

**RADIO SPECTRUM POLICY GROUP
OPINION ON**

**The Introduction of Multimedia Services in particular in the frequency bands
allocated to the broadcasting services**

FINAL - 25 OCTOBER 2006

1. Introduction

This paper represents the Radio Spectrum Policy Group's (RSPG) response to the Request for an Opinion on the introduction of multimedia services in particular in the frequency bands allocated to the broadcasting services (e.g. mobile TV). As the digital dividend could be used for the introduction of such services, this opinion should be seen as complementary to the work undertaken in the development of an RSPG Opinion on spectrum implications of switchover to digital broadcasting as published on 19 November 2004 (Document RSPG04-55 Rev final).

The RSPG Opinion on spectrum implications of switchover to digital broadcasting pointed out the important potential of the "spectrum dividend". The main conclusions of the RSPG Opinion on the spectrum dividend are:

- Member States should, given the diversity in needs and objectives, be able to allocate any dividend to such services that best serve their demands.
- Potential new services include a number of alternatives such as:
 - Increase the number of programme services and/or enhance the TV experience (e.g. multi-camera angles for sports, individual news streams and other quasi-interactive options that are accessed using the remote control)
 - Deliver services with higher technical quality (notably HDTV) or to portable and mobile receivers
 - Enable electronic communication services other than broadcasting.

Therefore, the RSPG proposed further European activities for determination of the spectrum dividend and the description of foreseen national uses of the spectrum dividend.

Furthermore the RSPG recommended that these national responses should be evaluated at the policy, technical and spectrum management levels in order to identify the potential for, and benefits of harmonisation.

This outcome of the RSPG Opinion on spectrum implications of switchover to digital broadcasting formed the basis for the work of the RSPG Working Group for the introduction of Multimedia Services.

Since the adoption of the Opinion on Digital Switchover the Commission has taken the issue forward through the publication of several documents (i.e. Communications from the Commission (COM(2005)204 and 461)). Furthermore the RSPG has adopted an Opinion on Wireless Access Policy for Electronic Communications Services – WAPECS (RSPG05-102), which advocates a more flexible approach to spectrum management in which a range of electronic communications networks and electronic communications services may be offered on a technology and service neutral basis, provided that certain technical requirements to avoid

interference are met, to ensure the effective and efficient use of the spectrum, and the authorisation conditions do not distort competition¹.

In the area of multimedia services many field trials of mobile TV technology have already been conducted. Commercial services have already been introduced in Korea and are planned in the United States, Finland and other countries. In Germany frequencies had already been assigned to deliver services to customers during the FIFA World Cup. Furthermore multimedia type services are already available as an integral part of mobile service offerings (i.e. IMT-2000). There is high interest in introducing multimedia services in the traditional broadcasting sector as well as in the value chain of other electronic communications services such as mobile services (i.e. equipment manufacturers, operators and content providers). A number of operators have conducted field trials, and have generally reported positive results, showing that consumers may value these types of services. Furthermore broadcasting services, representing an integral part of multimedia services, are converging with mobile services. Future hybrid network configurations containing both services will therefore need to be taken into account.

In this Opinion, “multimedia services” is seen as the coming together of the traditional broadcasting (point-to-area-coverage) and communication services (one-to-one) in a mobile environment. This convergence will take place within the terminal using different systems and frequency bands and not only in the networks themselves.

Multimedia services should not be understood only as traditional broadcasting over mobiles. The video component will appear in many services – not only through broadcast delivery. Furthermore, the evolution of usage shows a growing demand for interactive functionalities and on-demand rather than pure and traditional broadcasting (which does not mean that the return channel needs to be provided in the same frequency band).

Broadcasting technologies are more appropriate for content with a high number of viewers, allowing a more effective use of the spectrum. One-to-one communication technologies are more effective for contents to be delivered to fewer numbers of viewers. Their combination to provide multimedia services needs to be dynamic, particularly as these services are emerging.

One of the key questions as outlined in the above mentioned documents is the use of the digital dividend for applications of multimedia services as a direct consequence of switchover to digital broadcasting. The availability and supply of high quality multimedia services with attractive new features could bring significant benefits to consumers on a pan-European basis.

The use of spectrum for broadcasting is typically subject to complementary legislation, i.e. electronic communications legislation and content legislation. The borderline between these different types of legislations is becoming increasingly complex on account of the convergence in electronic communications where any service can be delivered over any network, one example

¹ This is without prejudice to the services pursuing identified general interest objectives. See for example recital 6 of the Framework Directive.

being IPTV. Furthermore, the review of the television without frontiers directive currently being undertaken is expected to cover all the audiovisual media services.

The introduction of multimedia services is an issue that is currently high on the agenda for many parties. Complementary to the development of a strategy regarding the digital dividend, and the consideration of WAPECS, the RSPG has identified and addressed various ways in which the introduction of multimedia services could be facilitated, in particular in the frequency bands allocated to the broadcasting services. The RSPG has also identified various constraints applying to those bands and possible means of alleviating them.

2. The Public Consultation

Acknowledging the importance of radio spectrum for significant industrial and economic activities and as part of the process of preparing the Opinion, the RSPG undertook a public consultation, in parallel with the ongoing discussion in the RSPG, to seek the views from all interested parties on how to facilitate the introduction of multimedia services, particularly in the frequency bands allocated to the broadcasting services. The consultation was conducted according to Article 5 of the EC Decision establishing the Radio Spectrum Policy Group², via the RSPG website, on 15 May 2006, with a closing date for comments of 14 July 2006.

There were 43 responses to the consultation, representing a balanced distribution of contributions between interested sectors, in particular between broadcasters and mobile operators. The full text of the responses is available on the public RSPG web site³, with the exception of one contribution for which confidentiality has been requested.

The main conclusion of the public consultation is that the proposed Opinion is widely supported. There were no fundamental arguments in the responses that would invalidate any of the main proposals included in the proposed Opinion.

As expected, there were nuances between sectors as far as the emphasis of the comments is concerned. For example, most actors in the broadcasting sector are more cautious than other candidate users of the dividend regarding the potential availability of UHF spectrum for mobile multimedia services, warning that there might be no UHF spectrum left for mobile TV once the digital dividend will have been “earmarked” for more programming and for terrestrial High Definition Television. Mobile operators are unanimously supportive of identifying additional spectrum above 1GHz for mobile TV, but rather divided regarding the specific need for spectrum below 1 GHz, i.e. in the UHF band. Those in favour of using both spectrum above and below 1GHz justified their position by the fact that two types of services will actually be needed: on one hand, video streaming, which can best operate above 1 GHz, would be deployed within the mobile communications infrastructure to accommodate smaller/niche market segments, and, on the other hand, mobile broadcasting, which can best operate in the UHF spectrum, to address

² 2002/622/EC

³ Web address where responses can be consulted on-line:
http://rspg.groups.eu.int/consultations/responses_multimedia/index_en.htm

mass market audiences. Therefore, video streaming and mobile broadcasting are in fact complementary services, and comments suggested to take this into consideration in the Opinion.

The public consultation also revealed that there is a general assumption that mobile multimedia services will be systematically bundled with the mobile telephony/communication function. The case of stand-alone mobile TV (“personal TV”)⁴ was not addressed by the respondents.

Regarding the short term actions included the proposed Opinion, it is interesting to note that there was a sizeable support for opening up of the L-band to a wider range of mobile multimedia service technologies. Several respondents expressed however that access to UHF spectrum should remain the preferred solution, and that the use of the L-band should mainly be a “spare wheel” in areas where there are no other alternative in the UHF band;

The satellite industry expressed concerns with respect to the perspective of allocating (or co-allocating) the complete L-band to terrestrial services, and stressed that satellite services have also an important role to play in the future provision of mobile multimedia services in the L-band, for example to deliver mobile satellite radio.

The community of analogue wireless microphone manufacturers did participate in this consultation to warn against the danger of increased interference that may be caused by the proposed mobile multimedia services. However, this community does not oppose the Opinion itself and constructively offered a continued dialogue with all other stakeholders involved.

Finally, the view was consistently expressed that the Opinion should avoid proposing regulatory changes which could potentially open long periods of uncertainty (such as full blown re-planning), since such uncertainty may discourage investments in the short term.

3. International regulatory context

This Section reviews some of the frequency bands that may be used for the provision of multimedia services, in particular the frequency bands allocated to the broadcasting services, and considers the associated constraints and limitations to the development of these services, and the scope for alleviating some of these constraints and limitations.

3.1 Bands covered by the GE-06 Agreement

The use of the frequency bands 174-230 MHz and 470-862 MHz has been harmonised for digital broadcasting by the GE06 Agreement. The Agreement has de facto harmonised the technical parameters for digital broadcasting and at the same time has introduced flexibility for future systems.

⁴ By stand-alone mobile TV, the case of a mobile TV infrastructure is considered that would not include a mobile communication function like 3G (i.e. TV programs displayed on a portable device other than a mobile handset).

These bands were previously subject to the Stockholm 1961 Agreement (ST-61) for the provision of TV, to the Chester 1997 Agreement for digital television broadcasting and to the Wiesbaden 1995 as revised by Maastricht 2002 Special Arrangements for digital sound broadcasting. As a consequence of the new Agreement established by RRC-06 (GE-06), all these Agreements/Arrangements are superseded from June 2006 in respect of the bands 174 – 230 MHz and 470-862 MHz and there may be a need to formally abrogate them.

Also, the GE-06 Agreement leaves significant flexibility in implementing the Plan:

- the concept of allotment planning provides a high degree of flexibility regarding the location of broadcasting transmitters within the corresponding service area and interference envelope of the entry in the Plan.
- The concept of spectrum mask offers flexibility for implementing broadcasting services with different characteristics or other applications, provided the interference and the protection requirement are kept within the envelope of the corresponding entry in the Plan. If the proposed use exceeds the limits of this envelope, it requires prior agreement from affected administrations.

In spite of these elements of flexibility, some limitations still exist under the GE-06 Agreement, namely:

- The use of these bands for digital services will continue to be constrained until protection of analogue transmissions has ceased, which is generally expected in 2012, but sooner in some countries in the EU. It should however be noted that the date fixed by the Conference is 2015.
- Although the provisions of the GE-06 Agreement enable the provision of other services within the limits of the envelope of an entry in the Plan, it is not possible to notify to the ITU mobile uplink transmissions of any kind in this band. Furthermore such use would require guard bands with television or sound broadcasting, hence make their coexistence and coordination difficult. Although the plan modification procedure provides a suitable framework for administrations to adjust their entries in the plan as future requirements arise, it should be recognised that the flexibility left to administrations for developing the plan has already led to significant variations in the entries, hence in the ability of harmonising usage in the future.
- Technical constraints to the frequency planning may arise to ensure coexistence of broadcasting networks intended for fixed rooftop reception and multimedia networks intended for indoor portable reception.

Although such use is not covered by the GE-06 Agreement, the band 470 – 790 MHz is significantly used by the services ancillary to broadcasting on a secondary basis in accordance with No. 5.296 and this use will have to be taken into account by Member States when considering the possible deployment of multimedia services in this band to establish a proper

balance between content production and delivery, noting that needs for primary services have priority over secondary ones.

It should also be noted that the bands 174-230 MHz and 790-862 MHz are already allocated to the mobile service on a primary basis in some Member States and in countries outside the Union in accordance with Nos. 5.235 and 5.316 of the Radio Regulations.

3.1.1 174 – 230 MHz (VHF band III)

As per the GE-06 Agreement, the use of this band is based on a fixed channel arrangement of 7 MHz bandwidth for digital television and 1.75 MHz for digital sound broadcasting. The GE-06 Plan provides each country with a similar amount of spectrum on the basis of allotments and/or assignments, serving different geographical areas, and which may be combined to provide layers of national coverage. The typical share of each country is 1 national digital TV layer⁵ (7 MHz) and three national digital sound layers (1.75 MHz).

In order to keep the flexibility of responding to market requirements for TV or sound broadcasting, most European countries have planned portable indoor reception for both TV and sound. It will thus be possible to replace the national digital TV layer of 7 MHz by 4 national digital sound layers without any change in the interference pattern thus without any need for coordination.

Overall, the international regulatory framework which results from the GE-06 Agreement provides administrations with the freedom to implement multimedia services in the band using various technologies, such as DVB-H in 7 MHz channels, or T-DMB in 1.75 MHz channels, with minimum constraints, as listed in Section 3.1 above.

3.1.2 470 – 862 MHz (UHF bands IV and V)

In this band, as in the band 174 – 230 MHz, the GE-06 Plan provides each country with a similar amount of spectrum on the basis of allotments and/or assignments, serving different geographical areas, and which may be combined to provide layers of national coverage. The typical share of each country is 7 or 8 national digital TV layers of 8 MHz.

European countries have selected different planning configurations, which correspond to fixed reception, portable outdoor or indoor reception. The choice between these three configurations was made in 2005 and to a large extent based on the need to preserve the operation of existing terrestrial digital broadcasting networks at the date of analogue switchover, but also on the perceived requirement for new broadcasting services (e.g. more TV programmes, enhance quality

⁵ A layer is a term used in planning to identify the rights of spectrum use corresponding to the availability of one digital multiplex service (whether it carries national, regional or local programming) in every geographical area of a country.

or to portable and mobile receivers). This requirement may differ from country to country depending on national strategies, and may be influenced by the penetration rate of cable and satellite services. These have to be taken into account if the appeal of digital television is to enable analogue switchover in a foreseeable future.

Compared with fixed reception, the power level required at reception site is 150 times greater for portable outdoor reception, and 1500 times greater for indoor reception (assuming the technical parameters used in the GE-06 Agreement). The choice made by Member States in 2005 will therefore have consequences on the future ability, within the corresponding country, to implement broadcasting services corresponding to a configuration differing from that selected for the planning. A given choice however, will not rule out moving to another configuration according to market requirements, but it may make it difficult or costly, since it may lead to deploying more transmitting sites, or reducing the number of achievable layers as a result of more difficult coordination.

Overall, the international regulatory framework which will result from the GE-06 Agreement is expected to provide administrations with the flexibility to implement multimedia services in the band 470 – 862 MHz using various technologies, such as T-DMB or DVB-H in 8 MHz channels, with minimum constraints. In addition to the limitations mentioned in Section 3.1 above, the use of the bands 470-862 MHz should take into account the following factors:

- In many countries, the implementation of mobile multimedia services may require departing from the reference planning configuration adopted before RRC-06, hence entail delays and network costs.
- For reasons related to handset design and cost, a minimum frequency separation will be needed between the channels used for multimedia reception (“downlink”) and the frequency used for transmission by the mobile terminal (“uplink”). This is a particular constraint if the 900 MHz band is to be used for the uplink and the 470-862 MHz is to be used for the downlink in the same handset.

3.2 1452 – 1492 MHz (L-Band)

The use of the band 1452 – 1479.5 MHz by digital sound broadcasting is subject to the Maastricht 2002 Special Arrangement, which planned that use with a fixed channel arrangement of 1.75 MHz bandwidth, with the specific characteristics of T-DAB, on the basis of allotments. Few countries have introduced digital sound broadcasting services using T-DAB in this band, and where these services have been introduced, take-up is limited at this stage. The band is potentially available and could be made readily available for multimedia services using T-DAB or other technologies throughout most of Europe. This has already, for instance, been introduced in Germany during the FIFA World Cup.

In relation to the band 1479.5-1492 MHz, ECC/DEC/(03)02 decision designates its use for satellite digital audio broadcasting systems. It has been implemented by 11 EU Member States and another three EU Member States have committed to implement it. Several competing pan-European satellite projects are planned to provide multimedia services to automotive, portable or

handheld terminals in this band. They are expected to use complementary terrestrial components in the same band, to enhance coverage. ITU regulations require administrations to protect the reception of satellite services in other countries, which limits the availability of this band for terrestrial broadcasting services. Furthermore, ITU satellite allocation extends from 1467 to 1492 MHz, and several multimedia satellite systems have been filed making use of this allocation, which could constraint the use of this band for terrestrial services in Europe.

The main limitations arising from the international regulatory context in the band 1452 – 1492 MHz are:

- Mobile uplink transmissions in this band require guard bands with sound broadcasting, hence make their coexistence and coordination difficult.
- The Maastricht Special Arrangement was developed on the basis of the T-DAB system. However, this Arrangement now seems unduly restrictive. It may therefore need to be reviewed to ensure that other technologies and services are not unduly precluded from use of the band.
- The requirement on each country to provide protection for the potential reception of satellite broadcasting services in other countries limits the availability of the band 1479.5 – 1492 MHz for terrestrial broadcasting services.
- This band is used for other primary services in some countries outside the EU, which limits its use by some Member States for multimedia services.

3.3 Other relevant frequency bands not allocated to the broadcasting service

Frequency bands allocated to services other than broadcasting may also be used to provide multimedia services with technologies other than those considered for the bands allocated to the broadcasting service. These include the following:

- The bands identified for IMT-2000 at 2 GHz are available throughout Europe and developments are underway to provide multimedia services as part of current systems (for example MBMS in UMTS-networks). In particular, the bands identified initially for IMT-2000 TDD operation at 2 GHz (1900 – 1920 MHz and 2010 – 2025 MHz) are available for such a purpose and mostly unused across the EU.
- The bands identified for IMT-2000 at 2.6 GHz will also be available in the near future for the provision of multimedia services in many European countries.
- The bands allocated to the mobile-satellite, mobile and fixed services at 1980-2010 and 2170 - 2200 MHz could be used to provide satellite multimedia services to portable or handheld terminals. Competing satellite projects exist in these bands, which may also use terrestrial complements in the same band for coverage enhancements.
- The band 1785-1805 MHz that is currently being investigated as a “flexible band” in the context of the follow up of CEPT work on “Enhancing harmonisation and introducing flexibility in spectrum management”

3.4 Analysis of options

Table 1 shows a simplified summary of the principal spectrum options, highlighting the status of the frequency bands and their respective advantages, including likely timescales and limitations, prospect of Europe-wide availability, and identifying possible action to reduce the constraints.

Table 1 – Spectrum options

Frequency Band	Advantage	Timing of availability	Rules and constraints	Possibility of Europe-wide availability of common spectrum	Possible action
174-230 MHz (Band III)	Coverage	TV spectrum: Many years in most countries (following DSO) T-DAB spectrum: early for countries not having introduced T-DAB or for systems operating within T-DAB data capacity	RRC decisions. Existing license conditions T-DAB assignments/allotments limit technologies Existing T-DAB licenses in some countries Existing analogue and digital TV: licenses in some countries	Low at least until 2012	National action to make licences more flexible
470-862 MHz (Band IV/V) – upper limit varies in some countries)	Coverage. Potentially significant amount of spectrum	Several years in most countries (following DSO)	RRC decisions Proximity of higher channels to 900 MHz 2G spectrum for dual standard handsets Existing analogue and digital licenses for TV Coexistence of fixed-roof top reception and indoor portable reception needs to be considered.	Low until 2012	National action to make licenses more flexible. RSPG is developing a specific Opinion on this frequency band (Digital Dividend).

1452-1492 MHz (L-Band)	Availability. Significant spectrum amount	Early – unused in most countries	Maastricht Arrangement limits to T-DAB (or systems within that mask). Some licensed T-DAB use but very limited. ITU satellite allocation and existing filings in the band 1467-1492 MHz. CEPT ECC/DEC/(03)02 decision for satellite use in the band 1479.5-1492 MHz Restrictions from other countries outside EU limit possible use of this band in some Member States	High	Confirm mask approach Review possibility of accommodating wider-band technologies within Maastricht framework or consider more radical review
1800 MHz (1785-1805 or part thereof)	Availability	Early – at least for 1800-1805	Limited amount of spectrum, if constrained to top 5 MHz Lower part of the band (1785-1800 MHz) is harmonized for SRD.	High, at least for upper 5MHz	Avoid limitations on use
IMT2000 (1900-1920 MHz and 2010-2025 MHz) 2GHz spectrum	Availability	Early	CEPT ECC/DEC/(06)01 decision on UMTS/IMT-2000 Existing UMTS licenses	High	Technical and regulatory investigation.
2 GHz MSS	Significant spectrum amount		CEPT ECC/DEC/(97)03 Decision on MSS	High	Retain flexibility in current discussions
2.5 - 2.69 GHz	Availability by 2008, internationally harmonised, large amount	2008, subject to market demand and national licensing schemes	CEPT ECC/DEC/(05)05 on UMTS/IMT-2000 identifying harmonized utilisation of spectrum in the frequency band 2500 – 2690 MHz for terrestrial	High	

			IMT-2000/UMTS. Some countries prefer to constrain to IMT-2000, some other prefer a technology neutral approach. Rules regarding in-band cross-border coordination and out-of-band compatibility to be developed		
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4. The Opinion of the RSPG

The purpose of this Opinion is to facilitate the introduction of multimedia services within Europe.

- 4.1 The RSPG considers that multimedia services are one of the promising new services fostering growth and innovation among the many that are seeking urgent and easy access to spectrum. In this context, European action to enable the development of multimedia services must be taken in a way that does not distort the use of spectrum as a whole, promotes and does not distort competition, encourages innovation, maximises benefits across the European Union, and does not conflict with national and European content legislation aiming at promoting cultural diversity and media pluralism.
- 4.2 The RSPG considers that any approach to facilitate the development of multimedia services should take into account the Opinion adopted by the RSPG on WAPECS.
- 4.3 The RSPG notes that an opinion on the Digital Dividend is being considered and this may also have to be taken into account in the future development of multimedia services
- 4.4 The RSPG considers that any approach taken at European level to facilitate the introduction of multimedia services must take account of the wide variety of different spectrum bands that could be used and the varying degrees of flexibility that exist in these bands both as to timeframe and availability.
- 4.5 The RSPG notes that existing licences to provide analogue and digital broadcasting services along with legal decisions taken at national level concerning the licensing regime in digital terrestrial television or sound broadcasting may affect the ability to find spectrum to deploy new services. In particular, it may be difficult in many countries to gather substantial and coherent amount of spectrum for mobile multimedia services in the band 470 – 862 MHz before 2012.
- 4.6 The RSPG considers that introduction of multimedia services could be facilitated by:
 - issuing new licenses, or reviewing current licences with a view to broadening their scope, to allow the provision of multimedia services,
 - limiting the constraints and obligations to the minimum required, while taking into account the international coordination, planning and legal framework
- 4.7 The RSPG considers that there are other frequency bands allocated to the broadcasting service which should be investigated with a view to facilitate the deployment of multimedia services in a shorter timeframe (notably 1452 – 1492 MHz, noting that part of this band is available for satellite services).

Other bands not allocated to the broadcasting service also offer the opportunity to provide multimedia services, e.g. the bands allocated to the mobile service at 2 GHz and 2.6 GHz (bands designated for IMT-2000), and the bands at 1980-2010 and 2170 - 2200 MHz for mobile satellite services.

- 4.8 The RSPG notes that the development of multimedia services has so far been left to national initiatives, on the basis of national trials and policies where different solutions and models are tried in parallel in different countries. Since the timescale is different from country to country as well, it is possible to learn from examples and to implement the “best-practice-solution”. This represents the current status and developments in the EU when it comes to the introduction of multimedia services: some Member States are in the process of awarding licences for multimedia services while others have not yet published any such plans. Advantages include the possibility to learn from examples and to implement the “best-practice-solution”. Disadvantages include the fact that this is a long process where the potential benefits of a pan-European solution might take a long time or not be realised at all.
- 4.9 The RSPG considers that several actions could be considered at European level in order to facilitate the introduction of multimedia services, in a manner consistent with the objectives identified above and taking into account the WAPECS Opinion. These actions would enable administrations to issue new licenses in a similar timeframe under a coherent authorisation regime to enable economies of scale, minimizing the applicable constraints, taking into account the expected revised television without frontiers directive.
- In the band 174 – 230 MHz, multimedia services may already be deployed under the GE06 Agreement, using various technologies, as permitted by analogue switch-off, hence no action appears to be necessary at EU level.
 - In the band 470 – 862 MHz, consideration should be given by all Member States to making available a minimum amount of one national layer to allow the provision of mobile multimedia services in the short term, and a second one in the longer term, as requested by market conditions and permitted by analogue switch-off.
 - In the 1452 – 1479.5 MHz band, the Maastricht Special Arrangement should be reviewed to ensure that other technologies and services are not unduly precluded from use of the band.
 - In the bands 1479.5 – 1492 MHz, 1980 – 2010 MHz and 2170 – 2200 MHz, the existing international framework and the work achieved or in progress at CEPT and EU level could enable the deployment of pan-European multimedia services.
 - Although such use is not covered by the GE-06 Agreement, the band 470 – 790 MHz is significantly used by the services ancillary to broadcasting on a secondary basis in accordance with No. 5.296 and this use will have to be taken into account by Member States when considering the possible deployment of multimedia services in this band to establish a proper balance between content production and delivery, noting that needs for primary services have priority over secondary ones.

- 4.10 The RSPG notes that technical constraints to frequency planning may arise between broadcast networks and multimedia networks in the UHF band and considers that studies should urgently be undertaken to identify and address these constraints so as to facilitate the effective use of spectrum^{6 7}.
- 4.11 The RSPG considers that there may also be a need for action at European level to remove unnecessary constraints in current licences for broadcasting, mobile and fixed services in order to enable the introduction of multimedia services. These obstacles can be found in national allocation provisions, in the licensing regime and its legal conditions and in national legislation (both electronic communications and content regulation). In respect of content regulation, any such actions should be addressed in the on-going discussions concerning the review of the television without frontiers directive. Such actions could lead to more flexibility in the use of the spectrum and potential for the rapid introduction of multimedia services under current licenses. One difficulty however, is that licences differ from country to country thus there can be no one-size-fits-all-approach.

⁶ It is required that broadcasting services will not be adversely impacted, as was agreed at RRC-06.

⁷ This issue is being taken further in the development of the RSPG Opinion on the Digital Dividend, in particular pros and cons regarding possible spectrum harmonisation measures.