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POLICY GROUP

RSPG draft opinion on 6G development

Tassos Lyratzis (EETT, Greece)

UK Spectrum Policy Forum, 20 July 2023

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The Radio Spectrum Policy Group

The Radio Spectrum Policy Group (RSPG) is a high-level advisory group that assists the European Commission in the development of radio spectrum policy.

It provides advice to the European Commission in the form of opinions and reports.

Members of the Group:

- representatives of the EU Member States and the EEA EFTA countries from the national regulatory authorities and/or the ministries having responsibility for radio spectrum.

Attending RSPG meetings as observers:

- representatives of the EU candidate countries, the European Conference of Postal and Telecommunications Administrations (CEPT) and the European Telecommunications Standardisation Institute (ETSI)

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Background: RSPG opinions on 5G (2016 - 2021)

- RSPG Opinion on spectrum related aspects for next-generation wireless systems (5G), November 2016
- RSPG Second Opinion on 5G networks (Strategic Spectrum Road Map Towards 5G for Europe), January 2018
- RSPG Opinion on 5G implementation challenges (RSPG 3rd opinion on 5G), January 2019
- RSPG Opinion on Additional Spectrum Needs, June 2021

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Opinion on additional spectrum needs (2021)

- demand in the majority of MS for additional spectrum is mainly for the mid-bands.
- demand for local access to licensed spectrum for vertical networks in mid-bands and in the mmWaves.
- no specific spectrum need for FWA in the mmWave bands, operators can use their spectrum for FWA if they need
- different type of authorisation methods facilitate innovation and different technologies
- investigate possible use of the band 3.8-4.2 GHz for local vertical applications (i.e. low/medium power) while protecting receiving satellite earth stations and other existing applications and services
- promote spectrum access for verticals in the mmWaves with options for enabling local access to spectrum in the 26 GHz and 42 GHz bands

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The Radio Spectrum Policy Group work programme 2022-2023

For the current period (2022-2023) the RSPG work programme includes the following work items:

- Peer review and Member States cooperation on authorisations and awards
- WRC-23
- “Good offices” to assist in bilateral negotiations between Member States
- Mobile technology evolution – experiences and strategies
- Digital decade 2030
- **The development of 6G and possible implications for spectrum needs and guidance on the rollout of future wireless broadband networks**
- Strategy on the future use of the frequency band 470-694 MHz beyond 2030 in the EU
- Role of Radio Spectrum Policy to help combat Climate Change
- Mobile Satellite Services beyond 2027

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The development of 6G and possible implications for spectrum needs and guidance on the rollout of future wireless broadband networks

The RSPG:

- will conduct an evaluation of 5G in Europe with the aim to gain knowledge around what has been successful and what still needs to be addressed
- will follow and investigate the research and development of 6G and study European 6G test plans and trials
- will investigate and identify early indications of additional spectrum and harmonisation needs and/or potential implications on spectrum regulation in order to be prepared for the development of 6G roadmaps later on (beyond 2023). This activity will not address WRC-23 agenda item 10
- will examine whether there is a need to address spectrum demand for unlicensed devices, including WiFi, and the particular issue of non-terrestrial networks to maximize 6G coverage

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The development of 6G and possible implications for spectrum needs and guidance on the rollout of future wireless broadband networks

- RSPG subgroup co-chairs:

  Heidi Himmanen (Traficom, Finland)

  Tassos Lyratzis (EETT, Greece)

- Survey to Member States in the summer 2022
- Workshop for stakeholders in September 2022

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The draft RSPG opinion on 6G development (1/3)

1. 5G implementation is ongoing in the primary and pioneer bands identified for 5G.
    i. The 700 MHz band provides good coverage but offers lower bit rates than mid and mmWave bands
    ii. The 3.6 GHz band is the primary band for implementation of 5G networks in Europe, providing god coverage and high bit rates
    iii. In the 26 GHz band the roll-out of 5G has been slow even in those MSs that have made this band available to the market. This band can provide for high capacity dense networks of limited coverage
2. New solutions for more dynamic and shared use of spectrum have been introduced with the uptake of 5G. This is expected to increase with 5G development and the uptake of 6G.
3. Increasing needs for vertical and local spectrum. There is a benefit in common European approaches for spectrum access for verticals with options for enabling local access to spectrum.

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The draft RSPG opinion on 6G development (2/3)

4. Additional capacity needs for mobile networks may arise on the national level during this decade, prior to the introduction of 6G. These needs do not require additional EU harmonisation and can be met at a national level either by using the current spectrum more efficiently (e.g. by densifying the network) or introducing additional spectrum for terrestrial mobile broadband. Technology neutrality and spectrum sharing are applicable and the existing harmonised bands for ECS will be also made available for 6G. The suitability of harmonised technical conditions to support the long-term development of 6G need to be assessed.
5. As for 5G, there is a role and need of license exempt or light-licensed spectrum for offloading some of the 6G traffic and to provide private and personal networks. This spectrum supports improved end-user connectivity, machine-to-machine and other applications, which do not require a predictable quality of service.
6. There is also a role of and need for non-terrestrial networks to support 6G development further current initiatives on 5G. Non-terrestrial networks could become an important additional connectivity layer to terrestrial connectivity services.

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The draft RSPG opinion on 6G development (3/3)

8. Further work by RSPG is needed on early recognition of spectrum needs, so that the initial launch and operation of 6G networks/services can start in 2030.

   This should be based on a proper evaluation of coverage and capacity needs for 6G use cases and usage scenarios taking into account, among others, the results of projects in 6G Research and Development. RSPG will consider in 2024 or later a 6G spectrum roadmap.

9. Recommends to the European Commission, taking into account RSPG recommendations, with the help of Member States, to work towards a strategy, involving all active stakeholders (research institutes, manufacturers, MNOs, spectrum users' associations, etc.), to facilitate the timely launch of 6G services across the EU.

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RSPG opinion on 6G development (2022-2023)

- RSPG plenary June 14th 2023: Draft Opinion document adopted for public consultation

  (https://radio-spectrum-policy-group.ec.europa.eu/system/files/2023-06/RSPG23-026final-draft_RSPG_Opinion_on_6G_development_with_Annexes.pdf)

➜ **Please provide your inputs to the PC during the summer 2023!**

- Final document to be published after the RSPG plenary in October 2023