
Deutsche Telekom Comments on the Commission Report COM (2014) 536 on the RSPP Spectrum Inventory

Introduction

Deutsche Telekom (DT) would like to thank the EU Commission (EC) for the opportunity to comment on this report. DT supported the decision to establish a European Spectrum Inventory from the beginning as an important step to a more systematic approach for a future proof spectrum management and policy.

DT assumes that the Spectrum Inventory will be the basis for future decisions on how to use the radio spectrum in the European Union. Therefore it is of utmost importance that a common European understanding on the results of the RSPP Spectrum Inventory can be achieved. DT is of the opinion that a few points in the report need to be amended and highlighted from a mobile operators' perspective.

3.1 Spectrum supply

DT agrees with most of the findings in this section. In particular the statement regarding the limited use of the band 2700-2900 MHz by radar applications is supported. Please see more detailed comments regarding this band further down under section 4.2 .

Regarding the band 3400-3800 MHz please find more detailed comments in section 4.1 . DT shares the opinion that due to various reasons this band is currently not used efficiently by the incumbent users (e. g. satellite and BWA¹). Currently nearly all EU Member States have assigned this band to BWA use and only in some limited cases also for mobile. BWA licensees are mainly not mobile operators and hence they do not offer mobile broadband to the public. This could be one reason for a rather limited use of this band.

3.2 Spectrum demand

Broadcasting:

DT is of the opinion that the trend for migration of the broadcast service to other technical platforms (e. g. cable, satellite and IP TV) has been overlooked here. It is hard to believe that there will be an increase of spectrum demand of more than 50% for linear broadcasting services in a medium and long-term period for Digital TV via terrestrial networks.

DT is of the opinion that it is neither economical nor spectrum efficient to offer broadcasting services based on technologies like 3DTV and UHD TV via terrestrial networks. Transmission via satellite and wired technologies is much more appropriate. Terrestrial wireless networks should

¹ BWA = Broadband Wireless Access

predominantly be used for portable/mobile applications. 3DTV and UHDTV do not make sense for portable and mobile use with small screens.

Thus DT is convinced that the spectrum demand of digital terrestrial TV will decrease in medium and long term.

4 Key findings

- **Licensed Shared Access (LSA):**
DT supports the promotion of LSA, in particular for the band 2.3-2.4 GHz. However, DT would like to note that the cases where additional spectrum for mobile services can be opened by LSA are often overestimated. LSA cannot significantly mitigate the need for more mobile service spectrum which can be used on an exclusive basis.
DT is convinced that for public cellular mobile networks exclusively licensed access to spectrum remains the most efficient and successful way to satisfy the need for innovative high quality mobile broadband services and provides the best basis for investment in future mobile broadband networks.
- **Geographical spectrum sharing:**
DT supports innovative solutions with devices linked to geo-location databases but is convinced that it needs considerable more time to reach a level of maturity that helps to build confidence in these technologies.
- **More effective use of existing networks and spectrum assignments:**
Mobile networks are constantly expanded and upgraded according to the needs of the customers. Refarming of legacy technologies by innovative new technologies helps to considerably mitigate the spectrum need. Densification of networks via small cell rollout is also applied in order to enhance the capacity of a mobile service network in hot spots. However, for capacity increase of the whole network, including rural areas, it is not possible by economical means to enhance the capacity by general densification of the network. Hence, more spectrum is generally required in order to accommodate the growing data traffic in mobile networks.

4.1 Wireless broadband spectrum

DT misses a clear statement of the Commission how to deal with the mobile broadband spectrum need by 2020. To rely on the minimum of the spectrum need for 2015, i. e. 1200 MHz, may not be appropriate. The intention of the RSPD decision 243/2012/EU (art. 3b) is to provide “at least” 1200 MHz by 2015. DT is of the opinion that it would not be advisable to build a European broadband society for 2020 on limited resources projected for 2015.

DT is convinced that there will be considerable growth of data traffic and the mobile business beyond 2015 and therefore would like to urge the Commission to follow the spirit of the RSPD decision and to do everything necessary to promote mobile broadband for the whole society.

Sufficient spectrum for mobile broadband is a basic prerequisite to meeting the objectives of the digital agenda

Additional harmonized frequency bands for wireless broadband

It is stated in the Commission's inventory report that there is currently no need for additional spectrum harmonization for broadband mobile. As a main reason it is claimed that the level of under-utilized spectrum for mobile broadband is significant. In particular the band 3.4-3.8 GHz is referred to in this context.

In nearly all EU Member States this band has initially been assigned to "broadband wireless access (BWA)" use and BWA licenses were only later partly extended to mobile usage. BWA-licensees mainly do not belong to the cellular mobile community and they have not been very active to date. Hence, until recently this band has not been in the focus of broadband mobile cellular applications.

This will change in the coming years with the advent of LTE Advanced and the necessity for greater carrier bandwidths and carrier aggregation.

Moreover harmonisation on basis of a WRC-Decision for the whole band 3.4 – 3.8 GHz is still outstanding. Hence, a mobile technical eco-system for this band is still missing. Mobile Network Operators expect WRC-15 to take this decision to prepare for a future deployment of LTE-Advanced. The Commission should do the utmost to pave the way for this decision.

DT is therefore of the opinion that there is indeed a significant need for additional spectrum harmonization in the EU.

The additional frequency bands need to be available by 2020. In light of the long lead times to make additional bands available it is of utmost importance to act immediately.

Wi-Fi:

DT is promoting use of Wi-Fi since a long time, but shifting of data traffic from mobile networks to fixed networks by Wi-Fi is not an appropriate solution in case of scarce mobile spectrum resources. In rural and remote areas it is self-evident that Wi-Fi is not an alternative to mobile spectrum. Furthermore, according to studies, Wi-Fi traffic is mainly additional traffic that would not have been generated without Wi-Fi access.

4.2 Sharing of radar bands

DT fully supports the statement that the 2700-2900 MHz band is often only used at specific geographical locations leaving unused possibilities for spectrum sharing. Unfortunately, most of the European administrations do not share this position and do not support 2700-2900 MHz as a candidate band for the allocation to mobile service at WRC-15. The Commission should help to convince those administrations that sharing of the band between broadband mobile and radar is possible.

4.4 Satellite communications

The text regarding the satellite use of the C-Band seems to undermine Decision 2008/411/EC. DT would like to refer to its comments regarding the band 3.4-3.8 GHz under section 4.1 . In Europe the entire band 3.4-3.8 GHz is needed for mobile broadband services, however, sharing with existing satellite earth stations is possible.

DT would like to note that in Europe the C-Band is not as important for the satellite services as in countries with heavy rainfall, e. g. in tropical regions. Thus in Europe the remaining C-Band satellite applications could be shifted to higher satellite bands.