

RADIO SPECTRUM POLICY GROUP

OPINION ON

**SPECTRUM IMPLICATIONS OF
SWITCHOVER TO DIGITAL BROADCASTING**

Note: please note that information included in the annexes to this Opinion provide supporting material and is therefore not integral part of the body of the Opinion.

FINAL – NOVEMBER 19, 2004

Introduction

This paper represents the Radio Spectrum Policy Group's (RSPG) response to the European Commission's Request for an Opinion on the spectrum implications of switchover to digital broadcasting (document RSPG03-14).

In accordance with the Commission's request, the RSPG has addressed the following questions considering that:

- spectrum use for wireless broadcasting services is harmonised at international level;
- digitisation allows great improvement in spectrum efficiency and market competition, and is therefore supported by the Commission and Member States;
- switchover to digital broadcasting however raises challenges in terms of spectrum management and calls for the revision of existing international arrangements or agreements.

Question 1 - How can co-ordination between Member States on spectrum management, at bilateral and EU level, contribute to a quick and efficient switchover?

Question 2 - In particular, what would be the added value from EU co-ordination ahead of the Regional Radiocommunication Conference starting in 2004 and other international negotiations?

Question 3 - Are greater transparency and technological neutrality of spectrum assignment, notably through valuation and market tools, instrumental to switchover?

Question 4 - What will be the "spectrum dividend" from switch-off, and how should this be allocated to specific services?

Question 5 - Does convergence require more flexible allocation mechanisms than traditional ones, which tightly link frequency bands and individual communication services according to ex ante decisions?

The RSPG has performed a public consultation, and taken into account its results in formulating the Opinion. Details on the public consultation are given in Annex I. The replies to the consultation have been published on the RSPG website¹. The list of documents considered is found in Annex II.

Since the Commission's request for an Opinion, there have been some related developments at international level, notably the study on digital switchover by Aegis et al.² and the first session of the Regional Radiocommunication Conference of the ITU³. This Opinion takes account of these developments and results where appropriate.

General considerations

The switchover to digital broadcasting will lead to a more efficient and flexible use of the radio spectrum. On this basis the RSPG considers that a rapid and effective digital switchover can contribute to reaching the strategic goal set by the European Council in Lisbon⁴.

From a spectrum perspective, digitalisation of broadcasting permits transmission of information using less spectrum than analogue technologies. In economic terms, digitalisation means increased factor productivity of the spectrum that is used today for broadcasting. The effect of using the spectrum more efficiently is that today's analogue broadcasting services can be delivered using less spectrum. That leaves an undecided but considerable amount of spectrum in the relevant bands for more services such as broadcasting or other electronic communications services. This is the so called *spectrum dividend*. The spectrum dividend represents a

1 <http://rspg.groups.eu.int/default.htm>

2 Study on Spectrum Management in the field of Broadcasting - Implications of Digital Switchover for Spectrum Management, Aegis Systems Ltd, Indepen Consulting Ltd and IDATE (2004)

3 <http://www.itu.int/ITU-R/conferences/rrc/rrc-04/index.asp>

4 "to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion".

value in each Member State that could be used to meet economic, social and cultural objectives.

In cases where the market on its own may not facilitate a full and timely digital switchover, market failures occur or market size is limited, there may be a need to consider other approaches.

The main obstacles to a rapid switchover lie in the political and economic arenas rather than in purely technical issues, even though the technical obstacles in some regions should not be neglected.

- Examples of political obstacles are:

absence of political decisions such as national switch-off or political decisions not to set up switch-off dates and a lack of European approach and policy

- Examples of economic/market obstacles are:

a large installed base of analogue receivers, poor consumer demand based on lack of incentives to switch (lack of perceived added value, cost of digital receivers, etc.), a reluctance, based on financial risks, from operators to invest, and the costs and the sometimes questionable benefits associated with switch-on.

The RSPG Opinion

On Member State co-ordination (Question 1)

1. The RSPG considers that coordination between Member States on spectrum management, at bilateral, multilateral (including CEPT), or EU-level, can

contribute to a quick and efficient switchover. Furthermore, the RSPG considers that such coordination is of high importance and should be facilitated and encouraged.

2. The RSPG considers that there are a number of areas where EU-level initiatives can, and should promote and facilitate a coordinated approach to the spectrum implications of switchover to digital broadcasting. The RSPG recommends such initiatives to be taken. Examples are:
 - a. information sharing, collection and distribution of information from and to Member States, such as regular reports on national plans and strategies for digital switchover
 - b. arranging public workshops at which Member States and other stakeholders can discuss and provide guidance on best practices in areas such as bilateral coordination, transition issues, etc.
 - c. promotion of additional services offered by digital broadcasting and advantages of switchover
 - d. analysis and recommendations resulting from a. and b. above.
3. The RSPG considers that a common approach to the transition period and switch-off date would facilitate a rapid switchover in Europe. However, given the differences between Member States and the different approaches taken to the introduction of digital broadcasting, an EU-wide common switch-off date is not possible.
4. The RSPG recommends the creation of a limited number of timetables that Member States could consider for implementation. This would allow national interests and national obstacles to be addressed in an effective framework. Furthermore, a common end to the transition period should be investigated taking into account the results of the Regional Radiocommunication Conference.
5. Other issues identified by the RSPG for Member State coordination at bilateral, multilateral (including CEPT) or EU-level are:
 - a. development of a program for promoting the benefits to the consumer for investing in digital receivers

- b. development of guidelines for allowing Member States to speed up the switchover process particularly when challenged by market failure or limited market size
- c. to consider existing and new initiatives which could lead to mass production and thus lower prices for consumer digital equipment and accelerate the phasing-out of analogue equipment
- d. encourage a coordinated approach on the innovative uses of new technology to share ideas and experiences
- e. giving consideration to ways in which the use of the relevant spectrum may be made more flexible and technology-neutral while taking into account harmonisation objectives
- f. seeking to harmonise the principles of using the bands, taking into account the diverging national interests of Member States.

On EU co-ordination ahead of the Regional Radiocommunication Conference (Question 2)

- 6. The RSPG recommends that the work in preparation for, and during, the second session of the RRC in 2006 should, among others, be aimed at creating maximum flexibility in order to allow future technological and commercial developments. Therefore, the work should be aimed at reaching a decision on a plan that is flexible enough to allow the introduction of both digital broadcasting services and other electronic communications services.

On transparency, technological neutrality and market tools (Question 3)

- 7. The RSPG considers that for each Member State an open and transparent approach to switchover is beneficial, and that a neutral approach to new technologies would be advantageous. In addition market tools can be valuable instruments to deliver a successful switchover policy. However, given the differences in national policy and the circumstances in each Member State regarding the pace at which flexibility and market tools are introduced, the digital switchover should not be made dependent on the introduction of more flexible spectrum management policies throughout Europe.

On the spectrum dividend (Question 4)

8. While recognising the argument for European harmonisation, the RSPG recommends that Member States should, given the diversity in needs and objectives, be able to allocate any dividend to such services that best serve their demands.
9. When identifying potential new services for the spectrum dividend there are a number of alternatives, including
 - a. 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)
 - b. Deliver services with higher technical quality (notably HDTV) or to portable and mobile receivers
 - c. Enable electronic communication services other than broadcasting.
10. Therefore, the RSPG recommends the following issues for Member State coordination during the transition period at bilateral, multilateral (including CEPT) or EU-level;
 - a. determination of the spectrum dividend
 - b. description of foreseen national uses of the spectrum dividend
11. The RSPG recommends that the national responses to item 10 above should be evaluated at the policy, technical and spectrum management levels in order to identify the potential for, and benefits of harmonisation.

On convergence and allocation mechanisms (Question 5)

12. The RSPG recommends that the terms flexibility and technology neutrality in the context of digital switchover should be described and defined.

13. The RSPG recommends that the potential benefits of a more flexible allocation of the spectrum resulting from the digital switchover should be studied.

ANNEX I

THE PUBLIC CONSULTATION

Acknowledging the importance of radio spectrum for significant industrial and economic activities and in order to ascertain the views of spectrum users, the RSPG conducted a public consultation according to article 5 of the radio spectrum policy group decision⁵, via the RSPG website, on 4 February 2004, with a closing date for comments of 15 March.

Scope

The purpose of the consultation was to seek the views of spectrum users on the spectrum implications of digital switchover. Views were sought on the following questions.

- How can co-ordination between Member States on spectrum management, at bilateral and EU level, contribute to a quick and efficient switchover?
- In particular, what would be the added value from EU co-ordination ahead of the Radio Regional Conference starting in 2004 and other international negotiations?
- Are greater transparency and technological neutrality of spectrum assignment, notably through valuation and market tools, instrumental to switchover?
- What will be the “spectrum dividend” from switch-off, and how should this be allocated to specific services?
- Does convergence require more flexible allocation mechanisms than traditional ones, which tightly link frequency bands and individual communication services according to ex ante decisions?”

Responses

27 responses were received from a broad mix of broadcasters, public telecommunications providers, government bodies, industry groups and lobbying organisations. The views expressed reflected largely the particular perspectives of the individual organisations and so it was difficult to define a widely agreed consensus in relation to any of the questions. However, the responses raised a wide range of differing, and interesting, views concerning the various issues.

⁵ 2002/622/EC

Replies to the public consultation were received from:

- Aniel
- ARD
- Association européenne des radios (AER)
- Canal+
- DigitTAG
- EICTA
- Ericsson
- Eurocinema
- European Broadcasting Union
- Finnet, Orange, Radiolinja, Ericsson
- Finnish Communications Regulatory Authority and Ministry of Transport and Communications
- France Telecom
- IPDC Forum
- MTV Oy
- Norwegian Ministry of Culture and Church Affairs
- Norwegian Post & Telecommunications Authority
- Retevision / Tradia
- RTE
- SFR
- Siemens
- TDF
- Telecom Italia
- Telefonica
- Telia Sonera
- Teracom
- UMTS Forum
- WorldDab

Summary of the public consultation

Question 1: How can co-ordination between Member States on spectrum management, at bilateral and EU level, contribute to a quick and efficient switchover?

Summary

The CEPT were effective in delivering multilateral co-ordination on the spectrum management issues at the technical level, but it was felt also that the EU could focus on promoting a more unified policy context for the CEPT and RRC work, including developing a policy “leadership” strategy to encourage early and full switchover and effective re-use of the spectrum across the member states.

Many of the key decisions on switchover were matters for individual member states, but various proposals were made for joint action at the EU level including: promoting the spectrum efficiency benefits of switchover in terms of new economic and cultural opportunities, encouraging a short target window across the EU for switchover completion, encouraging member states to set out clearly

their transition strategy and switchover processes, and harmonising the amount and location of freed-up spectrum and the services it might be used for.

Analysis

It was acknowledged that, ultimately, switchover could deliver significant benefits (even after taking account the costs of transition) in terms of the ability to do more with the spectrum, including delivering more (or more advanced e.g. HDTV) broadcast services in fixed, portable and mobile environments and new converged services, taking advantage of new technologies. The range and extent of these potential benefits differed across the Member States depending on the particular circumstances of the country and the ease with which the processes for switching from analogue to digital could be completed, and over what timeframe.

Many respondents indicated that bilateral co-ordination and action at the EU level should be focused on ensuring that the community gained the full range of benefits from switchover both from the more efficient use of the spectrum (including the impact this would have on the EU economy, innovation, global competitiveness etc.) and from the continuing contribution of the spectrum to the delivery of public policy and cultural objectives.

There was a view that the CEPT processes provided adequate multilateral co-ordination on spectrum management issues and, particularly at the technical level, there was little more that could, or should, be done. The EU could, however, arbitrate as necessary to provide a speedier resolution of any bilateral co-ordination issues that risked holding back the overall pace of transition. There might also be scope for the EU to deliver, promote and protect also European standards and interests worldwide.

At the wider level, the EU role could be focused on promoting a more unified policy context for the CEPT and RRC work, and on defining a “leadership” strategy that encouraged early and full switchover and re-use of spectrum across the Member States. A respondent suggested that this was particularly important in the context of the likelihood that there would be an increasing shortage of frequencies into the future. The EU role could include:

- Promoting a short target window for switchover across the Member States (e.g. 2007-2010) and, for those countries which have not yet begun digital services, target launch windows;
- Encouraging full and clear announcements by Member States about their digital ambitions, their switchover strategies and their switchover dates to give confidence to broadcasters, manufacturers and viewers/listeners in their investment decisions;
- Harmonising decisions on freeing up contiguous block(s) of spectrum and establishing common positions on the spectrum needs of existing and new services that might use the released spectrum;

- Harmonising the spectrum required, in particular, for the introduction of new mobile/roaming and mobile converged services in (some of) the released spectrum.
- Allied to this, promoting a common understanding of the strategic value of new business opportunities (in the whole value chain from manufacturing and service delivery to content) and maximising markets for new products and services and the delivery of economies of scale;
- Encouraging measures across the Union to promote the benefits of digital broadcasting to viewers and listeners;
- Encouraging the development of affordable receivers;
- Influencing, mind-setting and encouraging Member States to deliver switchover to unlock the full value of the spectrum dividend for new services that would add value to the EU economy and society

Having said that, it was noted that most of the key decisions on switchover were matters for individual member states taking account of the markets, and other circumstances, within those countries. However, the EU could monitor and encourage Member States to have a serious will, and a strategy/action plan, for delivering switchover.

Question 2: In particular, what would be the added value from EU co-ordination ahead of the Radio Regional Conference starting in 2004 and other international negotiations?

Summary

Views differed, in the approach to RRC 2006, on whether the EU should take a strong interventionist role to secure early and full switchover across the EU and harmonised release and re-use of spectrum or whether the EU should simply ensure that each member state was able to move to digital at its own pace and had full flexibility to deploy any digital dividend as it thought fit.

The EU needed to develop a cohesive policy framework across member states that balanced the benefits of a “harmonised” approach with the advantages of a more “flexible” approach. It was felt that this was best achieved by gaining a thorough understanding of member states’ objectives, plans and approaches to switchover and redeployment of the released spectrum. This could allow the development of a consensus approach ahead of the RRC based on a clear view of the outcomes that would best deliver the greatest overall benefits to the Union.

Analysis

Some respondents felt that the EU co-ordination role should focus on helping to ensure that the full potential benefits from switchover were delivered, and maximised, and were not unduly diminished or compromised by individual Member States acting in an un-coordinated way. It was suggested that this could be done by ensuring that individual members’ spectrum plans identified, out of

the RRC processes, a harmonised spectrum dividend. This could be allied to the promotion of common European technologies for using the digital dividend, which could also be promoted to the rest of the World. It was acknowledged that while the move to digital broadcasting would be at different paces within the EU, it was felt that a continued uniform use of the frequency bands across Member States would be beneficial.

An alternative view was that, given the complicated and differing situations facing individual countries, each country should have maximum freedom to deal with their own national circumstances and requirements as they saw fit. The important issue was that those countries moving at a faster pace towards switchover should not be held back in re-using the spectrum dividend to realise the full economic and social benefits, while those countries moving at a slower pace should also not be forced to move faster than their individual circumstances require. One way of dealing with this was for the EU to ensure that the regulatory framework was as flexible, and market-friendly, as possible. The EU should therefore promote competition as the preferred means for delivering a policy objective to maximise the effective use of spectrum, and the development of new services and technologies to exploit the spectrum dividend. In this context, the international spectrum co-ordination requirements should not prevent any Member State from full flexibility in its use of spectrum but should focus only on levels of interference that were acceptable across boundaries, irrespective of the technology or service used.

In RRC terms, some respondents argued that the EU should focus on the second part of the Conference, and the intersessional preparations following the, largely technical, discussions at RRC-04. The second part of the Conference would involve more policy, and political, issues and the EU could help by:

- developing a cohesive policy framework across Member States;
- taking a more active role in the development of common positions on transition issues, harmonised approaches to the size and spectrum location of the digital dividend, and determining uses of the released spectrum;
- promoting a thorough understanding and debate about the issues, prior to the second part of the conference, that are relevant to delivering cross-Union objectives. This could involve Member States setting out their objectives, plans and approaches to digitisation and switchover and exploitation of the spectrum dividend. Out of this, the EU could seek to develop a consensus on the strategic and policy guidance and framework that could inform Member States as part of the preparations for the second part of the Conference (and related CEPT discussions.) Allied to this, the EU could ensure the promotion of relevant Union-wide policies concerning the promotion of the single market, prevention of competition distortions and the identification and promotion of new business opportunities.

Some respondents felt that the EU should ensure that sufficient frequencies were made available for digital broadcasting after switchover especially if citizens required higher standards of technical quality (e.g. HDTV) and if this was felt to be a strategic priority across the Union. This might involve, however, sacrificing

choice, mobility and more new services out of the spectrum dividend and a return almost to the analogue situation of one channel delivering only one or two HDTV services for Fixed reception. An alternative view was that the EU should promote the development of the broadcasting bands for mobile and portable services, digital radio and converged mobile multimedia services, using new variants of the broadcast technologies that offered the most effective use of the limited bandwidth. To deliver maximum choice of services and HDTV there was a view that this was best left to other platforms, like satellite and cable, where bandwidth constraints were much less.

Question 3: Are greater transparency and technological neutrality of spectrum assignment, notably through valuation and market tools, instrumental to switchover?

Summary

Market tools were helpful in delivering effective spectrum management especially given the pace of change of technologies and markets, and the development of new, including converged, services that could use the spectrum. These tools were more adaptable, and quicker to respond, than regulation and would help to ensure also the most effective use of any digital dividend as well as fair and equal access to the spectrum for all potential users.

However, in so far as digital TV was a substitute for analogue TV, which delivered a range of social and cultural benefits, it was necessary to ensure guaranteed access to sufficient spectrum, at a reasonable price, to ensure delivery of the non-commercial broadcasting objectives of member states. The analogue TV broadcasters had a key role to play in delivering switchover, and would incur major costs that had to be acknowledged and met, they would also require spectrum for digital services. To do this would require intervention in the operation of market forces. However, generous concessions to the incumbent broadcasters risked them using their influence with governments to inhibit the opening up of the spectrum to wider uses and allowed them to compete unfairly with new entrants (paying full price for spectrum) in non-public service broadcasting markets and/or for converged services.

Analysis

There was a significant range of views indicating that the pace of market and technology change required the spectrum assignment framework to be similarly flexible, technology neutral and adaptable. The convergence of broadcasting and telecommunication services and markets meant that access to spectrum, and the fees charged, should also be fair and equal across all operators who needed access to the spectrum resource in order to deliver networks and services. This would ensure full and equal competition.

There was a suggestion that valuation and market tools provided important signals about the appropriate allocation of spectrum to services and among users. It was noted also that market processes, including spectrum trading, might cope better than regulation with the pace of market and technology change and the resultant spectrum adjustments that would need to take place to ensure that the spectrum resource continued to deliver maximum economic growth across the Union.

However, it was stressed also that digital TV was a substitute for analogue TV and delivered many social, cultural and citizen-related public services. Guaranteed access to sufficient spectrum, at a reasonable price for the relevant broadcasters, was required in order to deliver this requirement. Similarly, the costs that the public service broadcasters would incur in making the transition from analogue to digital delivery had to be recognised. Non-profit making uses of the spectrum should also not be “crowded-out” by market-based competition processes. In this context, the adoption of valuation and market tools might even be counterproductive to delivering switchover.

Having said that, given the increased flexibility that technology is providing in the traditional broadcasting bands and the increasing lack of distinction between broadcasting and telecommunications markets, there was a fear that the more “privileged” spectrum users might compete unfairly with other operators who did not have access to subsidised spectrum. The incumbents might also seek to use their influence with Governments and regulators to deny access to the resource by other users. It was felt that if spectrum was reserved for broadcasting, especially for the incumbent broadcasters, on special terms, then it should be used for that purpose alone (i.e. fixed reception, one way, free-to-air broadcasting) and the operators should not be allowed to compete in areas where operators had to pay market prices for spectrum (including to deliver mobile telecoms and mobile converged services using broadcasting, as well as telecommunications technology). In this context, the EU could ensure that the broadcasting incumbents should not be allowed to use their position to influence spectrum allocations in their favour or the grant of special freedoms to exploit the resource. There was an indication also that, in other sectors e.g. satellite broadcasting the transition to switchover was achieved entirely, and successfully, by the market alone.

There was a suggestion that, for mobile services, there was a need for consistent terms and conditions of spectrum access and use across the Union.

It was suggested that technology neutrality in relation to spectrum assignment should not mean ignoring standards. Open standards were important for the development of spectrum use after switchover, particularly in the context of convergence where a mix of broadcasting and telecommunication standards would be used by a range of broadcast, fixed and mobile operators. Also, technology neutrality was difficult to deliver in the same spectrum; technical efficiency of the spectrum was optimized when the same systems with common performance and planning parameter shared the same band and the same geography (including across national boundaries).

Question 4: What will be the “spectrum dividend” from switch-off, and how should this be allocated to specific services?

Summary

The size of the spectrum dividend would differ between member states depending on their location and number of near neighbours. The use of the spectrum depended also on member states' dependence on cable and satellite platforms and their policies towards the digital spectrum needs of current analogue public service broadcasters.

Many responses cited the spectrum benefits of digital TV and switchover in terms of the ability to replicate the current analogue services in much less spectrum. This created an opportunity (depending on individual member states' ability to deliver the transition easily and/or quickly) to services ranging from more broadcasting to the home, over and above that required to deliver the analogue services (to increase competition with other platforms and also to deliver the services in HDTV quality.) The spectrum could also be focused on delivering broadcast services specifically to portable and mobile receivers. Alternatively, the frequencies could be made available as flexible as possible, leaving it to market processes to determine the services, and the technologies, that the spectrum might be used for (though the candidates were primarily DVB/DAB and UMTS.) There was significant interest in the use of the spectrum for the DVB-H variant of the TV technology for delivering multimedia services (using GSM/UMTS for the return path.) There was also support for ensuring that the released spectrum was harmonised in amount and location across member states and specified for use for mobile (whether broadcasting, telecoms or converged) services.

Analysis

The timing of the delivery of the spectrum dividend would differ among Member States, as would its size, depending on each Member's location and number of near neighbours, the need for spectrum to deliver digital versions of the analogue fixed services, particularly if universal coverage is required, and any additional standard broadcast services for fixed delivery that might be required. Also, the contribution of satellite and cable for the delivery of fixed broadcast services had to be taken into account. The only mention of the size of the digital dividend was a suggestion, with major caveats and uncertainty, that 50-100 MHz could be released across the Union.

There were various suggestions about the use of the spectrum after switchover:

- Once frequencies had been made available to deliver digital versions of the analogue services, frequencies could be used to provide even more traditional broadcast services, including to compete more evenly on choice with satellite and cable. This could be as part of an acknowledgement that most, if not all, the terrestrial spectrum should be devoted to free to air public service broadcasting, including to deliver the public's expectation of more and better

public services. The incumbent broadcasters could also be given additional frequencies to develop new services. This might help also to develop more viable business models for digital television and ensure the continued delivery of public service broadcasting objectives in the digital era.

- At the opposite end of the views, the frequencies could be made available on an open market basis rather than being left to Government or regulator fiat. This would involve using market processes to ensure fair and equal access to the spectrum by fully competing operators who wished to provide networks delivering a range of technologies and services.
- Frequencies might be required to replicate, in broadcasting, the technical quality available from CDs and DVDs and the expectations these were raising in consumers. To deliver the analogue TV services in HDTV, especially to make the most of flat panel displays, could use up all the spectrum.
- Harmonised frequencies below 600 MHz could be allocated to UMTS/IMT-2000 networks to deliver mobile services more cost effectively to low density population areas.
- The spectrum could be harmonised to create mass European markets for new innovations. As the spectrum below 1 GHz was technically best suited for mobile services (including mobile/portable broadcasting, mobile telecoms and mobile multimedia services that require a combination of technologies and spectrum bands within terminals) the allocation could reflect this. More particularly, there was a suggestion that spectrum could be devoted to new variants of the broadcast technologies (including DVB-H, the portable/handheld variant of the standard).
- Continued access to adequate spectrum by broadcast, and other, programme makers could be safeguarded.

Question 5: Does convergence require more flexible allocation mechanisms than traditional ones, which tightly link frequency bands and individual communication services according to ex ante decisions?

Summary

It was recognised that the pace of change in markets, technologies and convergence required a more flexible approach to allocation mechanisms. The current international spectrum framework, while offering technical stability, good technical sharing of spectrum across national boundaries and the potential for single mass markets, could be improved by an approach to sharing spectrum across boundaries based on meeting specific interference criteria. It was felt that, as we move into the digital future it would be almost impossible to identify, in ITU terms, a “Broadcasting” Service and increasingly difficult to differentiate a “Fixed” from a “Mobile” Service.

It was felt that, once the basic spectrum needs of member states for the delivery of public service broadcasting objectives had been delivered, the remaining spectrum should be made available as flexibly as possible, and not dictated by the service definitions, so long as the needs of one country did not inhibit the needs of a neighbour. This pointed to a preference for allotment planning over

assignment planning. Also, this meant that spectrum sharing arrangements between neighbours should be based on equitable shares of spectrum, irrespective of what that spectrum might be used for.

Analysis

It was recognised that convergence and rapid technology evolution required more flexible, and more responsive, spectrum management processes both within countries, and on an international basis. Digitisation of networks, in particular, had loosened the tie between service types and frequency bands and it was suggested that the international spectrum framework should, therefore, be based increasingly on meeting specific interference criteria.

However, it was recognised also that benefits arise from European or global spectrum harmonisation and open standards, especially for roaming services. Similarly, the traditional allocation mechanisms allowed also for technical stability and harmonisation in terms of interference control, channelling arrangements and terminal development for mass markets. In particular, encouraging the use of common technologies in the same frequency bands made effective technical sharing of the spectrum resource between countries.

In terms of the RRC, it was suggested that the planning of broadcasting allotments at the RRC might not provide enough flexibility to cope with the development of new services over the longer term. One suggestion involved ensuring that the final Acts of the RRC were flexible enough to accommodate technological developments that might occur over the period of currency of the Plan, which could be over 20 years.

Once the basic spectrum needs of the traditional broadcasting services after switchover had been dealt with, there was a view that the remaining spectrum should be made available in the most flexible way possible. At a technical level, the respondents favoured allotment planning over assignment planning to allow for maximum flexibility to deliver a range of fixed and mobile networks. Similarly, spectrum sharing among Member States should be based on protection limits, not the use of specific technologies or services, and a wide range of technologies should be allowed to make use of broadcasting entries in the plan arising from the RRC, so long as they meet given interference criteria. This was important in the context of the way in which it would be increasingly difficult in future to separately identify what is a Broadcasting, Fixed or Mobile service.

There was a specific call also for an additional Primary mobile allocation in the 470-862 MHz band to allow for the provision of innovative mobile converged services.

ANNEX II

LIST OF DOCUMENTS CONSIDERED

Radio Spectrum Policy Group Decision (2002/622/EC)

Provisional Rules of Procedure for the Radio Spectrum Policy Group (RSPG03-12)

Request by the European Commission to the Radio Spectrum Policy Group for an Opinion on Spectrum Implications of Switchover to Digital Broadcasting (RSPG03-14)

Responses to the public consultation (<http://rspg.groups.eu.int/Default.htm>)

Summary of replies to public consultation (RSPG04-40)

Study on Spectrum Management in the field of Broadcasting - Implications of Digital Switchover for Spectrum Management, Aegis Systems Ltd, Indepen Consulting Ltd and IDATE (2004)