15-10.65 GHz on case-by-case basis.

IND60 Frequency bands 10.95-11.2 GHz and 11.45-11.7 GHz may be predominantly used for fixed satellite service (down links).

IND61 It may be borne in mind that the frequency band 18.6-18.8 GHz is being used for Earth Exploration Satellite (EES) in IRS Satellite.

IND62 Requirements of LMDS and MMDS may be considered in the frequency bands 24.5 -26.5 GHz and 27.5-29.5 GHz on a case-by-case basis.

IND63 Requirements of high capacity dense network may be considered in the frequency bands31.8-33.4, 37-40 GHz, 40.5-43.5, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz.

IND 64 Requirement of public protection and disaster relief (PPDR) communications may be considered in the frequency bands 380-400 MHz, 406.1-430 MHz, 440-470 MHz, 746-806 MHz, 806-824/851-869 MHz, 4940-4990 MHz and 5850-5925 MHz on a case by case basis depending on specific need and equipments availability, as far as possible.