



Critical communications  
for all professional users

Follow us on  @TCCAcritcomms

October 2016

## TCCA PMR Spectrum position

This paper sets out the current (October 2016) TCCA position on spectrum for critical communications.

### Important Note

The opinions and information given by the TCCA in this white paper are provided in good faith. Whilst we make every attempt to ensure that the information contained in such documents is correct, the TCCA is unable to guarantee the accuracy or completeness of any information contained herein. The TCCA, its employees and agents will not be responsible for any loss, however arising, from the use of, or reliance on this information.

**First issued by the TCCA Critical Communications Broadband Group 12<sup>th</sup> October 2016**

## TCCA PMR Spectrum Position:

Considering that

- PMR systems are characterized by being privately owned and operated under licensed conditions, offering professional group-communication facilities, tailor-made UE design, with deployment of predominantly portable devices allowing users to have full control over their activities and staying very competitive.
- PMR services include Group Call Voice Services (commonly called 'all informed net' and 'talk group call'), Pre-Emptive Priority Call (Emergency Call), Call Retention, Priority Calling, Dynamic Group Number Assignment (DGNA), Ambience Listening, Call Authorized by Dispatcher, Area Selection, Late Entry, Direct Mode, Short Data Service, Packet Data service and smooth migration from analogue to digital platforms.
- PMR Industry is serving the market with solutions ranging from very small single site systems to huge nationwide PPDR networks.
- PMR sector is highly competitive with 20+ vendors.
- The 400 MHz Spectrum is heavily used by PMR with more than 100,000 licenses in effects in CEPT48.

Since standalone LTE base stations will not be synchronized with neighbouring stations, interference will be out of control and will require “guard ranges” on top of guard bands.

Taking a big spectrum slice out of either 410-430 MHz or 450-470 MHz for a single carrier solution will reduce the number of possible deployable systems and therefore reduce the competition in the sector.

Further considering that

- 410-430 MHz – is not a 3GPP band – and agreed at WRC2015 not to be an IMT band.
- 410-430 MHz – protection will be required towards existing NB licenses as well as MIL radar and radio astronomy – requiring guard bands.
- 450-470 MHz – protection towards existing NB licenses as well as protection of TV channel 21 will be required.

**Therefore the TCCA position is:**

- 410-430 MHz should continue to be a PMR band based on existing bandwidth regulation (FDD; 6,25; 12,5; 25; 50; 100; 150; 200 kHz & 1,25 MHz).
- Recognizing that 450-470 MHz is an IMT band, the conversion of existing CDMA licenses in band 31 to LTE should not be opposed.
- Regulation in the remaining parts of 450-470 MHz should remain FDD and not be changed.

## **General Summary:**

ECC plenary approved publication of ECC Decision (16)02.

ECC / FM has submitted the decision and technical conditions for broadband PPDR to 3GPP for next RAN meeting and have asked for the creation of work to implement it Broadband PPDR in 700MHz and in 450Mhz

- 450.5 - 456.0 MHz (Uplink) / 460.5 - 466.0 MHz (Downlink) ;
- 452.0 - 457.5 MHz (Uplink) / 462.0 - 467.5 MHz (Downlink) ;
- 698 - 703 MHz (Uplink) / 753 - 758 MHz (Downlink);
- 703 - 733 MHz (Uplink) / 758 - 788 MHz (Downlink);
- 733 - 736 MHz (Uplink) 788 - 791 MHz (Downlink);

France MoI and Airbus have submitted their request as well (excluding the B28 2x30MHz) and have asked the 3GPP to re-open Band 68 WI and include OOB parameters of -42dBm/8MHz.

Re-opening of ECC Decision (16)02 Hungary, with support from a few others, convinced ECC to re-consider 410-430 MHz as band for PPDR. Work is ongoing in SE7.

Potential for BB-PMR in 400 MHz. FM54 and SE7 are working on a report that investigates if it is possible to introduce LTE regulation in the 400 MHz band. This will directly have an impact on PMR users and PMR industry. We need a TCCA decision.

## **National level:**

Sweden: Intelligence Service has voiced their concern. MoJ opened on investigation into spectrum needs – draft due 15 October 2016.

## **Annex:**

### **No BB-PPDR in Europe without dedicated spectrum, says PPDR community**

**The news comes amid a background of spectrum security concerns, including a warning from the Swedish Police Authority about the nature of potential buyers in its forthcoming spectrum auction.**

The CEPT Electronic Communications Committee (ECC) has adopted harmonised technical conditions and spectrum for the implementation of broadband public protection and disaster relief (BB-PPDR) systems.

ECC decision (16)02 (ECC/DEC (16)02) adds 2 x 5 MHz and 2 x 3MHz blocks either side of the PPDR spectrum options in Band 28 cited in the decision's predecessor. The Band 28 options are 2 x 30 MHz blocks between 703-733 MHz and 758-788 MHz.

The TETRA and Critical Communications Association (TCCA) considers 2 x10 MHz in band 28 to be the best option available for Broadband PPDR service. "That is the only option available where multi-vendor choice is real, leading to innovation, competition and with all the benefits of being part of a major commercial ecosystem," said Jeppe Jepsen, a TCCA board member.

Jepsen said TCCA welcomes the EEC's decision but said that it became clear late in the plenary at which it was reached that "the conditions that were forced upon the 2 x 5 MHz below Band 28 mean there will be difficulties in getting chip manufacturers to make these chips".

The PPDR market is dwarfed by commercial spectrum users and operates on longer investment cycles, said Jepsen. "In PPDR terms, ten years from the start of a project to its completion is normal so the attractiveness of spending on chip sets for this band under these technical conditions is difficult."

Jepsen said that countries will be honing in on Band 28 as it already has equipment ready to use. "We're not saying the other frequency will not be viable but it will probably not be the mainstream chip vendors that will do it. It will be specialised ones, which means the market will lose mass market developments. It will probably be more specialised users like military."

"The national regulators need to appreciate that they need to do something special in Band 28 as a consequence of this," said Jepsen.

Jepson said there are two options for regulators: not auctioning 2 x 10 MHz in Band 28, or negotiating with operators awarded spectrum in 2 x 10 MHz below or above the PPDR allocation so that they can build a 2 x 20 MHz band or network. “That will provide much more data speed and that operator will then be in a competitive situation and the consequence will be to service public safety as well.”

A letter co-signed by the heads of the national police, military and the MSB (the Swedish emergency services support provider) in May asked the Swedish government to take the former option and set aside 2 x 10 MHz of spectrum in Band 28. The Swedish Postal and Telecom Authority said it will not comment on “individual consultation responses”.

### **Swedish spectrum ownership concerns**

A spokesperson for the Swedish Postal and Telecoms Service (PTS) told PolicyTracker that it has conducted a consultation on the 700 MHz auction and does not wish to comment on individual responses, including a warning from the head of the Swedish Police Authority Anders on the dangers of the organisations who do not have the country’s interests at heart buying spectrum in Sweden.

Although Anders Hall, development director of the National Operative Department of the Swedish Police Authority did specify whom he was referring to, there was speculation that the internet service provider Net1, owned by a Russian national, could be one such cause for concern.

Net1 currently holds spectrum in 450 MHz which it uses to provide LTE services. Alcatel Lucent began rolling out the companies network in 2014 and a press release at the time said it would be looking to expand into 800 MHz, 900 MHz and 1800 MHz in the future. There is no news on whether Net1 wants to acquire the 700 MHz spectrum being auctioned in Sweden in December this year.