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Electronic Communications Networks and Services

**Radio Spectrum Policy Group**

**RSPG Secretariat**

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### **RADIO SPECTRUM POLICY GROUP**

#### **Outline of Draft Report on Efficient Awards and use of spectrum bands harmonised for Electronic Communications Services**

**DRAFT**

## **Outline of Draft Report on efficient awards and use of spectrum bands harmonised for ECS**

### Context

Against a background of considering the future supply of spectrum for wireless broadband, the European Commission is seeking the advice of the RSPG on best practices with regard to efficient awards and efficient use of harmonised spectrum.

In particular, the Commission has asked the RSPG to focus on the effect that different elements of awards and related conditions of use have had on the efficient use and is seeking to draw on the experience of Member States of the practical experience of awards to date

Specifically the Commission has requested;

- Based on the findings of the RSPG WBB Opinion with regard to spectrum supply, assess the suitability of the current and potentially future EU harmonised bands for ECS with a focus on usage rights conditions to meet spectrum requirements of future WBB systems taking into account different geographical characteristics, market situations, and different usage scenarios so that spectrum is well utilized and future speed, capacity and coverage requirements can be met;
- Provide views and best practices on spectrum award approaches and related conditions of use with a view to promote efficient use of spectrum and meet the spectrum requirements of future WBB systems. In particular, best practices should be discussed with regard to:
  - Auction approaches and design (e.g. types, rules);
  - Incentive measures to promote efficient usage of spectrum based on market mechanisms (e.g. leasing, trading, incentive payments), incentives or requirements for meeting technical performance characteristics (e.g. small cells, LTE-A, TDD), and further innovation;
  - Regulatory approaches to spectrum sharing and/or pooling with a view to achieve higher transmission speeds and capacity, e.g. through forming contiguous spectrum blocks or carrier aggregation.
  - Relevant methods to implement technology neutrality and service neutrality in line with the EU telecom rules regarding current EU harmonised bands for ECS (with a deadline of 24 May 2016) including taking appropriate measures which could include withdrawing underutilised spectrum for ECS;

- Duration and timeline for potential new bands which could be made available for WBB in the short and medium term including re-authorisation of frequency bands already harmonized;

### Structure of the Report

The Commission's request for a report<sup>1</sup>, requests details around a number of key thematic areas and we have used the detail of that request to suggest a potential thematic structure of the report, including some suggested areas which might be explored. The suggestions below are not exhaustive and any other items for inclusion are welcomed.

### **Section 1: Suitability of current and future spectrum bands to meet future needs for mobile broadband**

*Context - Assess suitability of current and future mobile bands:*

- taking into account MS's different national, market, usage and geographic characteristics;
- in order to meet future capacity, speed and coverage requirements

The discussion in this section will note a strategic approach to spectrum management is a complex balance between many factors (technology, policy, standards) and all must be considered, it will also include a brief exploration of a number of different issues ranging from the mix of spectrum to appropriate ranges or amount of spectrum to meet coverage requirements in the future and the evolution of networks and technology and should take into account the issue of the timing of availability of new spectrum bands and include:

- re-authorisation/re-farming of already harmonised bands
- What timeframes
  - For already harmonised bands
  - For new bands

### **Section 2: Best Practice for spectrum awards**

[NB – Precise configuration and articulation of sections 2&3 may change over time as drafting continues]

*Experience of auctions as part of efficiency framework*

- Auctions v beauty contests
- Objectives of a spectrum auction – Risks and Challenges
  - Risks/challenges to achieving such objectives
  - Understanding how format of the auction may be used to address risks
  - Understanding of experience of meeting objectives

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<sup>1</sup> RSGP14-556(final)

- Experience of Auction approaches and design (evaluation of types rules)
  - e.g. Combinatorial clock auction (CCA), Simultaneous multiple-round ascending auction (SMRA), etc
  - Pros and cons of different elements such as awards covering multiple bands or spectrum packaging
- Getting the auction criteria right
  - Timing of awards
  - Qualification criteria – who can participate and effect of limitations
  - Reserve prices
  - Technical requirements, - e.g. WiFi/licence-exempt/femtocells/5G requirements?
- How to manage and address different circumstances, needs/situations across the EU, whilst ensuring efficient utilisation and fulfilling market requirements

### **Section 3: Promoting efficient use of spectrum, competition in downstream markets and coverage**

*Getting the right incentive framework to promote efficient use of spectrum and dealing with post award any inefficiency and/or competition issues*

- Spectrum trading and leasing – role in promoting market liquidity (building on previous RSPG output e.g. RSPG BEREC Report on competition transitional issues in the mobile sector in Europe.<sup>2</sup>)
- Incentive payments and auctions
- Requirements to meet certain standards, to innovate and introducing and fostering new technologies, including the role of standardisation
- Implementing technology and service neutrality. (NB it is anticipated that output from the TS&N Questionnaire will inform the drafting on this section)
- Technological and network evolution - How are demands of mobile and ECS generally likely to change and how far is that to be reflected? Including such issues as intensification of usage of network assets (base stations).

Other ideas or issues which may merit inclusion in discussion and final report

- Setting minimum performance standards
- Role of Spectrum Pricing / Fees – inc. flexibility of payments
- License Duration and License Renewal
- Spectrum caps and floors – making spectrum available for new entrants –
- Coverage obligations and how to set them?
- Wholesale access obligations? National roaming requirements?
- What role for NRAs to promote a) investment and b) innovation (see above re: min performance standards and how does this fit with T&SN)
- Re-farming funds?

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<sup>2</sup> RSPG 2010/ 351

## Section 4: What role for spectrum sharing/pooling

### *Ensuring effective utilisation*

- Pros and Cons of sharing / pooling generically ... building on the RSPG study on LSA<sup>3</sup> and Collective Use of Spectrum<sup>4</sup>
- Use of spectrum trading to generate cost efficiency and improved coverage (Swedish case study on coverage)
- Sharing opportunities - Different types (passive/active infrastructure, joint roll-out etc... inclusion of case studies where feasible? Community Networks? RSPG/BEREC Report on Infrastructure Sharing.<sup>5</sup>
- Technical Aspects of Sharing – network links and performance standards
- Evolution of Spectrum Management - Regulatory Levers / Interventions in context - Future of network evolution? What does the market require? Should it be a requirement that sharing / pooling is allowed?
- Liquidity and sharing in the context of competition and competition effects. See RSPG/BEREC Report on Competition: Transitional Issues in the Mobile Sector.<sup>6</sup>

## Section 5: Management of under-utilised spectrum

### *Effective regulation and the value of experience of award processes in the evolution of spectrum management*

- Dealing with different circumstances and needs across Europe
  - Concerns re: inflexible harmonisation leading to potential for inefficient use / sterilisation
  - Retention of MS flexibility provided no undermining of EU harmonisation
- Addressing under-utilised spectrum
  - Role for market v role for regulator and likely issues
    - Impact on investment
    - Expectations of spectrum users
  - Potential role for other behavioural mechanisms such as Incentive auctions (inc. impact of implementation within EU regulatory framework) or re-farming fund?
  - Policy value of regulatory innovations; e.g. sunset clauses for harmonisation decisions? How they might link to license conditions

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<sup>3</sup> RSPG13-538 - RSPG Opinion on Licensed Shared Access

<sup>4</sup> RPSG 11-392 Final

<sup>5</sup> Joint BEREC/RSPG Report on infrastructure and spectrum sharing in mobile / wireless networks. RSPG/BEREC 11/374

<sup>6</sup> RSPG 10-351 Final