



EUROPEAN COMMISSION

Directorate-General for Communications Networks, Content and Technology

Electronic Communications Networks and Services

Radio Spectrum Policy Group

RSPG Secretariat

Brussels, 8 June 2016

RSPG16-031 FINAL

RADIO SPECTRUM POLICY GROUP

STRATEGIC ROADMAP TOWARDS 5G FOR EUROPE

DRAFT RSPG Opinion on spectrum related aspects for next-generation wireless systems (5G)

DRAFT

DRAFT RSPG Opinion on spectrum related aspects for next-generation wireless systems (5G)

1 Background and scope of work

An opinion¹ was sought in order to build on RSPG's efforts and contribute actively to the development of Europe's spectrum policy strategy regarding 5G.

In developing the strategic roadmap towards 5G for Europe the RSPG was requested to:

- Assess 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).
- Consider aspects related to system architecture (such as wireless network densification, network resilience and convergence), technology enablers and the variety of services and invite 5G-PPP to present the status of its work.
- Identify and analyse spectrum related challenges such as: spectrum sharing, usage and licence conditions, rural areas, policy implementation, incentive regulation, the principle of technology and service neutrality and the reuse of already harmonised spectrum to support the transition towards 5G.
- Assess appropriate frequency bands for 5G, in particular additional bands above 6 GHz.

However, the RSPG resolved to deliver this early opinion as a first stage in order to give guidance and an early input to other associated European activities, such as the development of the European Commission 5G Action Plan and industry more generally to enable the early development of 5G in Europe. This opinion will be followed by a subsequent detailed opinion addressing the above requests.

The RSPG strategic roadmap towards 5G for Europe aims to facilitate the launch of 5G on a large scale by 2020, thereby ensuring that the benefits of 5G-based services are available to all European citizens. The vision being that 5G will drive industrial and societal transformation and economic growth in Europe from 2020 and beyond.

It is expected that the first major commercial deployment will be based on lower frequencies. One of the reasons is the possibility to reach rapidly a sufficient coverage for addressing enhanced broadband communications and, above all, machine type communications market, which may require ubiquitous coverage, low latency and low complexity.

The implementation of frequency bands above 24 GHz remains needed to ensure all the performance targets of 5G, for example multi gigabit per second data rates.

¹ RSPG 16-007 Final of 24 February 2016

2 The opinion of the RSPG on the strategic roadmap towards 5G for Europe

This roadmap has been developed to facilitate the launch of 5G on a large scale in Europe by 2020. The goal is that the benefits of 5G-based services are available to all European citizens in a timely manner, driving industrial and societal transformation and economic growth in Europe from 2020 and beyond.

1. The RSPG considers the 3400-3800 MHz band to be the primary band suitable for the introduction of 5G use in Europe even before 2020, noting that this band is already harmonised for mobile networks, and consists of up to 400 MHz of continuous spectrum enabling wide channel bandwidth. This band has the possibility to put Europe at the forefront of the 5G deployment.
2. The RSPG is of the opinion that 5G will need to be deployed also in bands already harmonised below 1 GHz, including particularly the 700 MHz band, in order to enable nationwide and indoor 5G coverage.
3. The RSPG considers that there will be a need to ensure that technical and regulatory conditions for all bands already harmonised for mobile networks are fit for 5G use.
4. The RSPG stresses that there are many frequency bands above 24 GHz which are of potential interest for 5G in Europe:
 - To give sufficient guidance to industry, the RSPG will aim to identify at the earliest opportunity a suitable band to be made available in Europe. In order to do this RSPG members will prioritize the necessary work to assess what would be involved in enabling access to each candidate band in their country.
 - In this regard the RSPG believes that global harmonisation will be essential for developing 5G.
 - The RSPG will define the timeline for availability of other bands taking into account sharing and transition challenges, for example for mobile access and fixed services (including backhauling).
5. The RSPG believes that considerations of bands above 6 GHz for 5G shall be limited to the bands listed by WRC-15 in order to strengthen the global harmonisation opportunities. This work should focus on the frequency bands proposed by Europe, in particular the bands 24.5-27.5 GHz, 31.8-33.4 GHz and 40.5-43.5 GHz. The RSPG intends to identify which one of these could be harmonised in Europe for early implementation.
6. The RSPG will keep under review whether there is any requirement for European harmonisation measures in bands above 24 GHz before WRC-19.
7. The RSPG will prepare a supplementary opinion elaborating on the implementation of this opinion taking also into account the wider RSPG work programme, in particular the working groups on IoT and ITS.