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Electronic Communications Networks and Services

**Radio Spectrum Policy Group**

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## **RADIO SPECTRUM POLICY GROUP**

### **RSPG WP “2014 and beyond”**



### **RSPG Work Programme “2014 and beyond”**

The RSPG agreed in its 31<sup>st</sup> meeting in June 2013 to develop an update of its Work Programme (WP). This RSPG WP has been developed by the RSPG by correspondence and during an ad-hoc meeting on 28 October 2013.

The RSPG adopted for public consultation at the plenary RSPG#32 in November 13 a draft WP. The RSPG improved its draft WP following the public consultation and approved the following final WP at its RSPG#33 plenary in February 19.

The RSPG had approved its WP “2012 and beyond” in June 2012 and finalized it largely by the end of 2013. Following this practice, this update is the basis for future activities of the RSPG for at least the coming year (“2014 and beyond”).

The European Commission presented its proposal for a Regulation concerning the Telecoms Single Market (TSM) to the RSPG on 11 October 2013. RSPG took into consideration the lessons learnt from this Workshop to improve its draft work programme in order to contribute to the development of the telecoms single market in ECS with its own opinions and reports.

Due to the fact that the proposed regulation on TSM will be subject to negotiation at Council and European Parliament during the next months of 2014, the RSPG did not address the possible future role for the RSPG as foreseen by the current proposals from European Commission. It will assess this issue in due time and where appropriate when the future regulation will enter into force. In particular, during 2014, the RSPG will consider any need for a relevant update of the RSPG WP.

The RSPG is composed of high-level governmental experts from each Member State as well as of a high-level representative from the Commission.

## **Long-term strategy on the future of the UHF band in the EU**

### Rationale:

After the World Radio Conference (WRC) 2015 the 694-790 MHz ("700 MHz") frequency band will be effectively allocated on co-primary basis to the mobile service alongside the broadcasting service. Whereas in the EU this band is primarily used for digital terrestrial television, it is already available for use by wireless broadband (WBB) in large parts of the world. Like the 800 MHz band it would allow for wide-area coverage and is therefore considered an attractive candidate band for WBB (See RSPG Opinion on WBB).

In 2012, the European Commission issued a mandate to CEPT to develop harmonised technical conditions for the 700 MHz band in the EU for the provision of WBB, as well as PPDR, and other uses in support of EU-spectrum policy objectives ("EC mandate 700 MHz"). The deliverables of this Mandate may be considered in the case of an EU-level political agreement to re-allocate this band from Digital Terrestrial Television (DTT) to WBB use.

Concerning spectrum coexistence, RSPG published in June 2013 a report on "interference management" providing, in particular, national best practices concerning regulation and/or standardisation which may help to support efficient interference management.

As regards spectrum needs related to sectors other than WBB or broadcasting, RSPG published a report on "sectoral needs"<sup>1</sup>.

Furthermore, RSPG published a report on "*proposed spectrum coordination approaches for broadcasting in the case of a reallocation of the 700 MHz band*". In order to ensure a sustainable win-win situation for sectors as well as consumer benefits, an EU strategy needs to be developed on the future use of the 700 MHz band in the context of the whole UHF band taking into account all political, economic and technical elements.

In its opinion on WBB, RSPG identified issues in relation to the 700MHz band and published issues related to broadcasting in an additional report. It is mentioned that the long term spectrum need for broadcasting varies among Member States. However, several Member States are planning an increase in the number of programmes, a widespread expansion of HDTV, additional mobility and possible introduction of Ultra High Definition TV. RSPG noted that the relative penetration of each platform for TV delivery is highly country-dependent. Possible forms of convergence between various forms of non-linear content delivery (wireless broadband and broadcast) are currently being explored. Most Member States consider that at the moment various platforms complement each other and most countries have stressed the importance of terrestrial TV for free-to-air services and that viability of DTT requires access to sufficient spectrum resources. Both broadcasting and mobile networks – in their next generations - may converge to a certain extent to provide linear and non-linear audio-visual content to mobile devices. At this stage, for stationary reception (such as TV sets), it is currently considered not likely that mobile networks will evolve to deliver broadcasting content to mass audiences next to the existing platforms including satellite broadcasting, cable and IPTV.

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<sup>1</sup> The Report RSPG13-540(rev2) addresses inter alia PPDR spectrum needs as well as related options foreseen at national level.

In the context of the possible evolution in usage of parts of the UHF band, the RSPG should explore the impact on the usage of spectrum by current incumbents including PMSE as well as the more efficient spectrum use.

Scope of RSPG activity:

The RSPG plans to:

- Develop a long term strategy for the UHF band 470 MHz – 694 MHz including a realistic vision for the DTT platform in the context of various technological evolutions of the terrestrial platforms taking into account current incumbent use including PMSE and related migration issues.
- Assess the possible implementation of WBB in the 700 MHz band in the EU, on the basis of the output of the current EC mandate 700 MHz, and develop relevant recommendations, also in the light of international developments.

Planned type of deliverable: RSPG Opinion

Time Schedule: draft Opinion Nov 2014 / Final Opinion Feb 2015– to be reviewed in June 14

## Efficient awards and use of spectrum bands harmonised for Electronic Communications Services (ECS)<sup>2</sup> (with BEREC)

### Rationale:

The RSPG promotes wider availability of wireless broadband (WBB) and, in particular, refer to the bands covered by various EC decisions on electronic communications (see Article 6 RSPG). RSPG published various opinions and reports on Wireless Broadband. The possible spectrum supply to respond to possible future needs for terrestrial wireless broadband has been addressed in the recent WBB opinion which assessed the possible solutions and options for meeting the future demand for wireless broadband services in the time frame 2013-2020. There is an additional need to assess the medium- and long-term spectrum requirements for terrestrial wireless broadband in terms of speeds and coverage both in urban and rural areas (e.g. need for wider (if needed contiguous) bandwidth of 20-100 MHz).

Some Member States already highlighted in previous reports and RSPG discussions that the spectrum needs for specific bands may differ from one Member State to another (see “Addressing situations resulting in underutilisation of spectrum” identified in the previous RSPG WP). This context reveals the need to assess the suitability of the identified bands for different geographical characteristics and market situations (e.g. wide availability of fixed infrastructures), and different usage scenarios so that spectrum is well utilized and future speed and capacity requirements can be met. For example, in one harmonized band (3.4-3.8 GHz)<sup>3</sup>, the band is shared between ECS and other systems and is designated on a non-exclusive basis. In this context, ensuring regulatory certainty regarding co-existence remains essential, as highlighted in the RSPG report on interference management. As regards spectrum needs related to uses other than ECS, RSPG published a report on “sectoral needs”<sup>4</sup>.

Moreover Article 4.8 of the RSPG requires Member States to facilitate the identification and sharing of best practices on authorisation conditions and procedures to increase consistency across the Union. This could cover inter alia existing practices on renewal and new spectrum and other licence conditions, authorization procedures and rules (e.g. auction approaches), incentives to move to efficient technologies (e.g. small cells, LTE TDD, mesh networks, new transmission technology), incentives for freeing up bands, transfer and leasing of spectrum usage rights, reclaiming and alternative use of underutilized spectrum (e.g. 2 GHz TDD spectrum). In particular regarding auctions in the EU there is a large amount of tacit experience and know-how to share among Member States. Other successful assignment procedures have been carried out in Europe that should also be considered. The potential should be harvested under an RSPG umbrella thus improving the quality of national practices. Currently, the Commission proposal for a regulation on the Telecom Single Market is under negotiation at Council and European Parliament during the next months.

On 17 October 2013, BEREC published views on the Commission proposals for TSM regulation. One section covers spectrum issues.

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<sup>2</sup> As defined by Decisions 2008/411/EC, 2008/477/EC, 2009/766/EC, 2010/267/EU, 2012/688/EU

<sup>3</sup> EC Decision 2008/411/EC (on 3.4-3.8 GHz) (planned update based on response to relevant EC mandate)

<sup>4</sup> The Report RSPG13-540(rev2) addresses inter alia PPDR spectrum needs as well as related options foreseen at national level.

Scope of RSPG activity: (In cooperation with BEREC, where appropriate)

The RSPG plans to:

- Exchange views and best practices in awarding spectrum that has been harmonised under the Radio Spectrum Decision in particular in auction design
- Assess the incentive measures to ensure and promote an efficient usage of spectrum (leasing, trading, incentive payments) and new forms of usages (small cells, TDD as fixed links) and to stimulate innovation
- Exchange views and best practices on relevant methods to implement technology neutrality and service neutrality in line with the EU telecom rules in current ECS frequency bands (Deadline beginning 2016) including on withdrawing underutilised spectrum for ECS
- Exchange views and best practices on the duration and timeline for potential new bands which could be made available for WBB<sup>5</sup> in the short and medium term including relicensing of frequency bands already harmonized
- On the basis of the RSPG opinion on WBB and in collaboration with stakeholders, assess regulatory feasibility (e.g. using spectrum sharing, pooling) of key requirements of WBB systems (e.g. with larger bandwidth than 5/10 MHz) in different usage scenarios including both urban and rural areas

In this activity,

- Member States are invited to share views on the foreseen evolution of harmonized ECS bands at national level and national plans on future authorisations.
- Workshop(s) could be organized to collect views from industry on the future usage of ECS bands based on technological developments.
- Common workshops and benchmarks on relevant topics could be organised with BEREC, where the support is needed on competition issues

According to the results of the on-going negotiations on the TSM proposal, the scope of the activity may be reviewed/refined at a later stage.

Planned type of deliverable(s):

- RSPG report(s) (one or more reports could be developed during the next 2 years)- public consultation is foreseen
- RSPG/BEREC workshop(s)

Time Schedule: draft Report May 2015, final Report November 2015

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<sup>5</sup> Future WBB bands under considerations at national level such as 1452-1492 MHz, 2.3-2.4GHz and relevant time plans (700 MHz issue considered mid-term and in relation to « long term UHF »)

**WRC-15 preparation** (common policy objectives for WRC-15)

Rationale:

RSPG adopted an Interim Opinion which identifies the main themes of WRC-15 where there is an EU policy in place. The final draft Opinion will contain additional information on the main themes based on needs and emerging results from studies conducted in the overall framework of WRC-15 preparation, together with the Common Policy Objectives relevant to these themes.

The European Commission may formulate EU Common Policy Objectives for WRC-15.

Scope of RSPG activity:

The RSPG plans to:

- Assist the European Commission in formulating EU Common Policy Objectives;
- Offer guidance to Member States in developing ECPs; ECPs (e.g. distinguishing between European and global spectrum needs)
- 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

Planned type of deliverable: RSPG Opinion

Time Schedule: draft Opinion Nov 2014, final Opinion Feb 15

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

Identification of the need for EU assistance: When one or several Member States have difficulties in cross-border coordination or face harmful interference issues with another EU country, they may request the RSPG Chairman to put the matter on the agenda of an RSPG meeting. They would report their difficulties during the meeting and ask RSPG to address the case in its good offices. RSPG may decide to respond positively to this request and set up relevant actions.

Various « good offices » cases between EU Member States are already on going.

Scope of RSPG activity:

In the context of RSPG good offices:

- The RSPG would request a representative of a Member State, not directly involved and agreed by concerned parties, to chair a working group addressing the matter. This group should investigate the coordination or harmful interference issue 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



## **The review of the Radio Spectrum Policy Programme**

### Rationale:

The first Radio Spectrum Policy Programme (RSPP) has been established by Decision 2012/243/EU of the European Parliament and Council for the period 2012-15. When drafting its proposal on multiannual radio spectrum policy programmes to be submitted to the European Parliament and the Council, the European Commission shall take utmost account of the opinion of the Radio Spectrum Policy Group (RSPG) (Framework Directive (art.8a3)).

The RSPP focuses on harmonisation of the use of spectrum to ensure the functioning of the internal market in the Union policy areas involving the use of spectrum, such as electronic communications, research, technological development and space, transport, energy and audio-visual policies. It sets out policy orientations and objectives for the strategic planning and harmonisation of the use of spectrum in accordance with the Directives applicable to electronic communications networks and services. Those policy orientations and objectives refer to the availability and efficient use of the spectrum necessary for the establishment and functioning of the internal market.

According to the current RSPP, the European Commission published a report on measures adopted pursuant to this Decision by mid April 14. A review of the current RSPP should be done by the end of December 2015.

The next RSPP could play a role in the definition of a long term strategy for spectrum harmonization and in the development of a path to enable the next generation wireless services post 2020.

The RSPG already developed a number of opinions and reports in its WP “2012 and beyond” to support the current RSPP.

Nevertheless, the RSPG considers that it will be appropriate to engage in work regarding the review of the RSPP and to develop relevant recommendations.

### Scope of RSPG activity:

The RSPG plans to:

- Assess the strategic spectrum issues and the need for harmonisation of the use of radio spectrum in the Union to be considered during the next 5 years (2015/20) necessary for the functioning and development of the internal market.
- Develop strategic recommendations to support various Union policy areas involving the use of spectrum, such as electronic communications, research, technological development and space, transport, energy and audio-visual policies.

Planned type of deliverable: RSPG Opinion

Time Schedule: Draft Opinion for Public Consultation (RSPG October 2015), Final Opinion (February 2016)

## **Spectrum issues on Wireless backhaul**

### Rationale

Mobile networks are evolving to respond to an increased broadband usage. To respond to related need for higher capacity and speeds, the densification of mobile networks is under investigation. Against this background, mobile operators are considering various forms of backhauls including wireless ones (point to point, non-line of sight<sup>6</sup>). New forms of base stations are under study by market players: small cells<sup>7</sup>. The small cells intend to provide cellular coverage in a limited range. An increase in the number of wireless backhaul links required for the small cells could then be foreseen. Moreover, wireless backhaul solutions in frequency bands already licensed for Wireless Broadband (WBB) under harmonized technical conditions could be of interest to the current license holders.

Both wired and wireless solutions are able to meet this backhaul market demand. Various technical solutions could be considered by market players to facilitate roll out, reduce the backhaul cost, and to meet the traffic needs such as optical fibre or wireless and fixed links.

Wireless backhaul links are basically deployed through fixed links under the 'Fixed Service' defined in ITU's RR. Nevertheless wireless backhaul is only one application of the fixed service. A fixed service application in the core network should not be considered as wireless backhaul in the scope of this work. In this report, wireless backhaul should then be understood as the intermediate/last wireless link to connect various forms of base stations<sup>8</sup> with either the core network or the backbone network.

Wireless backhaul to deliver higher broadband traffic within the mobile/cellular networks and to the mobile/cellular base stations will face strategic challenges due to mainly:

- Increased wireless backhaul capacity needs for existing macro-cellular sites
- Expected increase number of wireless backhaul links required for the small cells

Various frequency bands for wireless backhauling are already subjected to ECC recommendations which harmonize frequency plans. These deliverables are revised within CEPT if needed and where appropriate (i.e. to introduce new frequency plan for example). According to national demand and circumstances, the frequency bands nationally available for fixed links vary from country to country.

New strategic spectrum challenges on wireless backhaul (non-line of sight wireless backhaul issues, capacity and number of links and its impact on spectrum management, the potential interest of WBB frequencies for wireless backhauling in the context of the service neutrality, etc.) and small cells issues are to be anticipated. These market trends impact the spectrum management which should be assessed for the next 5 and 10 years.

<sup>6</sup> A direct line of sight does not always exist in dense urban

<sup>7</sup> Various definitions exist for small cells: current IUT definition under drafting refers to some criteria to define small cells : power limitation, frequency above 2 GHz, coverage less than 50m, indoor only. "Micro cells" are small cells. Pico cells: "Pico cells" are cells, mainly indoor cells, with a radius typically less than 50 meters.

<sup>8</sup> Macro, pico cells including small cells

Scope of RSPG activity

The RSPG plans to identify and analyze strategic spectrum issues relative to wireless backhaul for mobile networks (lessons learnt, various types of backhaul, trends, needs, etc.) due to:

- higher capacity needs for existing macro-cellular sites
- the densification of base stations and the small cells approach (trends, foreseen impact on spectrum management, non-line of sight wireless backhaul issues) in mobile networks infrastructures

This RSPG activity could include a review of state-of-the-art developments and trends in wireless backhaul in public mobile cellular networks (including use of small cells and mesh networks) including identification of any relevant spectrum sharing and spectrum efficiency issues and an assessment of any implications for spectrum management policies at the EU level.

Planned type of deliverable: RSPG report

Time Schedule: draft report Feb 2015 / Final report June 2015