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Airbus Defence & Space's answer to

iDA second consultation on proposed framework for the allocation of spectrum for International Mobile Telecommunications (IMT) and IMT-advanced services and for the enhancement of competition in the mobile market

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Points of Contacts:

Airbus DS Headquarters:
Risto Toikkanen risto.toikkanen@airbus.com

Singapore Office:
Raymond Lim raymond.r.lim@airbus.com

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1 Introduction

This document correspond to the answers prepared by Airbus Defence & Space to the iDA second consultation on proposed framework for the allocation of framework for the allocation of spectrum for International Mobile Telecommunications (IMT) and IMT-advanced services and for the enhancement of competition in the mobile market.

The next section is defining Airbus Defence and Space's points of interest and summarizing the major points of the answers. Detailed answers to iDA questions are provided into section 3.

2 Statement of interest and summary of major points

As Airbus Defence and Space is focusing on PPDR (Public Protection and Disaster Relief) / PMR (Professional Mobile Radio) / LMR (Land Mobile Radio) market, Airbus Defence & Space is not willing to comment the frequency bands foreseen for commercial mobile business.

Therefore Airbus Defence and Space is only commenting the questions related to the 700 MHz and 800 MHz taking into the fact that those frequencies are candidate to be allocated for PPDR usage or are already allocated to PPDR usage.

Airbus Defence & Space is considering that:

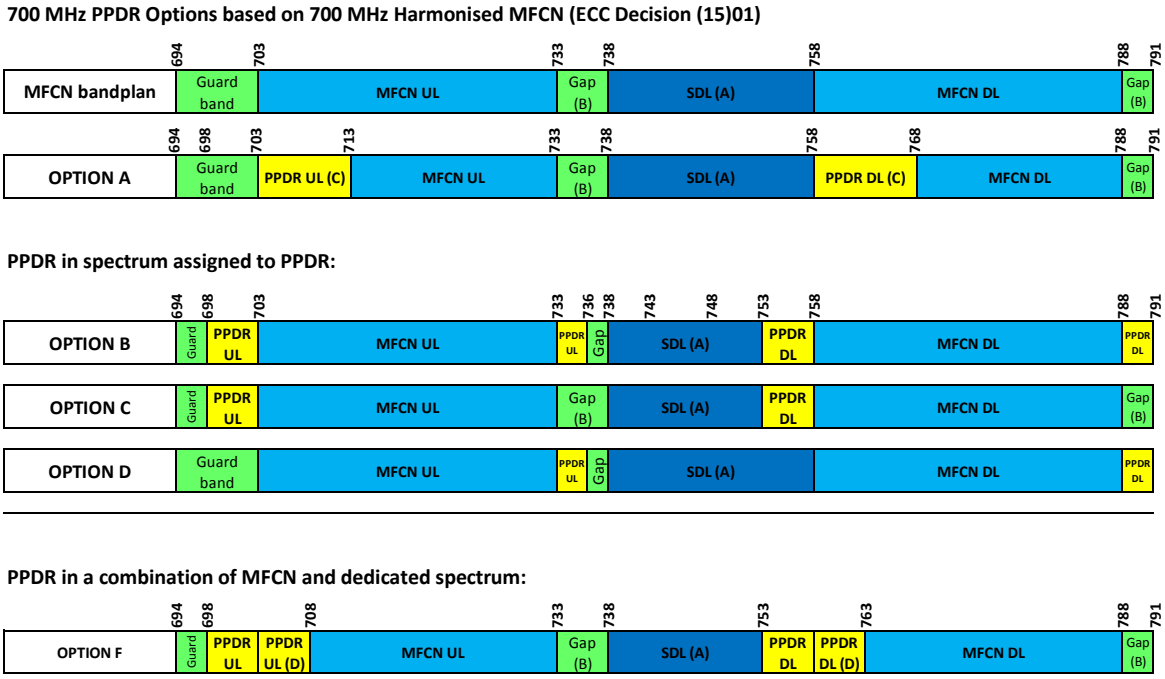
- allocating the low end of Band 28 (700 MHz) is the favoured option for PPDR allocation into that frequency range and
- the 800 MHz PMR/LMR should be protected for continuing PMR use

3 Detailed answers to iDA questions

Question 1: IDA would like to seek views and comments on the proposed allocation of the 700 MHz band together with other suitable bands for mobile services in the next spectrum allocation exercise; and the mechanism to allow the delay of the commencement date of the 700 MHz spectrum right, and correspondingly, the expiry date as well as the spectrum right payment due date, in the event of a delay in the ASO.

The APT band 28 provides a lot of high quality mobile spectrum. We believe that there is room to reserve part of that for government/PPDR use.

Spectrum allocation for LTE-based PPDR services into the 700 MHz is a topic under consideration within Region 1 in the frame of World Radio Conference 2015. In Europe (ECC/CEPT) several options are considered and summarized by the following scheme.



700 MHz PPDR Options within ECC/CEPT

Several European countries have already decided or are going in a near future to allocate 2 x 30 MHz to MFCN (Mobile Fixed Communications Network) for carrier operators. Some like France are considering allocating spectrum within this 700 MHz band to Security Forces (see option B). Such an allocation will make available up to 2 x 8 MHz PPDR spectrum.

Please note that Europe is also considering the 400 MHz band to complement the 700 MHz especially to achieve coverage in open environment in a cost-effective manner.

The ECC reports on Broadband PPDR, ECC Report 199 and ECC Report 218 (in public consultation now), describe the European Broadband PPDR spectrum plans. Extensive co-existence studies between LTE-based PPDR and multiple other radio technologies are presented in ECC Report 239 and ECC Report 240, which are now under public consultation and should be approved before the end of the year.

iDA is invited to consider the option to reserve the low end of the 700 MHz band for Broadband PPDR (Option C of the scheme above) when preparing the allocation of the 700 MHz to mobile services. This would offer significant synergies with both Europe and the APT countries considering similar approach.

Question 2: IDA would like to seek views and comments on:

a) ***The proposed 800 MHz band plan based on the 3GPP band 26, or a combination of 3GPP band 27 and band 5 (excluding the EGSM band), including views on the possible phased approach and timeline to migrate existing users of the band; and***

b) ***The impact to existing users (i.e., Trunked radio and SRD) of the 800 MHz band plan based on the 3GPP band 26, or a combination of 3GPP band 27 and band 5 (excluding the EGSM band).***

Regarding sub-question a) we believe that there is still a need to maintain capacity for Trunk Radio or other narrowband PMR services. It clearly appears that the proposed scheme will significantly decrease Trunk Radio allocation from 2 x 15 MHz to 2 x 8 MHz. The proposed 2 x 10 MHz PPDR allocation above 814 MHz will at least partly compensate that capacity loss, but the migration phase, including possible Trunk Radio refarmings, will have to be managed very carefully. The proposed compromise between Trunk Radio and LTE-based PPDR as such seems to be reasonable.

Regarding sub-question b) and based on Airbus Defence and Space contributions to ECC/CEPT, the main issue with LTE introduction is linked to the emission mask of LTE equipment (eNodeB and UE). Such transmissions will have to be carefully limited (in the out-of-band emission domain) in order to limit the interference into the Trunk Radio (e.g. TETRA) reception bands. It is not expected that narrowband Trunked Radio systems will interfere with LTE-based radio systems.

Question 3: IDA would like to seek views and comments on the allocation of the short-term spectrum rights for the EGSM band, including the approach to extend the short-term spectrum right.

No comment to commercial mobile business matters.

Question 4: IDA would like to seek views and comments on:

a) The proposed re-allocation of the L-band for wireless broadband in Singapore in the longer term; and

b) The allocation of the L-band for trial, temporary use and/or commercial services in the interim period.

No comment to commercial mobile business matters.

Question 5: IDA would like to seek views and comments on:

a) The proposed approach for local operators to coordinate with neighbouring countries' operators to address potential co-channel interference in the use of the 2.5 GHz band;

b) The use of the proposed 5 MHz guard band in the 2.5 GHz band to prevent interference between TDD and FDD systems operating in adjacent bands, versus the imposition of suitable mitigation measures to prevent interference; and

c) The possible adoption and/or suitable restriction levels for Block Edge Mask, synchronisation of TDD networks and any other suitable mitigation measures to prevent co-channel or adjacent channel interference between different TDD systems or between TDD and FDD systems.

No comment to commercial mobile business matters.

Question 6: IDA welcomes views and comments on the proposed allocation of the spectrum bands in the next allocation exercise, including on the proposed uses and spectrum right durations of the spectrum bands, the proposed 'Clock Plus' auction format, as well as the appropriate spectrum caps and regulatory obligations to ensure the optimal use of the spectrum.

It is understood that proposed allocation mechanism is mainly applying to commercial operators. PPDR operators, whatever the technology (LTE or TETRA), whatever the band (700 or 800 MHz) are assumed be subject to a different mechanism. It is expected that frequencies will be made available by Singaporean Authorities to the company (companies) in charge of the PPDR networks roll-out.

Question 7: IDA would like to seek views and comments on the proposed facilitation framework for the new MNO, including on the set-aside spectrum, the reserve price for the set-aside spectrum, the auction format, and the regulatory obligations on the new MNO.

No comment to commercial mobile business matters.

Question 8: IDA would like to seek views and comments on the proposed negotiation principles to facilitate wholesale access negotiations between "thick" MVNOs and MNOs.

No comment to commercial mobile business matters.

4 Conclusion

In this document, Airbus Defence and Space is only commenting the questions related to the frequency candidates that are allocated or that could be allocated to PPDR usage.

Therefore, we are of the view that:

- allocating the low end of Band 28 (700 MHz) is the favoured option for PPDR allocation into that frequency range offering significant synergies with both Europe and the APT countries considering similar approach
- the 800 MHz PMR/LMR should be protected for continuing PMR use with both Trunked Radio and LTE technologies.