



December 4, 2017

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Subject: Comments / counter-comments to Consultation Paper on Next Generation Public Protection and Disaster Relief (PPDR) communication networks

Kind Attention: Mr S. T. Abbas,

Dear Sir,

Please refer to above mentioned Consultation Paper, we have following observations:

Q2: In the various models described in para 2.11-2.15, in your opinion which of the model (dedicated, commercial, hybrid) will be more suitable for Indian conditions? or Is there any other alternate model which would be more suitable for Indian telecom environment? Please provide rationale for the suggested model.

Our Response to Question no. 2:

PPDR networks should be based on a dedicated network model as is being followed in many countries due to following reasons:

	Dedicated PPDR model
Business objective	Protect life and property
Capacity design	For “worst day”
Coverage design	Based on full geographic coverage
Legal Liability	Rests with the PPDR agency
Communications design	One-to-many and off-network communications

Broadband data need	Distributed Access (Traffic is locally generated, logged and consumed with heavy upload)
Network resiliency	Mission Critical Hardening
Service priority differentiation	Dynamic Priority based on Incident Type and User Role
Security Considerations	Federated Agency-Based Identity Mgt. User- based Authentication

Q 4. Will it be technically feasible and beneficial to permit PPDR trunking service roaming on public telecom networks? If yes, what challenges do you foresee in implementation of such an arrangement? Please justify your answer.

Our Response:

Radio communications plays a critical and profound role for information exchange within and between Public Protection & Disaster Relief (PPDR) agencies and interaction with other organizations. By their nature, PPDR operations gain significant benefit from the ability to access a wide variety of information, including informational databases, access to instant messaging, mapping and location services, remote control of robots, and other applications. All of these sources of information can be more efficiently conveyed using wireless IP systems. While it is expected that conventional voice dispatch and co-ordination traffic is also destined to be integrated (via PSTN, VoIP, or VoLTE) into future broadband PPDR radio communications systems, it is noted that there may be a longer-term transition, and that administrations may see a role for mission critical narrowband voice communications for some time yet.

In any emergency scenario, the ability of PPDR agencies to react quickly by deploying VOIP network in non RF coverage areas to coordinate appropriate resources will largely determine the final outcome and level of impact on local communities of the emergency.

We therefore recommend that **integration of PSTN, IP Network based Interfaces and VOIP/ VoLTE** under licenses for VHF/UHF Narrowband Digital Two-Way Radios & Digital Radio Trunking Systems should be fully allowed

Question no. 5: Can frequency bands be identified exclusively for public protection and disaster relief? What are the candidate bands for PPDR operations in India?

Our Response

Frequency bands for PPDR Broadband – This has been discussed extensively in **ITU-R. WP5D** in particular has worked on PPDR using IMT technologies. WP5D has recommended certain frequency bands for PPDR in 700/800 band. These bands and their frequency arrangements for PPDR radio communication systems for UHF bands (in accordance with Resolution 646) are given in ITU-R Recommendation. Enclosed please find a copy of the latest version of Recommendation ITU-R M.2015. For Region 3 ,

PPDR broadband in 700 and 800 MHz only are being recommended by ITU based on APT harmonization measures. WPC should adopt the same within the NFAP framework.

Frequency bands for PPDR Digital Radio Trunking – There are two key technologies standardized and deployed worldwide for digital radio trunking communication systems i.e. TETRA and APCO P25. TETRA is based on TDMA and utilizes a 25 kHz channel. APCO P25 Ph2 is also based on TDMA but utilizes a 12.5 KHz channel bandwidth. Under the NFAP guidelines, there are frequency bands available in various bands between 350-430 MHz and 806-869 MHz for CMRTS. This can be based on TETRA or APCO P25. For example Chennai Metro uses TETRA in 400 MHz band. While TN Police has opted for APCO P25 Ph2 technology for deployment of radio system in Chennai in same 400 MHz band due to higher power requirements. A common channel plan need to be defined for allocation of channels under either of these technologies across all bands identified for CMRTS within NFAP so that there can be a smother allocation of spectrum to users in either technology. We request that the same be considered in future NFAP

Frequency bands for PPDR Two-Way Radio Communication in Narrowband VHF – In Narrowband Two-way Radio Communication VHF (136-174 MHz) band is also widely used by PPDR organizations in India, mainly in non Metropolitan city areas. In recent years, it is observed that most of the requirement in India from this sector is for **Digital mobile Radio** (DMR) technology. DMR is an open digital mobile radio standard defined in the European Telecommunications Standards Institute (ETSI) Standard TS 102 361 parts 1–4 and used in commercial products around the world. The primary goal of the standard is to specify a digital system with low complexity, low cost and interoperability across brands, so radio communications purchasers are not locked into a proprietary solution. This technology is being accepted worldwide and also in India majority of PPDR organizations including Public Safety organizations have already inducted this DMR equipment. As on date most of Tender in Narrow band requirement from these organizations are being floated for DMR technology. This had been recently recognized in The World Radio communication Conference (Geneva, 2015) under

RESOLUTION 646 (REV.WRC-15) on Public protection and disaster relief (PPDR) stating that: Countries in Region 3 have adopted parts of the frequency ranges for narrowband PPDR applications:

- 138-174 MHz
- 351-370 MHz
- 380-400 MHz

This band is being used by majority of Public Safety, Fire and many Govt. Civil bodies involved in Early Warning for Disaster & Post Disaster Management operation.

Recommendations:

We request you to kindly incorporate above also in your recommendations.

Q9. Please give your comments on any related matter not covered in this consultation paper.

Our observation & suggestion to Question no. 9:

Spectrum Allotment and use

Captive Mobile Radio Trunking (CMRTS) networks are extensively used by State / City Police, Public Sectors, Utilities, Metros, Airports, Refineries, Steel Plants etc for their captive communications needs. CMRTS Licensing needs a lot of improvement in terms of ease of doing business.

1. Application for CMRTS agreement and Signing of CMRTS agreement: This is still a manual process and handled by CS section of DoT. The current application process for license/spectrum is quite lengthy, iterative and complex without any fixed timelines for completion of each task. There are spectrum/license cases pending for more than a year. We would like to recommend that the process should be reviewed and optimized with a fixed 'hard stop' timeline defined for completion of each task and the overall application process.

- a) It takes very long to sign a CMRTS agreement. DoT should look deeply into the current process and remove unnecessary steps and target to reduce the timelines from Application to signing of CMRTS agreement down to 2 months. This would be a big reprieve to users.
- b) CS section handles agreements which are revenue generating in nature. CMRTS networks are used for Captive use and hence no revenues are generated.

The present system for licensing of a wireless communications system for the state police therefore takes very long and involves the following sequential steps:

1. State Police Application to DoT for CMRTS License
2. DOT collects "No Dues" from 5 Groups of WPC
3. DOT collects Comments/ Frequency approval from 5 Groups of WPC
4. DOT seeks TEC Approval
5. DOT puts up for approval from Minister of Communication (MoC)
6. DoT issues a Letter of Intent and invites the police to pay fees and sign the CMRTS Agreement
7. Application to WPC
8. WPC Demand (LoI /AIP)
9. Payment to WPC
10. DL (Decision Letter)
11. IL (Import License)

Recommendations:

Processing of CMRTS agreement should be under the **purview of WPC only like other Captive Spectrum allocation and submission of application to CS wing of DOT should be stopped.**

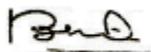
2. High Spectrum Allocation charges: Currently, PPDR agencies have to pay huge amount of money towards license/spectrum charges for deploying a two-way captive radio system. These charges are based on last revision done in 2012, since then, Mobile tariffs have been reviewed & reduced many a times but Captive allocation charges for Two way radios are not reduced since 2012 which are very high in comparison.

The two-way captive radio networks deployed by PPDR agencies are non-revenue generating networks deployed for security, safety, emergency services & disaster management for the citizens and protecting national infrastructure. As such there is no case of spectrum exploitation by such users/networks. Such huge payments for license at the start and on recurring basis, affects the budget planning for PPDR organizations and restrains them from expanding / upgrading their communication systems. Since state PPDR organizations fall under State government, appropriate policy structure should be devised by DoT rather than using the conventional charging philosophy adopted for private wireless networks resulting in huge payments to be made by police agencies.

Recommendations:

Providing for the public's safety is ultimately the responsibility of the government – both state governments and the union Government and one of their highest priorities. “Public safety” means not only putting an end to the levels of crime and violence that impact the everyday lives of our residents, but just as importantly, delivering life saving rescue services, preventing fires, and preparing for and responding effectively to foreign and domestic terrorism, natural and manmade disasters, and pandemic events. Reliable and interoperable wireless communications are essential to public safety's mission to protect life and property. However, the DOT has continuously been increasing the spectrum fees and making licensing of public safety communications prohibitively expensive and time consuming.

There should be **Zero or Minimal Spectrum / License charges levied** only to recover spectrum/ administrative cost with an inter-ministerial arrangement in place.



Warm regards,

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