Qualcomm Europe Inc.

RSPG consultation on

Draft RSPG Opinion on a long-term strategy on the future use of the UHF band (470-790 MHz) in the European Union

Qualcomm Response

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Qualcomm highly appreciates the opportunity to provide RSPG with some comments on its draft opinion *on a long-term strategy on the future use of the UHF band (470-790 MHz) in the European Union.*

Qualcomm fully supports the RSPG recommendation to provide wireless broadband services in the 700 MHz in a harmonised manner throughout the European Union. Given the utmost relevance of the 700 MHz for mobile communications worldwide, Qualcomm believes that the interest of the European citizen would be best served through the adoption of a 2020 deadline for making the band available for effective use for ECS. It should be noted that a 5 year transition period already seems incredibly long, when taking into account the speed of evolution of ECS and internet services.

Qualcomm also welcomes the RSPG recommendation to provide Member States with the flexibility to use the 470-694 MHz band for WBB downlink, in line with the recommendation of the Lamy report. Such initiatives will enable Member States to adapt more closely to their national situation, while maintaining manageable cross border coordination procedures throughout Europe.

Qualcomm urges the RSPG to reconsider its opinion on convergence of platforms and technologies. Qualcomm fully agrees with the RSPG assessment of the benefits of the DTT platform. In order to preserve these benefits, it is of utmost importance to defend and extend the positioning of the DTT platform in the broadcast offering. In particular, in its current implementation, DTT is unable to reach out mobile devices – such as mobile phones and tablets – and to provide next generation broadcast services (such as non-linear services). Developing the next generation broadcast platform in Europe, leveraging WBB networks and technology to deliver broadcast content in the UHF, would benefit European broadcast content providers and reposition them against purely internet based services.

Qualcomm recommends RSPG to adopt in its opinion a recommendation to open as soon as possible studies to:
-introduce flexibility in the 470-694 MHz band,
-study the different convergence options, in particular analysing the relevance of the DTT platform in these different convergence scenarios.

Qualcomm would like to provide below comments on specific points of the draft opinion and remain available to provide any follow-up information, if required, to the RSPG.

Use of the UHF band

The draft opinion indicates in the definition of audiovisual services (section 2.1, p6), that:

Today, […] the UHF band is used […] in some countries, also for on-demand audiovisual media service.

Qualcomm believes that this statement is, to the best of our knowledge, incorrect. The UHF is used throughout Europe for terrestrial broadcasting, which by definition cannot deliver on-demand services as it does not support a return channel.

One of the benefits of adopting a converging platform in the lower UHF band would be to open the possibility for such services on the terrestrial broadcast platform.

Qualcomm recommends adopting the following wording:

Today, in the European countries, the UHF band is used for television broadcasting, i.e. for linear audiovisual media service~~, and, in some countries, also for on-demand audiovisual media service~~.

DTT platform vs DVB technology

The draft opinion indicates in section 4.1.2 p9, that:

DTT free-to-air content can be received […] using widely available receivers based on DVB-T/DVB-T2 standards.

Qualcomm agrees that the DTT plays an important role for European citizens. However, Qualcomm disagrees that the DTT platform should be limited to the DVB-T/DVB-T2 technologies. In fact, linking DTT to a specific technology is a threat to the platform itself, especially if the technology does not deliver the services requested by consumers – or delivers them late.

The interest of the consumers are linked to the benefits of the platform, and not to a specific technology. In particular, it is clear that the DVB family of technology is extremely unlikely to ever be integrated in mainstream mobile devices such as smartphones and tablets. This is a major drawback for the DTT platform, as it cannot reach the citizen and consumers on the devices they use the most.

More generally, the offering of DVB devices is quite limited to large screen in-house devices. Any other type of DVB-compatible devices correspond to a niche market. The

lack of demand for such devices is readily explainable by the limitation of the DVB technology (only broadcast service) and the fact that DVB networks – as currently implemented over High Power High Tower networks – cannot deliver 'mobile grade coverage', leading to bad Quality of Service for users wishing to use a portable device.

Qualcomm believes that RSPG should actively promote the evolution of the DTT platform, to provide the best and most appropriate services to consumers, otherwise the platform is at risk of losing its relevance against other platforms.
Qualcomm argues that technology neutrality has demonstrated in other market its powerful capability to foster technology competition and advances, without fragmenting the market.
Qualcomm recommends adopting the following wording:
DTT free-to-air content can be received without any contract with a service provider or platform operator and without requiring a reverse channel. It can be accessed by -often already existing- roof-top antenna systems or through portable reception in reduced coverage areas around the transmitter sites using ~~widely available~~ receivers ***usually integrated in TV screens*** *~~based on DVB-T/DVB-T2 standards~~.*

The draft opinion also indicates in the same section that section 4.1.2 p9, that:
DTT is one of the platforms that allow competition on the TV receivers market, widen consumer choice and facilitate third parties initiatives and innovation.
Qualcomm agrees that DTT is one broadcast platform and that DTT enables competition between broadcast platforms. The consumer choice for fixed TV reception includes satellite, cable, IP-TV and DTT. However, this is unrelated to competition in the TV receivers market or the DVB-T/T2 technology. On the contrary, the selection of a specific technology and the corresponding sparse network implementation prevents user from having access to the service in mobility, or on their preferred device (e.g. smartphone and tablet). The service innovation over the DTT platform is extremely low as the platform is locked, both on the technology side and the network side. Broadcast service innovations happen predominantly over IP delivery platforms, where the service layer is independent of the delivery layer. LTE broadcast, combined with LTE,

is such IP based delivery platform, and would enable the DTT platform to deliver innovation.

Qualcomm recommends adopting the following wording:

*DTT is one of the platforms that allow competition on the TV ~~receivers~~**delivery platform** market~~, widen consumer choice and facilitate third parties initiatives and innovation~~.*

Broadband complementing or replacing broadcasting platforms?

The draft opinion also indicates in the same section that section 4.1.2 p9, that:

The current WBB platform is not a viable solution for television delivery of free to air or commercial programs with high public interest which have to be delivered to large audiences and to wide geographical areas. In its current form WBB does not provide the required availability for all citizens and capacity for providing adequate quality of service. Therefore, to be considered as a competitive platform for television delivery, new standards and more effective ways of delivering data should to be implemented.

Qualcomm agrees that some modifications of the LTE eMBMS standard are required before LTE eMBMS can become a candidate technology for the DTT platform, as discussed in the ECC Report 224. However, mobile broadband standards such as LTE evolve constantly based on very short update cycles. Should countries and regulators indicate a willingness to open the DTT platform to innovative technologies, the required modifications could be implemented much faster than any technology transition based on current DTT technology and networks.

Also, it should be stressed that several studies (Plum, ECC Report 224) highlighted that such implementation would not just match but vastly outperform the current DTT platform based on DVB technologies over High Power High Tower networks.

Qualcomm recommends adopting the following wording:

*The current WBB platform is not a viable solution for television delivery of free to air or commercial programs with high public interest which have to be delivered to large audiences and to wide geographical areas. In its current form WBB does not provide the required availability for all citizens and capacity for providing adequate quality of service. **Mobile broadband technology could be implemented to provide a platform***

for television delivery, should there be a political willingness to open the DTT platform to innovative technologies. ~~*Therefore, to be considered as a competitive platform for television delivery, new standards and more effective ways of delivering data should to be implemented.*~~

The draft opinion indicates in section 4.1.3 p10, that:

The addition of broadband to the above mentioned platforms could enable the development of new kind of bi-directional services facilitating both broadcasters and third parties initiatives and innovation as well as widen the consumer choice and capabilities to interact compared to traditional one-directional broadcasting.

Qualcomm agrees that new kind of broadcast services can emerge over broadband networks, in particular due to the availability of a return channel. However, this is linked exclusively to the broadband platform and is entirely unrelated to the DTT platform, as implemented today.

The first reason is that the availability of such evolved services is linked to the availability of a good quality broadband connection. Typically, when such connection is available, there is no reason for the user not to obtain the broadcast stream through the broadband connection.

But even more fundamentally, the DTT platform as currently implemented relies on very loose network topologies, with High Power High Tower sites delivering content to 1000's of households. Sharing the downlink pipe over such a massive number of users directly restrict the possibility to support any type of on-demand or individualised content.

Qualcomm fully agrees that the availability of quality broadband connection will trigger the development of new audio-visual services – in fact in many respects it already has, when only considering services such as BBC iPlayer, YouTube or Netflix. However, these new services are purely broadband based and do not complement the DTT platform as currently implemented. On the contrary, they do trigger a loss of relevance for the DTT platform.

Content providers developing a strategy based primarily on DTT will miss out on these news services and run the risk of missing out on developing markets, unless the DTT platform is extended to a) adopt a technology designed from the start with these new services in mind b) provide some unique features (e.g. the possibility to reach mobile terminals).

Qualcomm recommends adopting the following wording:

*The **delivery of broadcast services over** ~~addition of~~ broadband **platforms** ~~to the above mentioned platforms could~~ enables the development of new kind of bi-directional services facilitating both broadcasters and third parties initiatives and innovation as well as widen the consumer choice and capabilities to interact compared to traditional one-directional broadcasting.*

LTE eMBMS and LTE Broadcast

The draft opinion indicates in section 6.2 p15, that:

LTE Broadcast differs from LTE eMBMS through the use of longer cyclic prefixes, a dedicated downlink channel and no limit on the proportion of the channel that can be dedicated to broadcast.

Qualcomm understands that the RSPG adopted this definition based on the work of the ECC TG6. Indeed, in the report 224, 'LTE broadcast' was used to described potential evolution of the LTE eMBMS standard while 'LTE eMBMS' was used to describe the current state of the standard. While this distinction was useful in the context of the ECC Report 224, it is incorrect generally speaking. 'LTE broadcast' applies also to existing version of the LTE eMBMS standard and 'LTE eMBMS' is not restricted to the current implementation but can evolve in the future.

Qualcomm recommends RSPG to precede the sentence above by: *In the context of this RSPG Opinion, and for sake of clarity, LTE Broadcast and LTE eMBMS will be redefined in the following manner:*

Convergence between DTT and WBB

The draft opinion indicates in section 6.3 p15, that:

DTT technology is more and more combined and used with other communication platforms, e.g. via internet enabled TV sets.

Qualcomm believes this statement to be incorrect. Internet enabled TV sets simply propose to watch content either on the internet, or on the broadcast platform (satellite, cable, IP-TV or terrestrial). This is no different than proposing access to parallel broadcast platform (e.g. cable and DTT). Nobody would argue that this represents convergence between the satellite and the DTT platforms. Similarly, there is no convergence between the DTT services and the internet related services.

Qualcomm recommends RSPG to adopt the following wording:

DTT technology is ***less and less being the single platform used to access broadcast services as it cannot deliver the service innovation offered by broadcast services over broadband platforms****, e.g. via internet enabled TV sets.* ***Instead, most modern devices can access broadband platforms, to either to complement or to replace broadcast platforms including DTT.***

The draft opinion further states in section 6.3 p15-16 that:

Both linear and non-linear media content is increasingly provided independent of the platform i.e. consumer may choose whether to receive the content via WBB or DTT platform.

This statement is factually incorrect as DTT platform in its current implementation cannot deliver non-linear media content. A consumer choosing to use only the DTT platform is today de facto excluded from on-demand services, creating some new kind of digital divide between users having access to full media services (those with a broadband connection) and those being restricted to linear services (DTT-only users).

Qualcomm recommends RSPG to adopt the following wording:

Both linear and non-linear media content is increasingly provided ***on broadband platform. Broadcast platforms currently only deliver linear media content.*** ~~*independent of the platform i.e. c*~~***C****onsumers may choose whether to receive the linear*

content via WBB or DTT platform, ***but have to connect to a broadband platform for non-linear services****.*

The draft opinion then states p16:

On the platform point of view, there is no convergence expected between DTT and WBB.

The ECC Report 224 – the result of more than a year of studies by European Administrations – clearly identifies several scenarios where the WBB and the DTT platform would converge. ECC Report 224 also underlines clear benefits related to such approaches.

The study on the "challenges and opportunities of broadcast broadband convergence" conducted by Plum Consulting for the EC de facto only considers scenarios where WBB and DTT platform are converging, since it only analyses scenarios based on Low Power Low Tower (i.e. WBB) infrastructure to deliver broadcast services.

Qualcomm strongly disagrees with the wording proposed by RSPG. While convergence is uncertain, it is seriously studied by several bodies and therefore cannot be excluded.

Qualcomm recommends RSPG to adopt the following wording:

On the platform point of view, ***convergence over broadband platform is already effective for fixed broadband (IPTV is very popular in Europe) and has been proposed and discussed over the WBB platform, leveraging broadcasting delivery over cellular networks. Further studies are required to fully assess the opportunity to adopt converging WBB-broadcast platforms.*** ~~*there is no convergence expected between DTT and WBB*~~*.*

Finally the draft opinion speculates p16 that:

The actual convergence may happen between traditional broadcasting and WBB and other delivery platforms on the service level.

While nothing can be excluded, it should be noted that there is no such thing as convergence on the service level at this stage. Users typically can get access to another service – with improved functionalities – over broadband platforms at large, but these are in effect separate services.

Qualcomm recommends removing this sentence from the draft opinion:

~~*The actual convergence may happen between traditional broadcasting and WBB and other delivery platforms on the service level.*~~

Qualcomm believes that section 6.3 of the draft Opinion does not reflect adequately the situation and the conclusion of the different working groups. The draft opinion rejects arbitrarily an option considered relevant by most administrations in CEPT and endorses another option which seems unrealistic. Qualcomm believes that the users and citizen throughout Europe would benefit from an open discussion about the diverse options, with their interest in mind, and that studies should be conducted to identify valid options. Qualcomm strongly recommends RSPG to adopt its proposed modified wording, reflecting the current stage of the discussion.

Prerequisites for service level convergence (Section 6.3.1)

The draft opinion indicates in section 6.3.1 p16, that:

Several prerequisites would need to be in place, before AV media services may be provided to mass audiences and to large areas by broadband platforms […].

Qualcomm would like to stress that IPTV is already delivering AV media services to mass audience and to large areas in European countries. The Eutelsat 2014 Western Europe TV observatory indicates that in 2014, 28.7 million households, out of a population base of 175.7 million TV homes, are using IPTV as their primary TV reception mode. The IPTV platform is already comparable with the satellite platform (58.1 million), the DTT platform (48.2 million) and the cable platform (44.3 million). Most significantly, the IPTV platform is by far the fastest growing platform (9.9 million households in 2013, 28.7 million in 2014). IPTV market numbers clearly demonstrate that AV media services are already today provided to mass audiences and to large areas by broadband platforms, in direct contradiction to the wording proposed by the RSPG.

Assuming that the goals objectives of the Digital Agenda for Europe (fostering access to broadband at a speed of not less than 30 Mbps by 2020 for all Union citizens) are

fulfilled, it is unclear which prerequisites related to '*coverage, capacity, reliability of delivery and quality of service*' the RSPG is referring to. The entire paragraph seems to be inappropriate given the popularity of the IPTV platform in some European countries the expected widespread availability of fast IP connection, in line with the EU Digital Agenda.

Qualcomm recommends removing the paragraph from the draft opinion:

~~*Several prerequisites would need to be in place, before AV media services may be provided to mass audiences and to large areas by broadband platforms and service convergence may be realised. The main requirements for the extensive AV media service delivery are the coverage, capacity, reliability of delivery and quality of service.*~~

DTT platform in 470-694 MHz until 2030 (Section 6.3.1)

The draft opinion indicates in section 9 p27, that:

RSPG recognises the importance of the DTT platform and the need to provide certainty for investments in broadcasting infrastructure. Therefore RSPG recommends that the frequency band 470-694 MHz shall remain available for DTT in the foreseeable future, i.e. 2030.

Qualcomm agrees with the RSPG that certainty is required for the DTT platform. However, as currently formulated, the paragraph seems to restrict the DTT platform to its current implementation, i.e. High Power High Tower networks with DVB technology. Qualcomm recommends to adopt the following wording:

RSPG recognises the importance of the DTT platform and the need to provide certainty for investments in broadcasting infrastructure. Therefore RSPG recommends that the frequency band 470-694 MHz shall remain available for DTT ***and its evolutions*** *in the foreseeable future, i.e. 2030.*