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Electronic Communications Networks and Services

**Radio Spectrum Policy Group**

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**RADIO SPECTRUM POLICY GROUP**

**Work Programme for 2016 and beyond**

**(Update, September 2016)**



## **RSPG Work Programme for 2016 and beyond**

This document describes the RSPG Work Programme which was adopted by the RSPG#39 Plenary meeting (24 February 2016) as updated at the RSPG#40 Plenary meeting on 8<sup>th</sup> June to include a work item on PMSE.

The RSPG approved its previous Work Programme “2014 and beyond” in February 2014 and had largely finished the work items by the end of 2015.

The original draft work programme was subject to public consultation between 22 October 2015 and 21 December 2015. Respondents welcomed the work items that RSPG identified, and specific comments were made on a number of items: these will be considered by the working groups for those items.

RSPG has therefore identified the following work items to be developed during the next years:

- Digital Single Market (DSM)
  - Review of the Telecoms Regulatory Framework;
  - Advice to the European Commission on spectrum aspects of the DSM;
- Spectrum related aspects for next-generation wireless systems (5G);
- Internet-of-things (IoT) including M2M;
- Intelligent Transport Systems;
- WRC-19 preparation (common policy objectives for WRC-19);
- “Good offices” to assist in bilateral negotiations between EU countries, and
- A long-term strategy with regard to future PMSE spectrum requirements

Due to the need to respond to the European Commission’s public consultation on the Telecoms Framework Review, the RSPG had already agreed to develop an Opinion in advance of this Work Programme commencing; this was adopted by correspondence in January 2016.

## Digital Single Market – Review of the Telecoms Regulatory Framework

### Rationale

The European Commission published/adopted a communication on a Digital Single Market (DSM) strategy<sup>1</sup> on May 6, 2015, including 16 initiatives<sup>2</sup> aiming at improving the Digital Single Market in Europe. This strategy encompasses three areas of separate initiatives<sup>3</sup> with a multi-annual scope. One of the key initiatives is an overhaul of the telecoms regulatory framework which includes proposals for more spectrum coordination and harmonisation of spectrum assignments on the national level.

This DSM Strategy highlights some of the challenges within the current Telecoms Regulatory framework<sup>4</sup> and raises the question of regulatory consistency and predictability across the EU, particularly for radio spectrum and looks at the conditions regarding investments notably in rural areas<sup>5</sup>. The European Commission intends to present in 2016 an overhaul of the regulatory framework focusing on:

- Spectrum coordination and spectrum assignment on the national level
- Create incentives for investment in high-speed broadband
- Ensure a level playing field for all market players
- Create an effective institutional framework.

This Strategy also calls for a strengthening of the institutional framework suggesting an enhanced role of bodies with representation of member states such as BEREC and RSPG.

The European Commission launched a public consultation on the “Evaluation and the Review of the regulatory framework for electronic communications networks & services” until 7 December 2015<sup>6</sup>.

RSPG will publish in February 2016 an RSPG Opinion on “The Review of the Radio Spectrum Policy Programme (RSPP)” and a Report on “Efficient use of Spectrum and Spectrum Awards” which already include recommendations addressing some of the DSM objectives.

RSPG also established some forms of cooperation with BEREC, including a recent workshop on Spectrum awards. However, co-operation with regard to spectrum related aspects of the framework for electronic communications is yet pending.

### Scope of RSPG activity

Taking into account, among others, the RSPG deliverables, including the RSPG Opinion on “The Review of the Radio Spectrum Policy Programme (RSPP)” and the RSPG Report on ‘efficient use of Spectrum and Spectrum Awards’, the RSPG plans:

- Given the time scales associated with the review, to undertake preparatory work on the developing proposals issued by the Commission in its Review of the regulatory

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<sup>1</sup> <http://ec.europa.eu/priorities/digital-single-market/> - COM(2015) 192

<sup>2</sup> [http://europa.eu/rapid/press-release\\_IP-15-4919\\_en.htm](http://europa.eu/rapid/press-release_IP-15-4919_en.htm)

<sup>3</sup> See DSM Roadmap

<sup>4</sup> <https://ec.europa.eu/digital-agenda/en/telecoms-rules>

<sup>5</sup> See section 3.1

<sup>6</sup> <https://ec.europa.eu/eusurvey/runner/TelecomFrameworkReview2015>

- framework for electronic communications networks & services to enable discussions during the legislative process to benefit from the RSPG's expert advice;
- If appropriate and necessary, to issue further opinions and/or reports; and
  - To collaborate with BEREC on spectrum issues in relation to the Framework Review.

This work item may be developed further, as necessary, in response to the Commission's evolving thinking on the Framework Review.

Planned type of deliverable

RSPG inputs (preparatory Position papers, Opinions) on the Telecom Framework Review with regards to spectrum issues.

Time schedule

- First RSPG Opinion: January 2016 (now published)
- Further RSPG Opinions and preparatory position papers: to be decided

## **Spectrum aspects of the Digital Single Market**

### Rationale

As noted above, the European Commission published/adopted a communication on a Digital Single Market (DSM) strategy<sup>7</sup> on May 6, 2015, including 16 initiatives<sup>8</sup> aiming at improving the Digital Single Market in Europe. This strategy encompasses three areas of separate initiatives<sup>9</sup> with a multi-annual scope. One of these is the Telecoms Framework Review.

However, the RSPG recognises the breadth of the Digital Single Market objectives, and that the review of the Telecoms Framework is one aspect only. Moreover, there is presently no body charged with advising the European Commission on strategic spectrum questions from the perspective of the Digital Single Market, on an on-going basis.

This is envisaged as an on-going work item, to complement the specific input RSPG will make to the Framework Review, but not to be limited by the scope and substance of the Framework Review. Rather, the RSPG will offer independent advice on spectrum management to support the on-going development of the Digital Single Market and help the Commission and Member States meet the needs of European citizens.

### Scope of RSPG activity

Taking into account previous RSPG deliverables including those on the Framework Review, the RSPG plans:

- To consider spectrum-related technological and policy issues, seeking inputs from industry, academic and other stakeholders, from the point of view of the European Market;
- To develop strategic advice to the European Commission on spectrum issues, including the development of an approach to spectrum management which supports the DSM and meets the needs of the European market;
- To collaborate as appropriate with BEREC on spectrum issues in relation to the Digital Single Market, looking beyond the Framework Review.

### Planned type of deliverable

RSPG inputs (preparatory Position papers, Opinions), alone and/or in collaboration with BEREC which may be self-initiated or at the request of the Commission.

### Time schedule

- RSPG Opinions and preparatory position papers: to be decided, following an initial proposal to be made by the Working Group.

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<sup>7</sup> <http://ec.europa.eu/priorities/digital-single-market/> - COM(2015) 192

<sup>8</sup> [http://europa.eu/rapid/press-release\\_IP-15-4919\\_en.htm](http://europa.eu/rapid/press-release_IP-15-4919_en.htm)

<sup>9</sup> See DSM Roadmap

## Spectrum related aspects for next-generation wireless systems (5G)

### Rationale

The European Commission launched in December 2013 the 5G Infrastructure Public Private Partnership (5G-PPP)<sup>10</sup> to deliver solutions, architectures, technologies and standards for the ubiquitous next generation (wireless and wireline) communication infrastructures thereby ensuring Union's leadership within the global context. The 5G-PPP released in February 2015 its 5G vision<sup>11</sup>, which also contains considerations on spectrum requirements for access and backhaul, including for wireless broadband above 6 GHz as well as spectrum management methods. Work on 5G specifications has gained global momentum within the ITU (on network standards and spectrum regulation)<sup>12</sup> and the 3GPP (on wireless/mobile standards)<sup>13</sup> with the participation of Member States and 5G-PPP members. The agenda of WRC-15 addressed spectrum for IMT-2020 (5G) systems, and the follow-up activity leading up to WRC-19 is expected to assess spectrum needs and identify appropriate frequency bands on a global scale. In this regard, it is important that Europe develops and proposes its own spectrum strategy to respond to the 5G challenges. Therefore, a coherent spectrum strategy including a roadmap is needed, which addresses human and IoT communications at various levels (connection speed, mobility, latency, duty cycle, reliability etc.), and ensures a smooth transition from currently evolving wireless systems and spectrum usage, ensuring all European citizens are able to access 5G services.

RSPG outlined initial consideration on 5G spectrum issues in its Opinion on the Radio Spectrum Policy Program. RSPG notes that 5G deployment is envisaged from 2020 onwards.

Recent deliverables published in 2015 which have already addressed spectrum challenges arising from the development towards 5G:

- The RSPG Opinion on the future of the UHF band: within this Opinion the RSPG stated that it is too early to assess the effect of the current research projects on the ability of 5G networks to enable efficient delivery of broadcast services in UHF band.
- The RSPG Opinion on WRC 15 invited Member States to support generally a future Agenda item addressing “the spectrum needs for the fifth generation of mobile networks (commonly known as 5G) with the focus above 6 GHz”.
- The RSPG Report on “Awards and efficient usage of spectrum” highlights how the current harmonised spectrum in Europe could respond to some early and future 5G challenges. Europe already benefits strategically from 1 GHz of harmonised spectrum and further spectrum has been identified, to achieve the goal of 1200 MHz of harmonised spectrum set out in the RSPG.
- The RSPG Report on “Wireless backhaul” recognised that some frequency bands that might be considered for 5G mobile radio access are currently used or targeted to be used for fixed links. Sufficient backhauling spectrum is needed to support the growth of 5G. The possible future usage of the same spectrum for access and backhauling appears as a major challenge and shall be addressed by the European Commission and Member States during the coming years.

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<sup>10</sup> [www.5g-ppp.eu](http://www.5g-ppp.eu)

<sup>11</sup> <https://5g-ppp.eu/wp-content/uploads/2015/02/5G-Vision-Brochure-v1.pdf>

<sup>12</sup> <http://www.itu.int/en/ITU-R/study-groups/rsg5/rwp5d/imt-2020/Pages/default.aspx> ,

<http://www.itu.int/en/ITU-T/focusgroups/imt-2020/Pages/default.aspx>

<sup>13</sup> [http://www.3gpp.org/news-events/3gpp-news/1614-sa\\_5g](http://www.3gpp.org/news-events/3gpp-news/1614-sa_5g)

In consequence, RSPG will continue its efforts and contribute actively to the development of Europe's spectrum policy strategy regarding 5G, including bands being studied at WRC, and other spectrum needed to deliver the services to all European citizens.

### Scope of RSPG activity

The RSPG plans to develop a strategic roadmap towards 5G for Europe and make recommendations where appropriate. This should focus on the services to be offered and the goals to be achieved by the deployment of 5G systems. This requires the:

- Assessment of the spectrum related aspects for 5G in the long term, starting from the point of view of specific goals (such as how to ensure that the benefits of 5G-based services are available to all European citizens; or how to deliver wireless broadband in rural areas);
- Consideration of aspects related to system architecture (as wireless network densification, network resilience and convergence), technology enablers and the variety of services (such as automotive, transport/logistics, healthcare, broadcasting, energy management, smart manufacturing/industry, 4.0, etc.). 5G-PPP will be invited to present the status of its work;
- Identification and analysis of spectrum related challenges such as: spectrum sharing, usage and licence conditions, rural areas, policy implementation, incentive regulation, the principle of technology and service neutrality, the reuse of already harmonised spectrum to support the transition towards 5G;
- Assessment/addressing of appropriate frequency bands for 5G, in particular additional bands above 6 GHz:
  - provide a roadmap of their availability taking into account the evolution of spectrum use including access/backhaul convergence issues and the potential of global/regional footprint;
  - focus on and prioritize those bands having the best potential for European and global harmonization;
  - take into account likely variations in demand between and within Member States, noting the need to meet the needs of all European consumers.

RSPG should pay utmost attention to the worldwide development and provide recommendations on cooperation issues with other regions on 5G spectrum<sup>14</sup>.

It is noted that RSPG will focus on actions to deliver common European policy objectives for WRC-19. RSPG will also develop recommendations on Internet of Things. Coordination between those RSPG activities should be ensured, as appropriate.

### Planned type of deliverable

RSPG Opinion (if needed accompanied by a Report)

### Time schedule

- Interim Opinion in February 2017
- Draft Opinion in November 2017/Final Opinion in February 2018

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<sup>14</sup> See cooperation current/future joint declarations with Korea, Japan, China

## **Spectrum aspects of Internet-of-things (IoT) including M2M**

### Rationale

Internet-of-things (IoT) including Machine-to-machine communication (M2M) and Intelligent Transport Systems (ITS) will impact the economic growth and social development. ITS will be considered by the RSPG in a separate workstream, see below. There is a need to strategically review those topics. RSPG is aiming at supporting the on-going transformation at its best in compliance with the EU policies for the digital society and economy, transport as well as innovation and competitiveness.

IoT is used e.g. for remote monitoring, management in warehouses, remote control, telemedicine and telemetry. Additionally within traditional industries, such as logistics (eFreight), automated manufacturing and retail, intelligent objects facilitate the exchange of information and increase the effectiveness of the production cycle. It involves sensors, RFID, Wi-Fi or cellular links. The OECD expects that about 50 billion devices in 2020 will be connected to the internet. Hence the predicted growth of IoT applications would put pressure on the use of existing SRD bands, especially in frequency bands below 1 GHz. As 5G is very suitable for the requirements of M2M which are low latency and high availability it should be considered as important technology for IoT.

Therefore, a need to strategically review the current status on IoT including M2M and ITS with the aim of developing a spectrum strategy has been identified, taking into account the individual requirements.

RSPG has previously addressed the Internet-of-things (IoT) including Machine-to-machine communication (M2M) and Intelligent Transport Systems (ITS) in its report on “sectoral needs”.

### Scope of RSPG activity

Taking into account the RSPG report on ‘sectoral needs’, the RSPG plans to develop a spectrum strategy including:

- A review of “state of the art”, regulatory issues, the provision of access to spectrum and, as appropriate, to address spectrum and connectivity needs for IoT including M2M. Various types of IoT devices and applications should be considered such as smart meters/grids, automated manufacturing and various forms of e-health devices (RFID tags, remote control, etc.). The impact on the sector from 5G should be also addressed.

RSPG will cooperate with relevant entities in developing this strategy.

### Planned type of deliverable

RSPG Opinion (if needed accompanied by a Report)

### Time schedule

- draft Opinion in November 2016
- Final Opinion in February 2017



## **Spectrum aspects of Intelligent Transport Systems (ITS)**

ITS means systems in which information and communication technologies are applied in the field of transport and traffic telematics including infrastructure, vehicles and users, traffic management and mobility management. Many areas within this sector are still at the research stage, but may have a potential to play a significant role in the area of road safety and traffic management. Within the EU Commission Decision 2008/671/EC “on the harmonised use of radio spectrum in the 5875-5905 MHz frequency band for safety-related applications of Intelligent Transport Systems (ITS)” harmonises the conditions for the availability and efficient usage of this frequency band for safety-related ITS. In addition, the frequency band 5855-5875 MHz is available in some countries for non-safety related ITS applications.

Spectrum requirements for transport are evolving rapidly due to the growing need for mobility as well as the increasing level of automation, but it should also be considered in the context of 5G.

In consequence, transport-focussed legislation could benefit from a spectrum strategy that shows coherence across various EU public policy objectives related to spectrum for transport.

- With the advancements in automated driving, vehicle connectivity and C-ITS (cooperative intelligent transport systems) the landscape in the automotive sector is changing towards “connected and automated driving”. This will raise new consumer demands, new services, new players and new business models, just to name a few of the most obvious changes. Relevant spectrum resources in coherence with standardisation will be a core element to support European competitiveness in the global market. RSPG has already concluded, in its previous Report on Strategic Sectorial Spectrum Needs, that the IoT/M2M-sector should forward its spectrum needs via the ETSI-CEPT process.
- In the railway sector, the Railways communications system GSM-R has led to coexistence issues. In the recent years, ETSI and CEPT contributed actively to the process to clarify the solutions to be implemented at national level (coordination between GSM-R and public mobile systems) and by the standardisation (improved GSM-R receivers). Efforts are on-going also at national level. Strategic consideration is needed on the next generation of Railway communication systems to avoid a repetition of this situation. There may also be some broader spectrum considerations for the railway sector, going beyond GSM-R and its replacement.

### Scope of RSPG activity

Taking into account the RSPG report on “sectoral needs”, the RSPG plans to develop a spectrum strategy including:

- A review of “state of the art”, regulatory issues, the provision of access to spectrum and, as appropriate, to address spectrum and connectivity needs for Intelligent Transport Systems, also covering various forms of usage as medium/long term Transport and Traffic Telematics (TTT) applications like remote enforcing and road tolling, car 2 car, “connected/automated car” and various connectivity applications and especially the impact on the sector from 5G.
- Assessing requirements for a next generation rail communication and traffic management system including spectrum issues ;

RSPG will cooperate with relevant entities, e.g. the European Railway Agency, in developing this strategy, recognising that there is a broader set of stakeholders for transport issues.

Planned type of deliverable

RSPG Opinion (if needed accompanied by a Report)

Time schedule

- Draft Opinion in November 2016
- Final Opinion in February 2017

## **WRC-19 preparation** (common policy objectives for WRC-19)

### Rationale

WRC-15 ended on 27 November 2015. One of the decisions taken at WRC-15 was the agenda for WRC-19. RSPG should start to identify common policy objectives on items which are of particular importance for EU policies as early as possible in the process of preparation of WRC-19, similarly to the processes successfully carried out for past WRCs.

Moreover a review of the WRC-15 decisions should provide a follow-up of the common policy objectives adopted in the Council conclusions and assess how the preparation of ITU World Radiocommunication Conferences could be improved in order to update, if needed, the recommendations provided in RSPG Opinion on “The preparation of ITU World Radiocommunication Conferences”<sup>15</sup>.

### Scope of RSPG activity

The RSPG plans to:

1. Review the outcome of WRC-15 including the Agenda for WRC-19 and identify any issues of relevance for EU spectrum policy;
2. Assess the preparation of ITU World Radiocommunication Conferences in order to update, if needed, the recommendations provided in the RSPG Opinion on “The preparation of ITU World Radiocommunication Conferences”;
3. Assist the European Commission in formulating Common Policy Objectives;
4. Identify actions for the European Commission in order to provide political support to promote common policy objectives in regular meetings between EC and non-EU countries.

The working group could propose a separate RSPG deliverable to address the task 2 and propose a revision of the time schedule according to the progress of the work.

### Planned type of deliverable

RSPG Opinion

### Time schedule

- Interim Opinion February 2017
- Draft Final Opinion February 2018/ Final Opinion June 2018

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<sup>15</sup> RSPG09-294 ; [http://rspg-spectrum.eu/wp-content/uploads/2013/05/rspg09\\_294\\_preparation\\_itu\\_wrc.pdf](http://rspg-spectrum.eu/wp-content/uploads/2013/05/rspg09_294_preparation_itu_wrc.pdf)

## **“Good offices” to assist in bilateral negotiations between EU countries**

### Rationale

RSPG “Good Offices” have been established in 2012 to assist in bilateral negotiations between EU countries.

When one or several Member States have difficulties in cross-border coordination or from harmful interference with another EU country, they may request the RSPG Chairman to put the matter on the agenda of a RSPG meeting. They would report their difficulties during the meeting and ask for RSPG to bring its good offices to bear on the issue. RSPG may decide to respond positively to this request and set up relevant actions.

In previous years, a few Member States requested the “Good Offices”. The RSPG “good offices” mainly applied in cases of broadcasting coordination. For one Member State, this was necessary to make the 800 MHz band available for Mobile Broadband. In recent months, a new focus emerged on FM interference.

### Scope of RSPG activity

In the context of RSPG “good offices”:

- The RSPG “good offices” WG should investigate the coordination issues, including harmful interference issues, and propose a balanced approach or solution to the concerned countries.
- The use of the good offices of the RSPG does not provide for any “enforcement” and still relies on the good will of the EU Member States.

### Planned type of deliverable

The results of the working group shall be presented to the RSPG for consideration and the RSPG will report the results to the Commission.

### Time schedule

Depending on the cases – permanent activity.

## **A long-term strategy with regard to future PMSE spectrum requirements**

### Rationale

The Request for an RSPG Opinion from the European Commission reflects the intention expressed by both the RSPG and the RSC that attention should be given to a long-term strategy with regard to future PMSE spectrum requirements in view of possible constraints for wireless audio and video PMSE needs, in particular noting the requirement for high quality of services in case of professional practice.

### Scope of RSPG activity

The RSPG will examine the expected impacts on PMSE services noting the evolution of existing use and taking into account a growing need for sharing of spectrum use. The Commission requests an assessment of the strategic options in terms of providing spectrum access for wireless audio and video PMSE applications that can provide the required quality of services for PMSE applications. On the basis of this long-term strategic assessment, the RSPG should also provide guidance on the relevance of a common "roadmap" to support the audio and video PMSE sector in obtaining access to spectrum taking into account different national needs.

More specifically, the requested Opinion should:

- Assess possible solutions and options for meeting the expected future needs and use of audio and video PMSE applications in a time frame after 2020, taking into account the bands currently in use by audio and video PMSE and the expected spectrum re-allocations within relevant bands (e.g. 700 MHz band), while ensuring a sufficient flexibility and acknowledging that the needs vary greatly between different Member States. Which solutions are sustainable in the long term, taking due account of high quality and latency requirements of certain types of PMSE applications?
- Indicate technological developments and regulatory requirements related to spectrum use which could contribute to meet the spectrum and quality of service demands for wireless audio and video PMSE. In this context consider shared use of spectrum, which could include appropriate and innovative sharing approaches e.g. the availability of geo-location databases with an appropriate geographic reach, the digitalisation of audio PMSE equipment, opportunities in higher frequency ranges, a higher level of certainty than a framework of non-interference and non-protection accessibility of spectrum in identified cases, as well as a common approach on authorisations and opportunities of localised temporary shared use of spectrum in case of large spectrum needs.
- Assess the relevance of a common "roadmap" identifying principles and approaches of spectrum availability for audio and video PMSE. In this context collect Member States' best practices in providing spectrum use with the required level of quality of service and increasingly flexible conditions of spectrum access for wireless audio and video PMSE applications.

In developing this Opinion, the RSPG work should address audio and video PMSE separately and take into account ongoing processes, such as possible new spectrum resources and the outcome of the Licenced Shared Access trials. The timing requested may

be reviewed in the light of developments, such as the outcomes of ongoing CEPT work or the success and take-up of LSA solutions.

Planned type of deliverable

RSPG Opinion

Time schedule

- Interim draft Opinion June 2017
- Draft Final Opinion November 2017