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## **RADIO SPECTRUM POLICY GROUP**

### **RSPG Opinion on DSM and Framework Review**

## RSPG Opinion on DSM and Framework Review

### Introduction

The Radio Spectrum Policy Group (RSPG) is a high-level advisory group that assists the European Commission in the development of radio spectrum policy. The RSPG is established under Commission Decision 2002/622/EC, which was one of the Commission initiatives following the adoption of the Radio Spectrum Decision 676/2002/EC and it adopts opinions, position papers and reports, as well as issuing statements, which are aimed at assisting and advising the Commission at a strategic level on:

- radio spectrum policy issues;
- multi-annual radio spectrum policy programmes;
- co-ordination of policy approaches; and,
- harmonised conditions, where appropriate, with regard to the availability and efficient use of radio spectrum necessary for the establishment and functioning of the internal market.

RSPG is also playing a recognised role of “good offices” in bilateral cross border coordination.

The European Commission has identified the Digital Single Market initiative as one of its top ten priorities. Towards the end of 2015, the European held a public consultation<sup>1</sup> on the Framework Review, and also invited RSPG to provide its view on the issues raised.

The consultation addresses spectrum policy in two sections:

- Spectrum management and wireless connectivity; and
- Institutional set-up and governance

This Opinion follows that structure, although it presents a high-level contribution as part of the current preparatory work reviewing the Framework, rather than seeking to address the specific questions in the consultation. Some of the questions appear predicated on assumptions for which evidence is not presented, and so the RSPG’s approach here is to give higher level advice, anticipating further contributions on the detailed proposals. The RSPG’s Work Programme includes a further opinion to be developed later in 2016, depending on the progress of the Commission in developing detailed proposals.

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<sup>1</sup> This consultation has closed, but the Commission has asked the RSPG to submit its Opinion by the end of January 2016.

## Spectrum management and wireless connectivity

Radio spectrum is a finite public resource that should be managed in an effective and efficient way. Spectrum management remains to a large extent within the competence of Member States, but strategic planning, coordination and, where appropriate, harmonisation at global and European levels are important to ensure that users benefit from spectrum to the fullest possible extent.

In particular, spectrum is an essential resource for Electronic Communications Services (ECS), alongside other services<sup>2</sup>; and the Commission's focus on the telecoms networks as part of the Digital Single Market means that spectrum is viewed largely in these terms. However, the range of services, applications and users relying on spectrum is far broader than ECS, and the RSPG takes a broader view of spectrum in its work supporting EU public policies<sup>3</sup>; other users of spectrum contribute to the digital economy and to society in general. The broader set of wireless connectivity issues under the DSM would include, for example, connected cars and the Internet of Things. Spectrum management is also necessary for sectors beyond wireless communications, such as scientific applications, radar, etc.

Spectrum is an essential building block for the Digital Single Market and to achieve the connectivity objective of the European continent set out in the DSM; harmonised spectrum has been delivered to market in a timely fashion under the existing Framework

The Radio Spectrum Decision (676/2002/EC) establishes a policy and legal framework in order to ensure coordination of policy approaches and, where appropriate, harmonised conditions with regard to the availability and efficient use of radio spectrum necessary for the establishment and functioning of the internal market.

This Decision – coupled with equipment regulation (for example, the radio equipment directive (RED)) – has provided an efficient tool for the implementation of harmonised technical conditions in Europe. This technical harmonisation supports a 'single market of equipment' with cross-border inter-operability, bringing many benefits including economies of scale in equipment manufacturing (leading to competitive services and prices for consumers) and service deployment; mobility of use; and greater technical efficiency.

Technical conditions and Harmonised standards – developed through the cooperative work between ETSI and CEPT – have led to the successful deployment of various technologies across the EU, including for mobile broadband and Short Range Devices. More recently, it has adopted harmonisation measures in spectrum bands including 1452-1492 MHz and 3.4-3.8 GHz<sup>4</sup>.

The current Radio Spectrum Policy Programme (RSPP) contains the policy objective to identify at least 1200 MHz of suitable spectrum by 2015 for wireless broadband.

<sup>2</sup>See previous RSPG Opinions at <http://rspg-spectrum.eu/rspg-opinions-main-deliverables/>

<sup>3</sup>See RSPG opinion on "future Spectrum Challenges": section "others sectors"

<sup>4</sup>And we anticipate ECS accessing the 700 MHz band and, where necessary to help satisfy the 1200 MHz target in the RSPP, the 2.3-2.4 GHz bands currently under discussion between the Commission and Member States.

The RSPG advised the Commission on how to meet this goal, and the RSPG Draft Opinion on the RSPP (recently under consultation<sup>5</sup>) concludes that the objectives of the RSPP, and in particular the delivery of this 1200 MHz target, have been largely achieved.

The RSPG recognises the need to maintain a focus on harmonisation of relevant frequency bands in order to achieve European Public Policy objectives. However, the Spectrum inventory report records that 30% of the currently-harmonised spectrum resources are not assigned for ECS, despite the existence of EC Decisions.<sup>6</sup> There are various reasons for this, including differences in national demand for different services, the characteristics of different bands, different uses (including public security and defence) and constraints deriving from interference.

Indeed, a comparison of the harmonised spectrum available (or nearly harmonised) in the EU with other global regions in terms of spectrum availability for 4G mobile broadband shows that the EU is not lagging behind other regions; rather it is leading globally. This reflects effective cooperation between Member States in Europe and with the industry within CEPT and ETSI. In particular, Europe is ready to benefit from mobile development with harmonised spectrum for example for Supplemental Downlink or for mobile systems with larger bandwidth. Europe is driving the international harmonisation effort, via ITU and 3GPP. For example, at WRC15, Europe achieved the harmonisation of the frequency bands 1427-1518 MHz and 3.4-3.6 GHz.

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<sup>5</sup>[http://rspg-spectrum.eu/wp-content/uploads/2013/11/RSPG15-621rev-RSPP\\_draft\\_opinion\\_PC.pdf](http://rspg-spectrum.eu/wp-content/uploads/2013/11/RSPG15-621rev-RSPP_draft_opinion_PC.pdf)

<sup>6</sup>See COM(2014)536 on the radio spectrum inventory – foot note 25: Lack of demand has been confirmed by Member States to the Commission within a mutual (pilot) procedure on the enforcement of Article 6, RSPP. It includes the following cases: (i) a licence has been returned to the spectrum regulator, (ii) spectrum on offer has remained unsold during an auction, (iii) there has been no interest shown during a public consultation.

TABLE 1: Harmonised spectrum resources for electronic communications services (mobile) (compared to other regions)<sup>7</sup>

Band	EU8 MHz	USA9 MHz	Australia MHz	Japan MHz	South Korea MHz	COMMENTS
600 MHz		[ex : 70]				USA : incentive auctions planned in 2016
700 MHz	[80]	70	60+[30]	60	[40]	EU : including possible 20 MHz SDL under national option, Aus.: 30 MHz not granted
800/850 MHz	60	64	40	60	60	US : including 14 MHz of SMR spectrum
900 MHz	70		50	30	20	
1.5 GHz	(40) + [50]			70	[51]	EU: 40 MHz "SDL" , 50 MHz candidate after WRC-15 Korea: not included in the Mobile Gwanggaeto Plan 2.0, but APG common proposal to WRC15 to have the bands 1427 - 1452 MHz and 1492 - 1518 MHz identified for IMT
1.7 to 2.2 GHz	270	335	270	220	210+[230]	US: including the AWS-3 spectrum
2.3 GHz	[100]	20	98		60	EU: planned for harmonisation under the LSA approach according to national needs,
2.6 GHz	190	156.5 + (49.5)	190	80	40+[70]+[40] *	USA : 112.5 MHz for EBS (Educational) may be leased under special conditions for WBB usage * Korea: 40 MHz in 2500 MHz band
3.4-3.8 GHz	(400)	[70]	[400]	120 + [280]	[160]	USA : 70 MHz could be licensed (PAL) for mobile broadband under sharing rules
						Japan/Aus. : this band has been proposed for consideration at WRC-15 amongst other, without implementation plan so far
Existing network deployment in the relevant bands	590 <sup>8</sup>	645.5	708	640	390	
Limited network deployment in the relevant bands	(440) <sup>8</sup>	(49.5)				
Possible in near/medium term	[230] <sup>8</sup>	[140]	[430]	[280]	[591] <sub>10</sub>	Korea: only 110 MHz are « secured » additional bandwidth according to the Mobile Gwanggaeto Plan 2.0 (40 MHz in 700 MHz band, 30 MHz in 1800 MHz band and 40 MHz in 2600 MHz band for FDD)
<b>Total</b>	<b>1260</b>	<b>835</b>	<b>1138</b>	<b>920</b>	<b>981</b>	

<sup>7</sup> Reproduced from Draft RSPG Opinion on the implementation of the current RSPP and its revision to address the next period, p69, available at <http://rspg-spectrum.eu/public-consultations/>

<sup>8</sup> Harmonised bands and candidate bands for harmonization according to EC Decisions under Spectrum Decision. Bands in (round brackets) have been harmonized at EU level but not yet fully authorized in some EU countries (see RSPG Opinion RSPP section 3.2.1.2). Bands in [square brackets] are targeted for possible EU harmonization measures potentially up to the number of MHz indicated.

<sup>9</sup> Fragmented approach between technologies : Cellular, Personal Communications Service, Advanced Wireless, 4G – see FCC presentation at the 5 G Workshop – 13 Nov 14

<sup>10</sup> Including future spectrum resources for WiFi

The RSPG notes the rationale for spectrum management and wireless connectivity offered to support the questions on the evaluation of the ECS framework review<sup>11</sup>. In particular, this refers to the following issues:

- *“...the designation of (additional) spectrum to a (new) application or technology in the EU which still requires several steps (first in the European Conference of Postal and Telecommunications Administrations (CEPT), then in the Radio Spectrum Committee) before the Commission can ensure legal certainty in the EU. This iterative process may be particularly burdensome, in terms of costs and delays in "time to market", for innovative new uses, but can also weigh on the ability of existing spectrum users such as wireless broadband providers to expand capacity to meet burgeoning market demand...*
- *...the growing spectrum needs for wireless connectivity are constrained by lack of vacant spectrum and by the high price associated with re-allocating spectrum to new uses... ”*

The RSPG does not share some of the Commission’s views, as we explain in the following sections of this Opinion.

Spectrum planning and management requires anticipation of possible future developments and needs to take into account the current and potential future needs of the many different users of spectrum. Whilst spectrum management remains within the competence of Member States, enhancements to the European regulatory framework for spectrum are generally first triggered by requests to CEPT (which may come from ETSI, from industry, from governmental users of spectrum, or from a Member State). CEPT is well placed to carefully assess and, if possible, satisfy such requests working closely with industry and the member states that make up the membership of CEPT.

In many cases, there may be a need to access spectrum on a harmonised basis (at European or international levels), due to the need to facilitate economies of scale or for other reasons. Such harmonisation requires close cooperation between Member States, including to enable detailed technical study to ensure suitability of spectrum bands and determine usage conditions. This work is undertaken in CEPT and ETSI and is supported by industry<sup>12</sup>. The work recognises the needs of the different sectors that require access to spectrum, noting their different usage requirements, time and return on investments, etc.

Work is ongoing within these fora and with relevant parties to consider opportunities to improve the current cooperation process and, in particular, to try to reduce the timeframes required to deliver harmonised technical conditions and the relevant standards while maintaining the advantages (including technical robustness, openness and transparency) of the current processes.

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<sup>11</sup>See Framework Review consultation questionnaire(now offline) –section 3.4

<sup>12</sup>See the interactive brochure the European regulatory environment for radio equipment and spectrum <http://apps.cept.org/eccetsirel/>

The RSPG believes that the European Commission Directorate Joint Research Centre (JRC) or a service provided by independent experts would not deliver a similar adequate alternative to this process.

Spectrum management is already supporting innovation

The consultation identified the importance of innovation. The RSPG agrees that innovation will be critical to sustaining and growing the Digital Single Market. Wireless innovation is enabled by effective spectrum management. However, regulators do not drive innovation: it is industry that innovates, while regulation provides a framework within which innovation can flourish (noting that inappropriate regulation can also impede innovation).

The current framework for spectrum management and the processes for co-ordination and harmonisation have demonstrably enabled innovation. The co-operation between ETSI and CEPT, and the participation of industry means that the current approach is deliberately ‘bottom-up’; in other words, it can be driven by the demands of spectrum users and policy priorities alike. Although it is small companies that often drive innovation, many will not engage directly in the international discussions. Nonetheless they will benefit from the transparency and openness of the CEPT and ETSI processes. This gives industry the scope to develop innovative new models of spectrum use, such as cognitive technologies, as well as new services and applications dependent upon access to spectrum.

Across the membership of RSPG, there are various national initiatives in place to respond to spectrum demands from small and medium-sized enterprises (SMEs). Generally, new services and economic growth will come from innovators at this level, who may be less equipped to navigate the regulatory environment. Examples of enabling initiatives by national spectrum managers include test-and-trial licences and the establishment of web portals to inform spectrum users of the regulatory process, and facilitate a dialogue with regulators. Trials underway include work on connected cars, on future broadband technologies and on licensed shared access. It would be useful to share national experiences of these initiatives, and the RSPG and/or CEPT can provide a forum for this, at the European level.

The current framework offers the possibility to develop top down approaches where appropriate and justified, and the RSPG is ready to support EU Public policies using spectrum. The current structure allows policy-makers to balance bottom-up and top-down approaches as appropriate. RSPG is of the view that this approach is of the utmost benefit to industry and consumers. Any more centrally-coordinated or top-down approach bears the risk of restricting innovation, either through a lack of flexibility and responsiveness to the demands of spectrum users, or through constraints on spectrum use imposed from a policy perspective, which end up being at odds with the demands of the market.

Harmonisation can enable innovation, and is most likely to do so where it makes spectrum available in a flexible fashion across Europe. But the harmonisation of bands with a set of technical conditions and presumed use could potentially restrict the availability of spectrum for innovation, for example, by constraining the possible

uses of that spectrum. Harmonisation measures should be flexible enough to allow for evolution of technology and market demand.

If small and start-up companies are to experiment with the same technologies that large, global operators are using, then they need to access appropriate spectrum bands, in a flexible fashion, and to do so rapidly. Otherwise innovation will be limited to those global operators.

It has also to be noted that the availability of licence-exempt/general authorisation spectrum is one of the simplest and most straightforward ways to foster innovation. Licence-exempt spectrum/general authorisation is already well harmonised in Europe and prospect for additional bands is continuing in response to market and technology development.

Some wireless innovation will necessarily rely on cross-border spectrum management, by virtue of the applications and services that are using the spectrum: for example, connected cars. The RSPG will continue to support such initiatives, and has already planned work on this in the coming year.

In conclusion, for successful wireless innovation, spectrum must be made available under a clear but flexible framework that either makes spectrum available, or can respond to demand from innovators at a local level, in a timely fashion. This is best accomplished on a case-by-case, band-by-band approach.

Further harmonisation initiatives need to be sufficiently flexible to respond to current and future demand from industry, and also to respond to policy initiatives

With spectrum use driven by innovation of technologies, products and services, and by rapidly changing communications markets, agility and flexibility are key attributes of spectrum management in future.

The present Framework gives a sound underpinning to a flexible approach, through its emphasis on technology and service neutrality: this enables the re-purposing of spectrum use, subject to meeting necessary technical constraints to prevent harmful interference. When considering any evolution of the framework, a prior question should be: *can the desired outcome be achieved by a more effective enforcement of the principles set out in the present Framework?*

The RSPG believes the processes for harmonisation and co-ordination are currently working well to make spectrum available to users. The RSPG as part of that process is able to develop recommendations to support EU public polices using spectrum and the current process under the Spectrum Decision is able to address various demands for access to spectrum and to develop relevant harmonisation measures with the involvement of CEPT, where the industry is deeply involved.

The current processes can involve other bodies as appropriate. There is scope for the processes to evolve, but in any innovation the agility and flexibility of the processes must be preserved or improved-upon. It would be regrettable if a level of process or bureaucracy was added, reducing the agility.

Technical spectrum harmonisation needs to be linked with equipment standards. These are mostly developed through standardisation and industry bodies. The following standardisation process is voluntary: in particular, in the mobile sector, 3GPP develops specifications only, which can then be implemented regionally, with a number of band plan options. At the same time the ITU will consider the appropriateness of using a particular spectrum, for example WRC-19 will aim to identify additional frequency bands for mobile broadband with the capacity for the implementation of 5G. Harmonisation in Europe then ensures the implementation of a band plan with relevant technical conditions that, for example, enable co-existence with other spectrum users, notably in adjacent bands (e.g. the protection of DTT from mobile in the 700 MHz band).

The goal is not the harmonisation of spectrum itself, but the optimal use of spectrum in order to achieve the realisation of national and EU political objectives.

The RSPG supports harmonisation of the radio spectrum when this leads to more efficient spectrum use and is driven by clear demand, and in particular, where the following conditions apply:

- Economies of scale: where the development of equipment to operate in the band relies on the existence of a large market, creating a potential market for services that otherwise would not exist or would struggle to exist;
- Cross-border necessity: where a lack of co-ordination would result in services not being deployed, because the uses of two different spectrum applications on either side of a border results in one or both being seriously impaired; and
- Mobility of services and EU-wide provision: if some services rely on the availability of a specific frequency band or range, this may justify making a harmonised band available across Europe in order to enable services that work across borders.

However there may be occasions where harmonised spectrum is left unused or not heavily used because there are a variety of demands for wireless broadband services among EU countries (e.g. because of size of the national market, differences in population density or significant penetration by wired or alternative wireless platforms rendering further wireless services less important). Therefore harmonisation works best at a European level when there is a clear demand for new spectrum to be made available across all the EU Member States for a particular service or application.

The implementation of the harmonisation measures (designation and making the band available) should take into account the variation in market demand amongst Member states at the time. Some Member States may need this spectrum at a later stage compared to other Member States where the demand is more urgent. In the absence of market demand in a Member State, that Member State could use the spectrum for services that fulfil national needs as long as that use does not constrain the use of services in those Member States who have harmonised their spectrum for the services (usually mobile services) referenced in the harmonisation measure. This should not jeopardize the long term harmonised availability of spectrum for electronic communication services and the resulting economies of scale for equipment operating in any newly identified frequency band.

Where demand for wireless services can already be satisfied by partial use of harmonised frequency bands, flexibility may be required in some Member States through variations in implementation. This applies in particular to electronic communication services. As a consequence, the RSPG considers that harmonisation decisions need to be undertaken on a band-by-band basis. The RSPG is taking account of diverging demands among Member States and made relevant recommendations in its recent Opinion on the future spectrum challenges<sup>13</sup>.

The next generation of mobile services, using so-called 5G technologies, may not follow the historical pattern and instead require a different spectrum management approach, especially in the higher frequency bands (for example, the potential for sharing between operators, and with other users). This is another reason to make agility and flexibility the key features of any future spectrum strategy and any harmonisation initiatives.

The RSPG is ready to address the challenges that 5G will pose to spectrum management; it has already made some recommendations – for example, that already-harmonised bands are re-used to support the initial growth of 5G. The identification of new bands above 24 GHz for 5G will require substantial work (since many are already in use by various applications). Advising on this will form a key part of the RSPG Opinion on 5G, which aims to identify suitable frequency bands with the best potential for harmonisation, both in Europe and worldwide (noting the importance of global harmonisation of spectrum for 5G). RSPG will aim to deliver this opinion before the end of 2017.

#### Awards and authorisations can be improved by best-practice initiatives

The RSPG has recently considered the question of approaches to awards and authorisations of spectrum at length, and our Opinion is currently under consultation<sup>14</sup>.

From our studies, it is clear that one size does not fit all and there isn't one single method of awarding spectrum that could be extrapolated across all Member States or all bands without the risk of significantly diminishing overall consumer benefit and economic value. However, there are some key lessons that can be learnt from across the EU and globally in the approach to designing and conducting awards.

Common to all of these, and of particular importance to stakeholders is clarity, simplicity and regulatory certainty. Both Member States and stakeholders see merit in auctions and other award methods retaining their evolutionary character, with flexibility at the national level in order to take into account specific local circumstances and market conditions. That said, there are likely to be aspects of good practice that will be common across all awards.

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<sup>13</sup> RSPG Opinion on the future spectrum challenges “Implementation of the current RSPG and key issues to be addressed in the next period”

<sup>14</sup> [http://rspg-spectrum.eu/wp-content/uploads/2013/11/RSPG15-619-Draft\\_report-Efficient\\_Awards\\_Use\\_of\\_Spectrum\\_PC.pdf](http://rspg-spectrum.eu/wp-content/uploads/2013/11/RSPG15-619-Draft_report-Efficient_Awards_Use_of_Spectrum_PC.pdf)

The RSPG thinks that consistency in terms of approach across Member States, without being overly prescriptive and coupled with national prerogative to determine methodology given policy objectives and priorities at Member State level, is the optimum way forward. This will provide national regulatory certainty and some consistency across the EU without stifling innovation or dis-incentivising investment with overly bureaucratic approaches.

In particular, the policy objectives of a spectrum award need to be established upfront, in a transparent fashion. Some of these may be common across Member States, but it is for Member States individually to consider their national circumstances, since there will be legitimate national priorities reflecting the competitive dynamics of a national market, the need for particular coverage and connectivity or encouraging competition, for example with a new entrant.

The work on 'best practice' that has begun with the current report on Awards will continue to develop. In particular Member States need to reflect on the best practice advice presented by RSPG. RSPG can build on this work, developing an iterative approach to its best practice guidance, in the light of new experience in spectrum awards obtained both within the EU and globally. Best practice work could consider other aspects, such as the timing of authorisation. Another way of building on the work would be for the RSPG's members, who have broad expertise in designing spectrum awards, to potentially play a role in the peer review of spectrum award designs (on a voluntary basis). This could, for example, be an input into the normal consultation process that Member States will undergo, in preparation for a new award.

It is likely that pan-European awards would result in sub-optimal outcomes in terms of spectrum allocation, in at least some national jurisdictions. This is for the same reasons that a 'one size fits all' approach to award design would not be desirable: it would risk spectrum being allocated irrespective of local market need, and potentially diminish consumer benefit and economic value. There is already the potential for a voluntary approach to pan-national awards under the current Framework. We note in this regard the bilateral approach taken between the UK and Republic of Ireland, allowing a single entity to acquire spectrum in Northern Ireland and the Republic. Moreover, with sufficient flexibility and the enabling of spectrum trading, multi-national use of spectrum can be facilitated even after spectrum awards.

We should learn lessons from the recent 2 GHz MSS experience: pan-EU authorisations can create challenges and result in the effective sterilisation of spectrum, at least on a short to medium term basis. The RSPG notes that only a very small minority of industry stakeholders appear to be interested in pan-EU authorisations.

One issue that has been raised already by the Commission is 'time to market': delays in the release of spectrum. The 800 MHz experience is illustrative of the complexities of releasing spectrum in practice, with twelve derogations being granted. Member States encountered practical difficulties in meeting the dates set for making the band available, mainly due to the time necessary for organizing the switchover from analogue to digital broadcasting or migrating digital broadcasting below 790 MHz and/or negotiations with countries outside the EU. Moreover, the authorisation process was impacted by differences in market demands between EU countries,

leading to difficulties in carrying out the authorisation process by the deadline set of 1 January 2013. Generally, co-ordination and national procedures for licensing and migrating other spectrum users do take time and need to be done in a careful and comprehensive manner, otherwise there may be instances of interference between spectrum users and disruption to other services and applications.

It may be necessary or useful in some cases to have a common deadline for making a frequency band available. The Review of the Framework may consider this matter, taking into account the need to limit or eliminate differences in timing of release in particular cases where this can bring benefits, such as to address cross-border interference, or in the case of a policy imperative.

We are moving away from a model of awarding harmonised bands, towards a more flexible model of spectrum use

The RSPG agrees with the Commission that we need a more flexible approach to using spectrum, and this can be achieved where appropriate through market-based solutions (such as trading and leasing on individual rights of use), and also various forms of spectrum sharing. These should be reflected in spectrum usage rights or relevant legislation.

Other mechanisms to ensure effective and efficient use of harmonised spectrum may also need to be considered, for example rules to withdraw rights of use where spectrum is inefficiently used. The respective provisions of the current Framework need to be implemented appropriately at national level.

The RSPG gives strategic policy objectives to ensure a more efficient usage of spectrum taking into account the needs and characteristics from various sectors. Member States are already developing solutions to rearrange and to re-farm spectrum where appropriate. This is both because the demand for spectrum will intensify, and because it will become more difficult to identify frequency bands for exclusive use. The RSPG's views on these matters are set out in more detail in the report on the efficient use of spectrum and spectrum awards<sup>15</sup>.

The sharing of spectrum between different uses is not a new approach to spectrum management, but it has the potential to be substantially enhanced through new technologies that enable new forms of sharing, and sharing to a much greater extent than previously. For example, cognitive radio, sensing and dynamic databases of spectrum use can be deployed, and there are already trials underway of new forms of sharing at the national level.

One essential regulatory approach for the sharing of spectrum is general authorisation (as provided for by the current Framework). However, various forms of individual/general authorisations (light licensing regimes) and Licensed Shared Access<sup>16</sup> encourage more efficient use of spectrum at the national level. These approaches need to be implemented at the level of Member States, since spectrum demands, the suitability of different bands for sharing, and the sharing conditions to

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<sup>15</sup>[http://rspg-spectrum.eu/wp-content/uploads/2013/11/RSPG15-619-Draft\\_report-Efficient\\_Awards\\_Use\\_of\\_Spectrum\\_PC.pdf](http://rspg-spectrum.eu/wp-content/uploads/2013/11/RSPG15-619-Draft_report-Efficient_Awards_Use_of_Spectrum_PC.pdf)- see sections 6 and 7 in particular

<sup>16</sup> As defined by RSPG, see RSPG Opinion on Licensed Shared Access, RSPG13-538

protect other users, will all vary according to local circumstances. With regard to Licensed Shared Access, trials are on-going in a few countries to evaluate the foreseen implementation of LSA in the 2.3-2.4 GHz band by protecting the incumbent users. The efforts of Member States to ensure a proper implementation of LSA in 2.3 GHz band as well as in other bands should be recognised as a possible voluntary approach that is consistent with the current Framework.

There is need to maintain national flexibility to respond to the demand with the authorisation framework. RSPG recognises that authorisation is a national issue. The approach based on general authorisations and individual usage rights as described in the current framework should be preserved to ensure that Member States should be able to develop national regimes on that basis with some national flexibility.<sup>17</sup>

The future Framework should encourage the implementation of spectrum sharing further, while not destabilising harmonisation that is already working, and we would encourage the Commission to look at solutions that can facilitate and incentivise sharing, leaving the specifics of implementation to be decided at the national and local level. It may be that there could be greater flexibility in authorisation, for example.

More broadly, RSPG considers solutions that can facilitate and incentivise the more flexible, adaptive use of spectrum. The RSPP encourages, on one side, the general authorisation approach. There are moreover options in the ‘spectrum toolbox’ for spectrum used under individual authorisation that are currently enabled, such as trading or leasing, but it may be that these could be encouraged, where appropriate, or enhanced in some way. Where there remain obstacles to a more flexible use of spectrum, the Member States and Commission might consider how these could be removed.

### **Institutional set-up and governance**

#### The broad institutional framework is working and the balance of competencies is about right

As we have already observed, spectrum management remains to a large extent within the competence of the Member States, but co-operation and harmonisation can bring benefits, and this has already taken place under the current Framework. However, it is right that, as well as reflecting EU priorities, in each Member State the national Parliament can determine national policy priorities, and in relation to spectrum management, see these reflected in policy making and regulation. RSPG, with current deep involvement of Member States, is ready to engage with the European Commission in order to support EU public policy while taking into account other sectors’ priorities.

The RSPG is the competent body to assist and advise the European Commission, the European Parliament and the Council on radio spectrum policy issues. In its Communication to the European Parliament, the Council, the European economic and

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<sup>17</sup> See various deliverables: RSPG Opinion on CUS 2008 (RSPG 08-244), ECC deliverables, ECC Report 132: Light licensing, license-exempt and commons, ECC reports 137 introducing greater flexibility in the current regulatory structure with a view to taking forward convergence and harmonisation

social Committee and the Committee of the Regions about “A Digital Single Market Strategy for Europe”, the European Commission identified the need for a strengthened and enhanced role of bodies in which the Member States' authorities are themselves represented such as the RSPG. RSPG appreciates this. The RSPG has made a substantial contribution to European spectrum policy issues in a number of deliverables and will continue to do so, working with its members, but also with other bodies where appropriate, such as BEREC.

The wider institutional framework, consisting of RSC, CEPT, and ETSI, is working to deliver the technical harmonisation and co-ordination in the EU and in the wider region. The RSPG notes a number of successful results for Europe in the recent Member-States-based negotiations at WRC, and is formulating a separate position paper on this, to inform the next round of global negotiations.

Institutions and processes are always able to be improved. We note in this regard a frustration expressed with some aspects of the current process, and the Commission has identified that ‘time to market’ has an institutional dimension, in terms of the iterative process causing delays. We recognise the importance of ‘time to market’ and that there might be improvements possible in the process. However we would recommend a thorough analysis of the cause of any delays. In particular, CEPT has the necessary expertise, transparency of process through public consultation and open meetings, and knowledge of national and local circumstances; and given the recognition of proper national competencies, it is the right body to deal with spectrum in relation to public interests such as defence and security, or those related to culture such as Public Service Broadcasting which are relevant in many cases when considering the possible evolution of spectrum allocation. This would not be achievable if the process was taken forward by JRC or a service provided by independent, full time technical experts, or contracted to another body. But JRC (indeed, any technical experts) are welcome to input to the CEPT process.

The RSPG further notes the potential for more effective action by the current structures in place to enforce the principles in the existing Framework, and in particular by the Commission itself.

#### RSPG is already contributing to the DSM initiatives under its current remit

The RSPG has contributed substantially to policy initiatives furthering the Digital Single Market, most recently in its review of the RSPP (see above), but also for example in Opinions on Licensed Shared Access, Strategic Challenges facing Europe in addressing the Growing Spectrum Demand for Wireless Broadband, and Policy Objectives for WRC-15.

The RSPG recommends continuing with the approach of multiannual policy programmes (RSPP) for spectrum related policy objectives and targeted actions and reviewing/revising these when needed. This is a useful tool for addressing the political dimension of spectrum and involving policy makers and the European Parliament. The RSPG also recommends maintaining a reference to the RSPP in the future Framework.

Looking ahead, and again under the current remit, the RSPG has planned work-streams on a number of critical issues for the DSM, including 5G, and the Internet of Things/Machine-to-machine communications.

RSPG could potentially play a greater role

The RSPG has already proposed in its review of the RSPP that there could be an enhanced role for the RSPG to support EU public policies and their implementation, with the following benefits:

- to support the implementation of the strategic objectives of the RSPP and of EU public policies when spectrum is used;
- to assist the European Parliament, the Council and the European Commission in relations, discussions and exchanges of views with third parties on spectrum issues;
- to support dissemination of best practices on the implementation of regulatory principles supporting European spectrum harmonisation and on spectrum management – this has begun with the work on spectrum awards but should not be limited to that (other potential areas include best practice on re-farming, licence renewal, flexible access to spectrum);
- to deliver position papers on the communications, reports and draft regulations proposed by the European Commission on spectrum issues; and
- to advise the European Parliament and the Council, where needed.

The Framework Review presents an opportunity to re-examine the approach to spectrum management across Europe, which coincides with an opportunity for Europe in terms of spectrum management, following the WRC-15. The RSPG played an important role in adopting Opinions and helping to facilitate European preparations for WRC-15 and we would anticipate adopting a similar approach for WRC-19. In particular:

- RSPG will develop an analysis of the results of WRC-15 on the common policy objectives and consider how best to preserve the EU interests in the preparation of WRC 19 (see RSPG Opinion on WRC 15).
- RSPG recommends applying the principle of sincere cooperation, involving Member States in any cooperation agreements developed with other regions covering spectrum, in order to ensure coherent EU strategic spectrum policy, including in relation to the development of 5G.

The RSPG is ready to discuss the means to achieve an enhanced role. One possibility is to explore more formal mechanisms to enable member states to test and seek advice from RSPG on matters of spectrum management, including aspects of award and auction design, but potentially other areas too. These mechanisms would remain voluntary but could give a greater assurance of best-practice observance than at present.

There may also be a greater or enhanced role that RSPG could take in the formulation of a European spectrum strategy, and in establishing the spectrum policy priorities for Europe. This could potentially – with the appropriate legal underpinning – include the RSPG initiating its own Opinions and for the Commission to take ‘utmost account’ of RSPG Opinions, beyond the adoption of the RSPP (as it is mentioned in the current framework<sup>18</sup>).

End note

This is intended as a high level document, to start the discussion around the spectrum management elements within the Framework. The RSPG looks forward to engaging further with the Commission on the Framework Review, and would welcome further discussions of specific proposals as the Commission prepares them.

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<sup>18</sup>See RSPP Article 9, Framework Directive: ”Strategic planning and coordination of spectrum radio policy”