



Recommendations on Telecom Regulatory Authority of India Consultation Paper on Review of Terms and Conditions of PMRTS and CMRTS Licenses

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Chapter 1

Introduction ITU-APT Foundation of India (IAFI)

We, the ITU-APT Foundation of India (IAFI), are a registered non-profit and non-political industry association registered under the Cooperative Societies Act of India. IAFI has been recognized by the International Telecommunication Union (ITU), the UN Organization for ICT issues, as an international/ regional Telecommunications organization and has been granted the sector Membership of the ITU Radio Communications Bureau (ITU-R), ITU Development Bureau (ITU-D) and ITU Telecommunication Standardization Bureau (ITU-T). IAFI is also an affiliate member of the APT. IAFI has been working for the last 20 years to encourage the involvement of professionals, corporate, public/private sector industries, R&D organizations, academic institutions, and other agencies in the activities of the ITU and APT. For more details regarding IAFI, please visit <https://www.itu-apt.org/>

Chapter 2

IAFI Comments on TRAI Consultation Paper on Review of Terms and Conditions of PMRTS and CMRTS Licenses

Executive Summary of views of the IAFI

While dealing with the 2G cellular spectrum case, the Supreme Court of India in 2012 had ruled that auctions are the preferred means for allocating natural resources such as spectrum. But based on a subsequent petition by the central government, the Court allowed for policy guidelines for administrative allocation of natural resources, to be issued by the government on case-to-case basis in public's interest. However, since 2012, the Department of Telecommunications has been working on a new policy for administrative allocation of radio spectrum for PMRTS and CMRTS licensees. These licenses are used by vital sectors of the economy such as government and Industries. The key users of PMRTS and CMRTS are:

- 1) Public safety-first responders such as police, paramilitary, defense, fire, and disaster management.
- 2) Other government services including forestry and natural resource departments, municipal corporations, and public utilities.
- 3) Critical infrastructure services projects such as railways, metros, airports, seaports, refineries, mines, highways, and industrial complexes.
- 4) Utilities, private enterprises, courier agencies, private security providers, event management agencies,

It has been estimated that by 2030, the economic value resulting from use of wireless technologies such as PMRTS, CMRTS and CNPN, running industries and enterprises on improved connectivity could generate from \$400 billion to \$650 billions of GDP impact.

It is also pertinent to mention here that the enterprise connectivity would require utmost customer centric approach where the network's reliability, speed, latency, security, efficiency, density, etc. are defined by the enterprises themselves and can vary for each enterprise depending on their operational requirement. Several regulators, particularly in developed countries around the world have realized the importance of captive radio trunking communications by their industries and enterprises and have been proactively working towards making the necessary spectrum resources available directly for their captive needs, keeping in mind importance of these users in nation building and economic growth.

Since 2012, the WPC has been allocating spectrum in a series of 3/6 month interim windows. Typically, after each 3-month window, the authority lapses for several months before a new interim authority is granted and the window is opened. It is critically important that radio spectrum for all captive users that share the primary mission to protect lives and property and help the country to prosper is made available under a permanent administrative allocation process. Spectrum authorizations should be based on relatively simple application policies that require only nominal administrative fees from the agencies and organization that require use of the spectrum for "private",

non-commercial communications networks. Consistent with the administrative policies of countries around the world, the authorization process for private networks should be distinguished from the competitive bidding “spectrum auctions” that are commonly used to authorized commercial wireless networks that provide telecommunications services to the public on commercial basis for profit .

Captive users of mobile wireless communications, such as state and central police organizations, paramilitary forces, Metros Rail projects, airports, refineries, factories etc. are facing many problems and delays in setting up their captive communications networks due to complex and long drawn process for getting necessary CMRTS License, spectrum license and import licenses. These projects are lifeline of the country’s economic development, public safety, Industrial development and logistics and are critical to support Atamnirbhar Bharat.

The process of obtaining the necessary DOT/WPC approvals for such users typically takes between six months to two years as compared to less than a month in most developed countries. The main reason of delay in CMRTS license is because of the sequential nature of the process, where three separate licenses have to be taken by CMRTS licensee from DOT, one after the other rather than as single approval or as a parallel process, followed in most other countries. Tables below summarize various steps in getting the CMRTS and some recent examples of the typical time taken by the DOT in these cases. Last table displays the steps involved and time taken for issue of Wireless licenses by the WPC wing.

Typical time taken for processing of CMRTS applications.

Activity	Typical Time Taken
<i>State Police Application to DoT</i>	<i>2-12 Weeks</i>
<i>DOT collects “No Dues” from various sections</i>	<i>8-16 Weeks</i>
<i>DOT takes Frequency approval from WPC</i>	<i>8-16 Weeks</i>
<i>DOT takes TEC Approval</i>	<i>8-16 Weeks</i>
<i>MOC Approval</i>	<i>6-12 Weeks</i>
<i>CMRTS License signing</i>	<i>3-4 weeks</i>
Total	Up to 2 years

Actual time taken in the past for processing of CMRTS applications.

S. No.	Name of Captive User	Date of CMRTS Application	Date of Signing of CMRTS License	Time Taken (Years)
1	Captive user A	1-Oct-16	19-Jan-18	1.3 years
2	Captive user B	4-Apr-16	6-Nov-18	2.6 years
3	Captive user C	25-Apr-16	6-Oct-17	1.5 years
4	Captive user D	26-Dec-18	27 Dec 19	1 year+
5	Captive user E	8-Feb-16	2-Sep-16	0.6 years
6	Captive user F	31-May-14	23-Nov-15	1.5 years

Typical time taken for processing of spectrum Licenses.

Activity	Typical Time Taken
<i>DoT issues a Letter of Intent</i>	<i>4-8 Weeks</i>
<i>State Police makes spectrum application</i>	<i>1-2 Weeks</i>

<i>WPC process and issue Demand letter</i>	<i>3-8 Weeks</i>
<i>Spectrum fees Payment to WPC</i>	<i>2-4 Weeks</i>
<i>WPC issues decision to grant license</i>	<i>1-4 Weeks</i>
<i>Application for Import License to WPC</i>	<i>1 Week</i>
<i>WPC issues Import license</i>	<i>1-3 Weeks</i>
<i>Total</i>	<i>3 months to 7 months</i>

Currently captive users like police, paramilitary, metros, airports, refineries, factories etc. have to take a CMRTS license before they can apply for a WPC spectrum license. These captive users only need wireless spectrum for their “captive” use only and no telecom service is being provided by them to the public or to anyone else. Thus, in principle, there should be no need for a separate CMRTS license under section 4 of the Indian telegraph act as these users do not provide any service to any customers and the wireless network is 100% used for internal communications and coordination purposes such as security, safety and logistics. In June 2018, the TRAI had Recommended¹ that DoT should study the feasibility of doing away with CMRTS license for PPDR agencies as may be seen from section 2.66 of these recommendations

We therefore recommend that the CMRTS (Captive Mobile Radio Trunking) License may merged with the WPC spectrum license and that there should be a simplified process where the users directly apply for spectrum to WPC, instead of first going through an elaborate CMRTS licensing process with DoT and then applying for spectrum to WPC. This will cut down the process time to less than 3 months.

In summary, most users of such spectrum are not exploiting spectrum for commercial purposes but are using it for safety and security or for a public service. There is an urgent need to revisit this policy and address these concerns highlighted above.

Government has made significant progress introducing series of reforms including, simplifying regulations, reducing the time and cost of start projects and creating a more transparent environment. It includes introducing a single-window clearance system, streamlining the process of obtaining licenses and reducing the number of inspections and compliances.

So, there is an urgent need to merge the CMRTS license with WPC Spectrum license, to boost the economic growth and creation of jobs.

¹ TRAI Recommendations on Next Generation Public Protection and Disaster Relief (PPDR) communication networks” dated 4th June, 2018 (Recommendation 4.6)

Chapter3

IAFI response to TRAI Questions on Review of Terms and Conditions of PMRTS and CMRTS Licenses

Q-1. Whether there is a need to review the terms and conditions of PMRTS License and PMRTS Authorization under Unified License? Kindly provide a detailed response with justifications.

IAFI response:

Yes. There is an urgent need to review the terms and conditions of the PMRTS License and PMRTS Authorization under UL. The PMRTS License was introduced in 2007 and the PMRTS Authorization under UL was started since 2013 respectively. Since then, the telecom scenario has been changed significantly, due to commencement of 4G and 5G mobile networks. So, now it is very necessary to review the terms and conditions of the PMRTS and PMRTS Authorization under UL.

Many current terms and conditions of the PMRTS Authorization under UL are complex and cumbersome, making it difficult to acquire and operate these licenses. Government of India has taken a number of initiatives to improve the ease of doing business, like “Simplifying the regulatory environment” streamlining the approval process, licenses and making it easier to comply with regulations, to encourage more FDI, more employment and boost economic growth. Existing Unified License is a quite bulky and complex document, as covers a wide range of topics and makes it difficult to understand, especially for those who are less familiar with the telecom industry. It is suggested that existing Unified License document should be modified soon after the new Indian Telecom Bill, 2022 passed by the parliament.

Q-2. In case it is decided to review the terms and conditions of PMRTS License and PMRTS Authorization under Unified License, in what manner should the following conditions be amended?

- (a) Scope of the license**
- (b) Roll out obligation**
- (c) Technical conditions**
- (d) Network interconnection**
- (e) Security conditions**
- (f) Any other (please specify).**

Kindly provide a detailed response with justifications.

IAFI response:

Some of the ways in which the terms and conditions of PMRTS License and PMRTS Authorization under Unified License could be amended:

- (a) Scope of the license: The scope of the license could be expanded to include new services, such as internet connectivity using static IP addresses. Similarly, PMRTS service providers may be allowed to provide IoT services. This would make the license more attractive to

businesses that need to use PMRTS services for mission-critical applications.

(b) Roll out obligation: The roll out obligation could be relaxed to give PMRTS providers more flexibility in the timing and manner of their rollout. This would help to reduce the cost of compliance and make it easier for new PMRTS providers to enter the market.

(c) Technical conditions: The technical conditions could be updated to reflect the latest technological developments, such as the use of 4G and 5G networks. This would ensure that PMRTS providers have the flexibility to use the latest technologies to meet the needs of their customers.

(d) Network interconnection: The network interconnection requirements could be made more flexible to allow PMRTS providers to interconnect with other networks, such as the public switched telephone network (PSTN). This would help to improve the interoperability of PMRTS services and make it easier for businesses to use PMRTS services.

(e) Security conditions: The security conditions could be strengthened to protect the privacy and security of PMRTS users. This would be important to ensure that PMRTS services are used for legitimate purposes and that they do not pose a security risk.

(f) Any Other:

(i) Roaming facility should be allowed to PMRTS operators.

(ii) Other conditions that could be considered for amendment include the pricing of PMRTS services, the ownership of spectrum, and the regulatory regime for PMRTS providers.

Q-3. Whether PMRTS providers should be permitted Internet connectivity with static IP addresses? Kindly provide a detailed response with justification.

IAFI reply:

PMRTS providers should be permitted Internet connectivity with static IP addresses depending on the specific needs of the PMRTS provider.

Static IP addresses are assigned to a device permanently and do not change. It means that the device will always have the same IP address, whether it is connected to the internet or not.

Dynamic IP addresses are assigned to a device temporarily and may change whenever the device connects to the internet. This means that the device may have a different IP address each time it connects to the internet. Dynamic IP addresses are often used for devices that do not need to be accessible from the internet, such as personal computers and smartphones.

Some PMRTS providers might be willing to use static IP addresses, as static IP addresses can make it easier to set up and manage PMRTS systems. In addition to this, static IP addresses can improve the reliability of PMRTS systems. Similarly, static IP addresses can improve the security of PMRTS systems. If a PMRTS system uses a static IP address, it can be more easily configured to use security features such as firewalls and intrusion detection systems.

So, IAFI is of the view that PMRTS providers should be allowed to use static or dynamic IP, as per the requirement.

Q-4. Whether there is a need to review the extant provisions relating to service area for PMRTS Authorization under Unified License? If yes, whether it would be appropriate to grant PMRTS Authorization for three different categories with service area as

(a) National Area;

- (b) Telecom circle/ Metro Area; and
(c) Secondary Switching Area (SSA)?**

Kindly provide a detailed response with justification.

IAFI reply:

Yes, IAFI is of the view that there is a need to review the extant provisions relating to service area for PMRTS Authorization under Unified License. It will be appropriate to grant PMRTS Authorization under UL for three different categories with service area as follows:

National Area: As it will allow PMRTS providers to offer services to customers anywhere in India.

Telecom circle/Metro Area: As it will allow PMRTS providers to offer services to customers within a particular telecom circle or metro area.

Secondary Switching Area (SSA): As it will allow PMRTS providers to offer services to customers within a particular SSA.

It will give more flexibility to PMRTS providers in offering better services as per the needs of their customers, in a more flexible and efficient and even more competitive manner.

Q-5. Whether there is a need to review the extant provisions relating to the authorized area for use of a particular frequency spectrum to PMRTS providers? If yes, in what manner should these provisions be amended? Kindly provide a detailed response with justification.

IAFI reply:

Yes, IAFI is of the view that there is an immediate need to review the extant provisions relating to the authorized area for use of a particular frequency spectrum to PMRTS providers. Presently, DoT assigned frequency spectrum to PMRTS providers at city level through Wireless Operating License (WOL), specifying the location, including address along-with Latitude and Longitude of a Fixed Station. This restriction limits the ability of PMRTS providers.

IAFI is of the view that it would be more appropriate to allow PMRTS providers to use spectrum in any area of India, regardless of the city, it licensed for. It will provide more flexibility to PMRTS providers in offering services, as per the needs of their customer. PMRTS providers should be allowed to use the frequency spectrum assigned to them for the use in a city, to anywhere in the licensed area, with prior intimation to the Government and should pay location-wise Royalty Charges and License fee for each location for frequency reuse.

Q-6. Whether there is a need to review the mechanism of shifting the fixed station from one location to another location within the authorized area for use of a particular frequency spectrum? If yes, what should be the terms and conditions for such permission? Kindly provide a detailed response with justification.

IAFI reply:

Yes. IAFI is of the view that there is an immediate need to review the mechanism of shifting the fixed station from one location to another location within the authorized area for use of a particular frequency spectrum, due to the following reasons.

- a. Due to expansion of city area and strict pollution measures, many industries are forced to move away from a city / existing service area. The environment can change over time, and a fixed station that was once placed at a good location may no longer be the best option.
- b. Shifting of base stations became essential due to expiry of lease period of site at an old location or availability of a better site location nearby.
- c. The station is located in a densely populated area and is causing interference with other radio services.
- d. Shifting of fixed stations is necessary to accommodate new/latest technologies.
- e. Shifting the fixed station to a new location is necessary for providing better service.
- f. Shifting of fixed stations is necessary to improve quality of coverage to subscribers in the existing Service Area.

Shifting fixed stations will help in improving the efficiency of spectrum use by allowing operators to move their stations to areas where they are needed it most. It should be kept in mind that frequency spectrum is a limited resource and it is the prime responsibility of all the users to use it efficiently.

Regarding terms and conditions for shifting the fixed station from one location to another location, PMRTS providers should follow the following guidelines.

- a. The PMRTS providers must provide a justification for the proposed shift.
- b. All cost of shifting will be borne by the PMRTS provider.
- c. The PMRTS operator must ensure that the shift does not interfere with the operations of other stations.
- d. The PMRTS operator must intimate DoT/WPC for the plan regarding shifting at least 30 days in advance and should obtain the prior necessary approvals from DoT/WPC.

It will be appropriate if TRAI constitute a committee of experts to finalize the terms and conditions for shifting fixed stations for PMRTS services. The committee should consider all of the factors outlined above and make recommendations.

Q-7. Whether there is a need to permit PMRTS providers to shift a few frequency carriers out of a pool of frequency carriers, assigned to an existing Fixed Station, to a new Fixed Station located within the authorized area for use of the pool of frequency carriers? If yes, in what manner the challenges arising out of such partial shifting of frequency carriers may be mitigated? Kindly provide a detailed response with justification.

IAFI reply:

Yes, IAFI is of the view that PMRTS providers should be permitted to shift few (part) frequency carriers out of a block of frequency carriers (out of 5 frequency pairs), assigned to an existing Fixed Station, to a new Fixed Station located within the authorized area for use of the pool of frequency carriers, to improve the efficiency, reliability, and flexibility of PMRTS services. It will also improve the efficiency of spectrum usage, considering spectrum as

scarce natural resource.

Following actions can be taken to mitigate the challenges arising out of such partial shifting of frequency carriers.

- a. The PMRTS provider should coordinate with the other PMRTS providers in the area to ensure that the shifting of frequency carriers does not cause interference with their services.
- b. The PMRTS provider should ensure that the new Fixed Station is located in a suitable location that will not cause interference with other radio services.
- c. The PMRTS provider should intimate the plan to DoT/WPC in advance.

It will be appropriate to put some mechanism in place, to ensure that the PMRTS providers should comply the terms and conditions for shifting frequency carriers. Procedures should include monitoring and enforcement mechanisms, to ensure that the PMRTS providers do not cause interference with other radio services.

Q-8. Whether there is a need to review the requirement of obtaining Wireless Operating License (WOL) by PMRTS providers? Kindly provide a detailed response with justification.

IAFI reply:

Yes, IAFI is of the view that the requirement of obtaining Wireless Operating License (WOL) by PMRTS providers should be deleted, in the same way, as done by DoT in case of Access Service authorization in November 2016. It will help PMRTS providers due to the following.

- a. Process for obtaining WOL is complex and time-consuming, and it add financial burden to PMRTS providers. The WOL requirement is a barrier to entry for new PMRTS providers.
- b. The quality of PMRTS services does not necessarily depend on the WOL, as there are many other factors which affect the quality of PMRTS services.
- c. Requirement of WOL lead to less competition and higher prices for consumers.

It appears that there is lack of uniformity or consistency in DoT decision, deleting WOL requirement for towers installed by TSPs for 4G/5G and not deleting for PMRTS providers.

Q-9. Whether there is a need to review the provisions related to sale, lease and rent of the radio terminals of PMRTS? Kindly provide a detailed response with justification.

IAFI reply:

Yes, IAFI is of the view that it is necessary to review the provisions related to sale, lease and rent of the radio terminals used for PMRTS. The current provisions are restrictive and do not allow for flexibility in the market, so higher price to be paid by the consumer.

As per the present DoT policy, PMRTS providers may acquire radio terminal through direct import or can buy from DPL holder and can provide these radio terminals to the subscribers/users on mutually agreed terms. PMRTS frequency assignment holders can import only permitted number of terminals as per the technical specifications mentioned in

the WOL, against unserviceable terminals, after submitting destruction certificate or FIR or any appropriate proof. So, the following are suggested.

- a. DPL holders should be allowed to offer radio terminals on rent or lease to the subscribers availing PMRTS services from a licensed PMRTS providers.
- b. As there are no manufacturers of radio terminals in India, PMRTS operators should be allowed to freely import radio terminals under Open General License (OGL) without requiring any permission from DoT or WPC.
- c. Requirement of WOL for the sale, lease or rent of radio terminals should be removed, so that new PMRTS may enter in the market.
- d. It is proposed to introduce online registration system for the sale, lease or rent of radio terminals, to streamline and to regulate the market.

Q-10. In case your response to the Q-9 is in the affirmative, what kind of changes will be required in PMRTS licenses and Dealer Possession License (DPL) and guidelines? Kindly provide a detailed response with justification.

IAFI reply:

As IAFI reply to the above question is affirmative, following changes are suggested in the PMRTS License and DPL license.

1. The DPL guidelines needs to be revised to remove the requirement for a DPL for the sale, lease or rent of radio terminals.
2. The provisions related to the sale, lease or rent of radio terminals needs to be amended to allow entities other than PMRTS providers to engage in these activities.
3. Requirement of WOL for the sale, lease or rent of radio terminals should be removed, so that new PMRTS may enter in the market.
4. It is suggested to introduce online registration system for the sale, lease or rent of radio terminals, to streamline and regulate the market. Saral Sanchar Portal of DoT can be suitably amended to accommodate the same.
5. Some mechanism for resolving disputes between PMRTS providers, device manufacturers, retailers and users needs to be developed, to ensure the rights of all stakeholders are protected.
6. New technologies, such as digital PMRTS, are being developed offer improved performance, and efficiency including better spectrum usage. These new technologies may require changes to the licenses and guidelines to ensure that they are compatible with the existing PMRTS infrastructure.
7. More spectrum may be allocated for PMRTS services to meet the growing demand.
8. PMRTS providers should be allowed freely for import handsets for trunking services and these should be removed from the restricted list under the import-export policy and delinking of the same from spectrum allocation, to promote growth of the PMRTS services.
9. PMRTS providers facing problem as the subscriber purchases the handset does not return even they stop using PMRTS, as reflecting as Capital Asset in the account maintained by the subscriber. In addition, the life of the radio terminal is five years and became beyond economic repair. So, to develop user-friendly mechanism, there is immediate need to modify the conditions of the WOL.

Q-11. Whether there is a need to review the provisions related to import of the radio

terminals of PMRTS? Kindly provide a detailed response with justification.

IAFI reply:

Yes, IAFI is of the view that there is a need to review the provisions related to import of the radio terminals of PMRTS. The current provisions are restrictive and make it difficult for PMRTS operators to import radio terminals.

- a. If PMRTS provider is willing to import the PMRTS equipment, radio terminal, it has to take license from the Department of Telecommunications (DoT) before they can import the radio terminals. The process of obtaining a license from the DoT is time-consuming and expensive.
- b. Saral Sanchar portal should be modified to accommodate PMRTS for importing radio terminals.
- c. The government should provide financial incentives to PMRTS operators to invest in new technology.
- d. The need for a license could be waived for radio terminals imported from countries having a reciprocal arrangement with India.

Q-12. Whether there is a need to review the provisions related to replacement of unserviceable network elements of PMRTS? Kindly provide a detailed response with justification.

IAFI reply:

Yes, IAFI is of the view that there is a need to review the provisions related to replacement of unserviceable network elements of PMRTS, as current provisions are not clear and do not provide enough flexibility to the PMRTS providers to replace unserviceable network elements in a timely manner.

As per the current provisions, the PMRTS providers must replace unserviceable network elements within 30 days of the identification of the unserviceable element. However, this is not always possible, as it may take longer time to procure the replacement element. Additionally, the 30-day deadline does not take into account the time required to test and commission the replacement element. This issue needs to be addressed and the provisions related to replacement of unserviceable network elements of PMRTS should be reviewed. The revised provisions should provide more flexibility to the PMRTS providers to replace unserviceable network elements in a timely manner. Revised provisions should allow the PMRTS providers to replace unserviceable network elements within a reasonable period of time, taking into account the procurement time, time required for testing, commissioning and replacement.

Q-13. Whether there is need to review the recommendation No 4.5 (mentioned below) of the TRAI's Recommendations on 'Method of allocation of spectrum for Public Mobile Radio Trunking Service (PMRTS) including auction, as a transparent mechanism' dated 20.07.2018, which are under consideration of DoT?

"Recommendation No 4.5 dated 20-07-2018- TRAI recommended that-

- (a) Carrier size for assignment to PMRTS licensee (both for analog or digital) shall be 6.25 KHz and multiples thereof.**
- (b) Carriers (frequency pairs) of 25 KHz already assigned to the service providers should be allowed to be retained by the service providers.**
- (c) Additional assignment of carriers for the existing analogue system shall continue @ carrier size of 25 KHz (counted as 4 carriers of 6.25 KHz each).**
- (d) Assignment in new cities/ service areas shall be made for digital systems only.**
- (e) Initially for each city, twelve carriers (frequency pairs) of carrier size 6.25 KHz in**

metro licensed service area and eight carriers (frequency pairs) in non-metro license service area shall be assigned for PMRTS (Digital system) depending on the availability”.

Kindly provide a detailed response with justification.

IAFI reply:

IAFI is of the view that there is no need to review the recommendation No 4.5 of the TRAI's Recommendations dated 02-07-2018 regarding quantum of spectrum for Public Mobile Radio Trunking Service (PMRTS). Regarding method of allocating spectrum for PMRTS providers, spectrum should be allocated **administratively** only and not by auction.

IAFI support administrative allocation of spectrum for PMRTS, due to the following reasons.

- a. The market for Trunked Radio is relatively small with no direct competition from other services.
- b. Unlike cellular services, MRTS is not intended for general public, but is used to provide group communications meant for person-to-person and person-to-group in many emergency and critical sectors such as for Security, Ambulance, Hazmat, Forest Management, Manufacturing, Logistics, Oil & Gas, Mining, Construction, Courier, Utilities like Municipal Services, Electricity, Water and Maintenance and Operation of Roads, Airports and Seaports etc.
- c. The total PMRTS subscriber base is less than 65,000 users as compared to over a billion cellular wireless subscribers.
- d. It is illogical to compare PMRTS with cellular services.

It may also be noted that many other countries also treat these services under administrative allocation for spectrum.

Q-14. Whether there is a need to mandate PMRTS providers to migrate to spectrally efficient digital technologies in a time-bound manner? If yes, what should be the time frame for mandatory migration to spectrally efficient digital technologies? Kindly provide a detailed response with justification.

IAFI reply:

IAFI is of the view that PMRTS providers should be provided with the option to migrate to spectrally efficient digital technologies in a time-bound manner. Spectrally efficient digital technologies use the available frequency spectrum more efficiently than analog technologies. This means that they can support more users and services on the same amount of spectrum.

The International Telecommunication Union (ITU) has recommended that all PMRTS providers should migrate to digital technologies by 2030. For those who choose to migrate, 2030 is a reasonable timeframe for migration to implement the transition.

PMRTS providers should be provided with the option of choosing Digital Trunked Radio technologies having backward compatibility with the Analog Trunked Radio systems, to allow graceful migration from Analog to Digital, and to protect current investments, as same RF infrastructure can be used for both Digital and Analog Radio terminals.

Q-15. In case your response to Q-14 is negative, what measures should be taken to nudge and encourage PMRTS providers to migrate to spectrally efficient digital technologies? Kindly provide a detailed response with justification.

IAFI reply:

No comments, as our response to Q-14 is affirmative.

Q-16. Whether it is possible to deliver the PMRTS/ CMRTS, which are mission critical in nature, using 4G/5G Network Slicing or any other technology? If yes, in what manner should the delivery of PMRTS/ CMRTS using 4G/ 5G network slicing be enabled in the license? What should be safeguards to ensure that the quality-of-service for cellular networks is not adversely impacted? Kindly provide a detailed response with justification.

IAFI reply:

PMRTS/CMRTS are mission-critical, as these systems are used to provide two-way voice and data communication for a variety of applications, such as Public Safety, Police, Fire and Ambulance Services and with the public during emergencies. Similarly, PMRTS/CMRTS are used in utilities sector like Power, Gas and Water, in transportation sector like Airlines, Railways, and Shipping and in Mining and Manufacturing sector.

It is possible to deliver PMRTS/CMRTS using 4G/5G network slicing.

Network slicing is a technology that allows 4G/5G operators to create virtual networks within their physical network, a dedicated network for PMRTS/CMRTS. Main advantages are guaranteed performance even during times of congestion, enhanced security and improved scalability.

In order to ensure that the quality-of-service for cellular networks is not adversely impacted, following safeguards should be put in place.

- a. 4G/5G Operators should carefully manage the resources that are allocated to PMRTS/CMRTS services.
- b. 4G/5G Operators should use traffic shaping and QoS (quality of service) techniques to ensure that PMRTS/CMRTS traffic does not interfere with other traffic.
- c. 4G/5G Operators should monitor the performance of PMRTS/CMRTS services.

Q-17. Whether there is a need to review the terms and conditions of PMRTS Authorization under Unified License (VNO)? Kindly provide a detailed response with justification.

IAFI reply:

As per the list of licensees for PMRTS, released by DoT, as on 30-06-2023, out of 43 licensees, only two licensees are of UL-VNO category. Following changes in UL (VNO) are suggested.

1. In Chapter-XIII- clause -1 (Service Area) – Service Area of a UL (VNO) licensee should be same, as the service area of the NSO, to which it is parented.
2. Similarly, in Chapter-XIII- clause – 3 (AGR) – the term sales tax needs to be updated by GST.
3. Appendix-II to the Annexure-A (Revenue and License fee) needs to be updated.

Q-18. In case it is decided to review the terms and conditions of PMRTS authorization

under Unified License (VNO), in what manner should the following existing provisions be amended?

(a) Service area

(b) Scope of the license

(c) Network interconnection

(d) Any other (Please Specify).

Kindly provide a detailed response with justification.

IAFI reply:

DoT vide letter dated 31-05-2016 issued detailed guidelines for the grant of UL (VNO) for many services including of PMRTS. As there were two bank guarantees PBG and FBG mentioned in the letter, so in order to implement telecom reforms, DoT issued revised guidelines on 17-01-2022, to reduce as one bank guarantee for UL (VNO).

Regarding

- (a) Service Area - Service Area of a UL (VNO) licensee should be same, as the service area of the NSO, to which it is parented.
- (b) Scope of the License – UL (VNO) should be allowed to provide IoT services.
- (c) Network Interconnection – no comments.
- (d) Any other - Roaming facility should be allowed to UL (VNO) PMRTS operators

Q-19. Whether there is any other issue relevant for review of terms and conditions of the PMRTS License, PMRTS Authorization under Unified License, and PMRTS authorization under Unified License (VNO)? Kindly provide a detailed response with justifications.

IAFI reply:

As per the list of licensees for PMRTS, released by DoT, as on 30-06-2023, out of 43 licensees, 40 licensees are having Unified License. Following major decisions are taken by DoT needs to be incorporated in the UL.

1. Amendment issued by DoT on 27-10-2021, regarding calculation of AGR needs to be incorporated in the UL.
2. Amendment issued by DoT on 09-11-2021, regarding change in the FDI norms needs to be incorporated in the UL.
3. Amendment issued by DoT on 27-01-2022, regarding time period for storage of Call Data Record (CDR), needs to be incorporated in the UL.
4. Amendment issued by DoT on 13-07-2022, regarding procurement of telecom equipment from trusted source, needs to be incorporated in the UL.

Q-20. Whether there is a need to review the terms and conditions of CMRTS license? Kindly provide a detailed response with justifications.

IAFI reply:

Yes. There is need to review the terms and conditions of the CMRTS licenses.

Currently captive users like police, paramilitary, metros, airports, refineries, factories etc. have to take a CMRTS license before they can apply for a WPC spectrum license. These captive users only need wireless spectrum for their “captive” use only and no telecom service is being provided by them to the

public or to anyone else. Thus, in principle, there should be no need for a separate CMRTS license under section 4 of the Indian telegraph act as these users do not provide any service to any customers and the wireless network is 100% used for internal communications and coordination purposes such as security, safety and logistics. In June 2018, the TRAI had Recommended² that DoT should study the feasibility of doing away with CMRTS license for PPDR agencies as may be seen from section 2.66 of these recommendations

We therefore recommend that the CMRTS (Captive Mobile Radio Trunking) License may merged with the WPC spectrum license and that there should be a simplified process where the users directly apply for spectrum to WPC, instead of first going through an elaborate CMRTS licensing process with DoT and then applying for spectrum to WPC. This will cut down the process time to less than 3 months.

Q-21. What should be the eligibility conditions for obtaining CMRTS license? Further, what should be the application processing fee for CMRTS license? Kindly provide a detailed response with justification.

IAFI reply:

As above, we recommend doing away the need for a CMRTS licenses.

As per the DoT orders dated 01-11-2001, detailed guidelines for PMRTS/CMRTS, following charges regarding Entry Fee and License Fee are mentioned.

1. There shall be no entry fee.
2. The licence fee for commercial PMRTS system shall be 5% of the ‘Adjusted Gross Revenue’ (AGR) and for CMRTS Systems, the licence fee shall be Rs.300/- per annum per terminal with a minimum of Rs.25000/- per annum per licensed area.
3. All PMRTS/CMRTS licensees will pay license fee, except agencies working for public service such as Police, Fire and Government Security etc.

However, eligibility conditions for obtaining CMRTS license, and application processing fee for obtaining CMRTS license were not specifically mentioned in these guidelines.

IAFI suggests the following as the only eligibility conditions for obtaining a single CMRTS wireless license.

1. The applicant must be a company or organization, engaged in a business or activity that requires the use of a CMRTS network.

Q-22. In case it is decided to review the terms and conditions of CMRTS license, in what manner should the following terms and conditions be amended?

- (a) Service area
- (b) Period of validity
- (c) Scope of the license
- (d) Technical conditions
- (e) Channel assignment and loading

² TRAI Recommendations on Next Generation Public Protection and Disaster Relief (PPDR) communication networks” dated 4th June 2018 (Recommendation 4.6)

(f) Operating conditions**(g) Conditions relating to suspension, revocation or termination of license.****(h) Any other (please specify).****Kindly provide a detailed response with justifications.*****IAFI reply:***

IAFI is of the view that terms and conditions of CMRTS license should be well defined. IAFI suggest the following.

- (a) Service Area: CMRTS providers are providing services for Security, Ambulance, Hazmat, Forest Management, Manufacturing, Logistics, Oil & Gas, Mining, Construction, Courier, Utilities like Municipal Services, Electricity, Water and Maintenance and Operation of Roads, Airports and Seaports etc, so the service area should cover the area of the operations.
So, in case, CMRTS is serving in a city, service area should be entire city plus a distance of 10 Km. Similarly, in case of Airport, Seaport, Oil and Gas installation and Mining etc, entire operational area should be the service area. The service area for High Ways shall cover National High Ways/State High Ways /Other District Roads contiguous with the boundary of the State.
- (b) Period of validity: The duration of License agreement shall be for a period of 20 years for both analogue and digital systems and may be extended by 10 years at one time.
- (c) Scope of the license: The licensee is permitted to provide Captive Mobile Radio Trunk Service (CMRTS) and refers to:
 - (i) a two-way land mobile service in which users communicate among themselves through a pair of radio frequencies out of a pool in a designated frequency band, assigned to the system using pair of radio frequencies and
 - (ii) the pair of frequencies is allocated on placement of call request and returned to the pool on completion of call and
 - (iii) the communication usually takes place through repeater station (also called base station). Once user is assigned a channel (a pair of frequencies) by the system, no one else can interfere with the communication.
- (d) Technical conditions:
 - (i) For operating the CMRTS license, separate frequency allotment will be required from WPC Wing, as a right to use of spectrum.
 - (ii) The CMRTS licensee shall specify the details of technology (Digital/Analogue), Quality of Service and other Performance Parameters of the Systems proposed to be deployed for operation of the service.
 - (iii) The system installed for providing service should be designed in such a way so as to provide good radio coverage inside the buildings.
 - (iii) Technical Conditions as defined in Para-16 (16.1 to16.3) of CMRTS license.
- (e) Channel assignment and loading: Defined in the para – 16.6 of the CMRTS License.
- (f) Operating conditions: -----
- (g) Conditions relating to suspension, revocation or termination of license:
Sufficient provisions already exists in the CMRTS license, so no change is required.
- (h) Any other –
 - (i) CMRTS operators should be allowed to connect with Internet with fixed IP.

- (ii) CMRTS operators should be allowed to provide IoT facility.
- (iii) CMRTS operators should be allowed roaming facility.

Q-23. Whether there is a need to mandate CMRTS licensees to migrate to spectrally efficient digital technologies in a time-bound manner? If yes, what should be the time frame for mandatory migration to spectrally efficient digital technologies? Kindly provide a detailed response with justification.

IAFI reply:

Yes. IAFI is of the view that there is a need to consider optional migration of CMRTS licensees to spectrally efficient digital technologies in a time-bound manner, due to the following reasons.

1. To comply with the International Telecommunication Union (ITU) standards – as ITU has set standards for the use of spectrum for CMRTS services. These standards require the use of digital technologies.
2. Improving spectrum utilization – as analog technologies are inefficient in terms of spectrum utilization. Digital technologies, on the other hand, are more efficient and can accommodate more users on the same amount of spectrum.
3. To improve quality of service – as digital technologies offer better quality of service than analog technologies. This is because digital signals are less susceptible to interference and can be transmitted over longer distances. It will improve the reliability and performance of CMRTS services.

CMRTS providers should be provided with the option of choosing Digital Trunked Radio technologies having backward compatibility with the Analog Trunked Radio systems, to allow graceful migration from Analog to Digital, and to protect current investments, as same RF infrastructure can be used for both Digital and Analog Radio terminals.

Regarding the time -frame for complete migration from analog to digital, comments from the CMRTS providers must be taken.

Q-24. In case your response to Q-23 is in the negative, what provisions should be made to nudge and encourage CMRTS licensees to spectrally efficient digital technologies? Kindly provide a detailed response with justification.

IAFI reply:

No comments, as reply of the Q-23 is affirmative.

Q-25. Whether there is any other issue relevant for review of terms and conditions of the CMRTS License? Kindly provide a detailed response with justifications.

IAFI reply:

IAFI suggest the following changes in the CMRTS licensing document.

- 12.1- Publication of Directory- Publication of directory should be in the electronic form only
- 14.8 – Payment should be through Demand Draft should be amended as BharatKosh is already operational.
- 19.1 –Various guidelines issued by TEC/DoT regarding purchase of telecom equipment from trusted source should be complied
- 27.3 – Regarding SACFA – It should be through Saral Sanchar Portal for transparency.

27.4 – NFAP- is referred as of 2002, however latest version in 2022 has been released.

Q-26. Is there a need to review the license fee prescribed for PMRTS/CMRTS? Please justify your answer. If yes, please suggest detailed methodology for arriving at the license fees for PMRTS/CMRTS with justification.

IAFI reply:

Yes, IAFI is of the view that there is a need to review the license fee prescribed for PMRTS/CMRTS, as the current license fee is 5% of Adjusted Gross Revenue (AGR), is the same as the license fee for commercial mobile services. Following are reasons, why the license fee for PMRTS/CMRTS should be NIL.

First, PMRTS/CMRTS is a specialized service and used by institutional clients only. Services are used for mission critical voice communication, by certain selected segments like Petroleum Corporations, Prisons, Fire Brigade, Ports, Airports, Municipal Corporations, Public Utility Services, Power Distribution Companies, Security Agencies, Manufacturing, Construction, Hotels, Hospitals and Educational Institutions etc

Second, PMRTS/CMRTS operators do not have the same economies of scale as commercial mobile service providers, as their networks are typically smaller and more complex.

Third, the PMRTS/CMRTS sector is facing increasing competition from other technologies, such as voice over IP (VoIP) and 4G/5G mobile.

IAFI is of the view that license fee on the PMRT/CMRT services should be removed, as the lower license fee would make it more attractive for businesses to invest in PMRTS/CMRTS networks.

Q-27. Whether there is a need to review the allocation of spectrum for PMRTS? If yes, what changes should be made in the allocation of spectrum for PMRTS in the National Frequency Allocation Plan? Kindly provide a detailed response with justifications.

IAFI reply:

With 6+6 MHz spectrum already allocated to PMRTS, which is equivalent to 480 frequency channels after migration to digital (6.25 KHz per channel), there is no need for allocation of additional spectrum, considering current and future growth of PMRTS.

Q-28. What should be the method of assignment of spectrum for PMRTS?

(a) Auction; or

(b) Administrative

In the case of auction, what should be the methodology for auction of spectrum? Kindly provide a detailed justification.

IAFI reply:

TRAI has issued one Consultation Paper in the past on 06-02-2018, regarding method of allocation of spectrum for Public Mobile Radio Trunking Service (PMRTS) including

auction, as a transparent mechanism, for comments from stakeholders.

In reply to TRAI, IAFI vide letter dated 22-03-2018 supported administrative allocation of spectrum for PMRTS, due to the following reasons.

1. The market for Trunked Radio is relatively small with no direct competition from other services.
2. Unlike cellular services, it is not intended for general public, but is used to provide group communications meant for person-to-person and person-to-group in sectors such as for Ambulance services, Forest management, Manufacturing, Logistics, Oil & Gas, Mining, Construction projects, Courier services, Utilities like Municipal services, electricity, water etc., maintenance and operation of Roads, Airports, seaports etc.
3. The total PMRTS subscriber base is approximately 65000 users as compared to over a billion cellular wireless subscribers, so it is illogical to compare PMRTS with cellular services.
4. It was also communicated to TRAI that many other countries also treat these services under administrative allocation.

After examining the comments from various stake holders, even TRAI recommended that taking into consideration factors viz. PMRTS market conditions, low spectrum demand and high spectrum availability; the assignment of spectrum for PMRTS should be made administratively on the basis of demand.

IAFI is still of the same view that spectrum to PMRTS services should be allocated **Administratively**.

Q-29. In case it is decided to auction the frequency spectrum allocated to PMRTS, -

- (a) What should be the eligibility conditions for participating in auction?**
- (b) Whether the entire available spectrum in the frequency bands identified for PMRTS in National Frequency Allocation Plan (NFAP) should be put to auction?**
- (c) What should be the block size of spectrum, and minimum bid quantity in terms of number of blocks?**
- (d) What should be the spectrum cap for each authorized area for use of spectrum?**
- (e) What should be the roll-out obligations associated with the assignment of spectrum? What should be the penalties upon non-conforming the roll-out obligations?**
- (f) What should be the period of assignment of spectrum?**
- (g) What should be the minimum period beyond which the spectrum acquired through auction may be permitted to be surrendered?**
- (h) What should be the process and associated terms and conditions for permitting surrender of spectrum through auction?**

Kindly provide a detailed response with justification in respect of each of the above.

IAFI reply:

IAFI is of the view that spectrum to PMRTS services should be allocated **Administratively**.

Q-30. In case auction methodology is to be followed for assignment of spectrum:

- (a) Whether the value of frequencies assigned to the PMRTS providers be derived by relating it to the value or auction determined prices of other IMT/5G bands by using technical efficiency factor? If yes, with which spectrum band, should these frequencies**

be related and what efficiency factor or formula should be used? Please justify your suggestions.

(b) Given the city wise allocation and the potential difference in financial/market parameters of PMRTS with respect to access services, should the valuation of frequency spectrum for these services derived on the basis of IMT/5G prices be adjusted in order to account for the said distinctions? Please explain the adjustment methodology in detail.

(c) Apart from the above approaches, which other valuation approaches can be adopted for valuation of spectrum assigned to PMRTS providers? Kindly support your suggestions with detailed methodologies, assumptions, and other relevant factors.

(d) Is it appropriate to take the reserve price as 70% of the valuation of spectrum? If not, what should be the ratio adopted between the reserve price for the auction and valuation of spectrum and why?

(e) What should be the payment terms and conditions relating to upfront payment, moratorium period, number of instalments to recover deferred payments, rate of discount etc.? Please support your answer with detailed justification.

IAFI reply:

IAFI is of the view that spectrum to PMRTS services should be allocated **Administratively**.

Q-31. Whether there are any other issues/ suggestions relevant to the subject? If yes, the same may kindly be furnished with proper justification.

IAFI reply:

1. The duration of validity of spectrum should be on co-terminus basis, aligned with the validity of the PMRTS license. For CMRTS there should be no need for DOT license and only a WPC spectrum license should be needed
2. Spectrum for PMRTS and CMRTS should be allocated on **administrative** basis only, considering the high spectrum availability and low spectrum demand.
3. Spectrum allocation for PMRTS services should be done based on service area (LSA) and not city wise.
4. PMRTS/CMRTS operators should also be allowed for providing IoT services.
5. PMRTS/CMRTS operators should be allowed for Internet connectivity with fixed IP.
6. PMRTS/CMRTS operators should be allowed roaming facility.
