

## **bmcoforum response**

### ***to the RSPG public consultation on “The introduction of Multimedia Services in particular in the frequency bands allocated to the broadcasting services”***

#### **Background and bmcoforum**

The **bmcoforum** is an industry forum with 61 major organisations representing all parts of the value chain of mobile broadcasting including broadcasting operators, mobile telecommunication operators, content providers, chipset manufacturers, infrastructure and handset manufacturers etc. The **bmcoforum** industry has managed to come together and to develop a framework for deployment of mobile broadcasting in Europe to the benefit of the European television consumers. Reception and use of television is changing rapidly with the digitisation of the technology and mobile broadcasting is definitely one of the key market segments in the media offerings in Europe. Basically the consumers in particular for the younger segment, are moving away from ‘Sofa-TV’ in search for portable, interactive personalised TV.

**bmcoforum** sees a concrete market opportunity for such services now commercially available since 2<sup>nd</sup> quarter 2006 in some countries and that will be widely deployed in many other countries within the next years.

With the strategic initiatives of the **bmcoforum** members the digital mobile broadcasting services are ready for commercial implementation in Europe. A number of test and pilot systems have been developed all over Europe and technical as well as commercial experience from these pilots is now used as base for the development of commercial operational systems which are rolled out in a number of European countries.

The **bmcoforum** has provided a number of contributions and supportive documents to the RSPG, the European Commission and the CEPT administrations in the context of frequency planning and spectrum strategies for the RRC-06 as in particular the UHF bands IV/V is in our key focus as the preferred bands for market entry of mobile broadcasting.

In addition to the RRC-06 frequency planning for the VHF and the UHF broadcasting bands it is important to underline the need for access to the L-band (1452-1479.5 MHz) in some areas where access to VHF and UHF bands not possible in the short to medium term.

The mobile broadcasting technologies considered for commercial use by **bmcoforum** members are those standardised within ETSI and therefore based on the deployment of T-DAB and DVB-T channels where the physical layer of the mobile platforms are the same as for T-DAB and DVB-T and thus the frequency planning criteria in terms of system variants and technical parameters are basi-

cally the same as for the traditional fixed receiver television services. As mobile broadcasting requires indoor reception the network configuration may be different dependent on the particular choice of network by the operator. To ensure technology neutrality the **bmcoforum** also suggests other technologies such as DMB-T and Media-FLO to provide mobile broadcasting. These technologies will be able to operate within an 8 MHz UHF DVB-T-channel in accordance with the frequency planning at the RRC-06 and the procedures for envelope masks as presented to the RRC-06.

Dependent upon the modulation and the system variants chosen the mobile broadcasting technology envisage up to 25 (DVB-H up to 40-50) live TV-channels as well as streaming audio channels to be distributed to mobile and hand portable devices. Return channels are envisaged within the existing mobile telecommunication channels GSM – GPRS – 3G etc and it is therefore not necessary to allow for these channels within the broadcasting bands.

With mobile broadcasting systems as provided by the **bmcoforum** members the convergence between broadcasting and telecommunication type of services will take place within the terminal using different systems and frequency bands and not in the mobile broadcasting network itself.

The **bmcoforum** appreciates and agrees that the topic of multimedia services largely speaking mobile broadcasting services in the broadcasting bands will have to be considered as part of the process to digital switch-over and is closely related to the WAPECS Opinion advocating for more flexible approach to spectrum management.

Even if a number of European countries have started roll out of mobile broadcasting services in particular within the UHF bands the necessary contiguous and dedicated spectrum is not yet available for nation wide systems prior to the digital switch-over. Initial mobile broadcasting implementation plans are therefore developed based on regional and local coverage in high density areas where spectrum may be made available. With the digital switch over it is envisaged to develop a minimum of 2 (two) nation-wide coverage's (MUXes) for mobile broadcasting in order to allow for a competitive market in Europe both in terms of technology and services offering. Actually, **bmcoforum** considers that the timeline availability for each of the 2 dedicated multiplexes could also be different.

The **bmcoforum** agrees that in particular the content regulation for broadcasting is complex. But especially because of this complexity it should be ensured that the European spectrum policies provide spectrum for new mobile broadcast services which should be seen as a new opportunity comparable to GSM, for European industry.

The **bmcoforum** appreciates the opportunity to comment on the international regulatory context of mobile broadcasting and would like to provide the following comments to chapter 3 of the draft RSPG Opinion on the use of frequency bands for mobile broadcasting and multimedia services.

### **VHF Band III (174-230 MHz)**

The VHF band is already in operation for some T-DMB services in Europe and may be further developed for this purpose. The VHF band is, however, limited in its capacity. With one DVB-T layer and 2-3 T-DAB layers in the VHF band as required by administrations at RRC-06 and taking into account other services than broadcasting in the frequency planning the availability of spectrum for T-DMB will be limited and will not allow for a competitive environment for mobile broadcasting in the longer term.

The allotment planning and the envelope implementation mask concept in general provides for flexibility in the implementation of other services than T-DAB and DVB-T within the plan but the spectrum available in the VHF band and the fact that most of the band is planned with 1.75 MHz channels limits the use of this band for nation-wide mobile broadcasting systems.

For interactivity associated to mobile broadcasting systems in the VHF band such as the ones mentioned above the return channel will use traditional mobile telecommunication channels such as GSM, GPRS, 3G etc. and therefore allocation of spectrum for the return channel with guard bands within the broadcasting band is not relevant.

### **UHF Band IV/V 470-862 MHz**

The UHF bands IV and V are the optimal bands for mobile broadcasting both from a propagation/ coverage point of view and from a network cost perspective. However, as the range of content is likely to reflect population density, much more spectrum is required in city and urban areas than in rural areas. This has an impact on the optimum spectrum use in all bands.

The frequency planning configurations chosen by administrations are to some extent linked to fixed network reception with rooftop antennas. Even if many administrations have chosen the RPC2 providing for mobile outdoor reception this is still not providing for the indoor coverage which is needed for personalised TV reception on portable equipment. The planning configurations chosen does, however, not prevent mobile broadcasting networks to be developed but the network costs for full national coverage with portable indoor reception will be much higher.

It should be underlined that for some of the technologies for mobile broadcasting in the UHF bands such as the DVB-H, the technical criteria for the frequency planning are the same as for DVB-T. The physical layers waveforms of these mobile broadcast technologies are similar to DVB-T for assessing potential interference and technical rule compliance i.e. uniform power density and identical bandwidth. In addition these technologies are IP compatible which is not the case for DVB-T. Either technology can be deployed in the existing 8 MHz television channel plan without special guard bands or any other interference mitigation measures.

As mentioned for the VHF band, return channels to provide for interactive television reception with DVB-H will use the existing mobile telecommunications systems GSM, GPRS, 3G and therefore the issue on return channels with guard

bands etc. within the broadcasting bands as mentioned in the consultation document is not relevant for mobile broadcasting with DVB-H

As the return channel may be chosen within the 900 MHz GSM bands until full implementation of 3G networks in Europe the frequency bands above 750 MHz (above channel 54) can not be used for mobile broadcasting because of technical filtering within the terminal. It should therefore be requested that administrations in the arrangement of the national MUXes take this into account in order to allow for 2 nation-wide MUXes with channels below 750 MHz only.

This will have no influence on the possibility to use MUXes for DVB-T networks but will allow for mobile television on those MUXes when the political decision to allow this is taken. If an already deployed DVB-T MUX had to be relocated to other channels this would have some implications for the end users (e.g. manual channel scan on the DVB-T receiver). These implications would occur as well, if a DVB-T MUX had to be relocated as a consequence from the RRC-06 re-planning.

As previously mentioned in **bmcoforum** contributions to the RSPG the immediate spectrum requirement to provide mobile broadcasting services in accordance with the increasing market demands is at least one dedicated technology neutral UHF multiplex for mobile broadcasting in regions and areas with the highest consumer demands to be provided in 2007 and 2 national coverage multiplexes in 2008 which are needed in accordance with the growing market demands and to facilitate a competitive framework.

The current situation is that in a number of European countries UHF services with mobile broadcasting are being developed with regional and sub regional coverage for the high density areas. In some countries nation wide mobile broadcasting systems are currently being rolled out in the UHF bands for launch of commercial services as early as 2006.

The need for other frequency bands such as the L-band (1452-1479.5 MHz) is also considered especially in countries where the main access to UHF spectrum will only be possible after the digital switch-over in 2012. For European national mobile broadcasting networks the UHF bands are still the optimal and preferred solution to meet the customer demands.

**Therefore, it is recommended that the RSPG and the European Commission as a result of the RSPG consideration of this topic and on RRC-06 outcome will provide for regulatory certainty by reliable frequency designations for mobile broadcasting in the UHF bands both for the initial services and for the full commercial implementation prior to the digital switch-over.**

### **L-band 1452-1492 MHz**

As mentioned above the L-band is seen by the **bmcoforum** as a complementary frequency band that might be deployed for mobile broadcasting such as T-DMB and DVB-H in countries where the main access to UHF spectrum will only be possible after the digital switch-over.

The **bmcoforum** agrees with the limitations of the L-band mentioned in the consultation document (1.75 MHz channels) and that those have recently been planned for the Maastricht agreement, which will then need to be changed. An international procedure for providing 5 MHz channels within the L-band in a European wide plan if it were to take years and would therefore be too late for a short term commercial deployment all over Europe. Furthermore the band 1479.5-1492 MHz is allocated for S-DAB in Europe and the first licenses have already been issued.

The band 1452-1479.5 MHz is, however, generally available and could therefore be used for introduction of mobile broadcasting without excluding DAB. The **bmcoforum** would therefore support the RSPG view that this valuable European spectrum slots should be reorganised as soon as possible to allow for European wide mobile broadcasting.

The L-band will be used in some countries for mobile broadcasting supplemented with UHF spectrum as relevant. Also in this band the uplink transmission will be covered by mobile telecommunication systems such as GSM, GPRS and 3G.

### **Other frequency bands**

The **bmcoforum** has considered the application of other possible frequency bands such as the IMT-2000 TDD bands and satellite bands but more frequency bands would increase costs and complexity both of networks and terminals design, therefore these frequency bands should not be used for mobile television service offerings. The bands could, however, be used for video streaming and MBMS as it has already been tested by some 3G operators and it is under consideration in 3GPP.

Technologies considered in this contribution are typically intended for broadcast transmissions (one-to-many) and should therefore preferably be accessing frequency bands that allow for an optimum broadcasting network design and service quality.

### **Conclusions**

The **bmcoforum** agrees that mobile broadcasting is a promising new type of service fostering growth and innovation in Europe. The RSPG should therefore provide the necessary regulatory certainty by reliable frequency designation for mobile broadcasting in the UHF bands. The use of the L-band for mobile broadcasting services should be seen as a complementary solution to the UHF bands in order to support a fast market take up of this service in countries which do not have and UHF option.

The **bmcoforum** also supports the RSPG conclusion that new licenses for mobile broadcasting should be issued and that existing broadcast licenses should be reviewed to allow for – as necessary – mobile broadcasting multimedia services in the existing broadcasting bands on a technology and service neutrality basis. It is further supported to limit constraints and obligations for mobile broadcast-

ing to the minimum required to enable optimal competition on the technology and the service side – both factors of increased innovation for the best user experience.

**On frequency availability the RSPG is kindly invited**

1. to agree that UHF spectrum should be the preferred band designated also to mobile broadcasting;
2. to provide the necessary regulatory certainty for availability of spectrum within the UHF bands for mobile broadcasting on a European level both prior to and after the digital switch over;
3. to ensure that the UHF bands are in focus for mobile broadcasting systems and that other bands such as the L-band are used for complementary solutions where the UHF bands are not yet available;
4. to provide for a smooth and easy introduction of mobile broadcasting in Europe with limited constraints and obligations including changes to existing broadcasting licenses as necessary;
5. to consider also the use of the L-band for mobile broadcasting services in countries where the main access to UHF spectrum will only be possible after the digital switch-over