



EUROPEAN COMMISSION

DIRECTORATE-GENERAL FOR COMMUNICATIONS NETWORKS, CONTENT AND TECHNOLOGY

Digital Decade and Connectivity

Radio Spectrum Policy Group

RSPG Secretariat

Brussels, 02 May 2025

DG CNECT/B4/RSPG Secretariat

RSPG25-015 FINAL

RADIO SPECTRUM POLICY GROUP

6G spectrum roadmap

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Rationale:

The European Commission published in February 2024 the White Paper on “How to master Europe's digital infrastructure needs?”, to which the RSPG provided its Opinion¹. The RSPG noted that the focus should be kept on making radio spectrum available in due time to meet future needs in the EU and the RSPG underlined that any future plans for the rollout of 6G in the EU need i.e. to take into account coverage and capacity demands, competition aspects and align to national demands and specificities such as the geographic and demographic landscape.

The RSPG recognized generally in 2016 in the context of 5G, that a spectrum roadmap, is highly anticipated both by the Member States and stakeholders, before the initial launch of a new network generation, regardless of the challenges related to this task. In accordance with the RSPG Work Programme for 2024-2025, the Group, after completing the first deliverable on 6G i.e. the RSPG Report on 6G Strategic vision, will now focus on the development of a 6G spectrum roadmap for the EU.

The global vision and timeline for 6G development is set by the ITU-R, and currently the work on IMT-2030 is in the phase of definition of relevant requirements (2024-2026). This gives the RSPG an opportunity to deliver an EU-level 6G spectrum roadmap before the next standards development phase and possible additional spectrum identification at the next WRC in 2027. The target for technology development, including on spectrum implementation, is set to enable a network launch in 2030 and implementation in the years beyond 2030. This timeline should also be supported by EU spectrum policy to enable the initial launch of 6G networks and services across the EU.

As indicated in the Report on 6G Strategic vision, to foster the internal market for network and terminal equipment, the EU needs to indicate possible spectrum band(s) planned for both the launch of 6G and further development of 6G innovation in Europe, drawing lessons from the RSPG 5G Opinions. This should take into account the gradual and selective market adoption of the primary and pioneer bands. The 6G spectrum roadmap should build on the conclusions in the RSPG Report on 6G Strategic vision.

The RSPG should therefore assess the following frequency bands or parts thereof, as possible spectrum band(s) for initial 6G rollout:

- Frequency bands already harmonised for ECS in the EU under the Radio Spectrum Decision:
 - Low bands: 700 MHz, 800 MHz, 900 MHz
 - Mid bands: 1500 MHz^{2 3}, 1800 MHz, 2.1 GHz, 2.6 GHz, 3.6 GHz
 - High bands: 26 GHz, 42 GHz
- 3.8-4.2 GHz, to be used for low/medium power local area network connectivity (currently under harmonisation)

¹ [https://radio-spectrum-policy-group.ec.europa.eu/document/download/15789389-828c-4a55-a397-f2338fa2125b_en?filename=RSPG24-019final-RSPG Opinion on how to master Europe's digital infrastructure needs.pdf](https://radio-spectrum-policy-group.ec.europa.eu/document/download/15789389-828c-4a55-a397-f2338fa2125b_en?filename=RSPG24-019final-RSPG%20Opinion%20on%20how%20to%20master%20Europe's%20digital%20infrastructure%20needs.pdf)

² DECISION (EU) 2015/750 on the harmonisation of the 1 452-1 492 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Union: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32015D0750>

³ DECISION (EU) 2018/661 amending Implementing Decision (EU) 2015/750 on the harmonisation of the 1 452-1 492 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Union as regards its extension in the harmonised 1 427-1 452 MHz and 1 492-1 517 MHz frequency bands: https://eur-lex.europa.eu/eli/dec_impl/2018/661/oj/eng

- 6425-7125 MHz (“upper 6 GHz”), which has been identified for IMT at international level, with the possibility to be also used for the implementation of wireless access systems (WAS), including radio local area networks (RLANs). The long term vision for this band currently subject to RSPG work⁴. Recommendations of the upcoming RSPG Opinion for the upper 6 GHz should be taken into account when available.

The RSPG Report on 6G Strategic vision addresses issues beyond the mere identification of possible spectrum bands for the initial 6G rollout, including for example integration of non-terrestrial networks, spectrum sharing solutions, and authorisation regimes in 6G. Further assessment of these issues might facilitate the establishment of the 6G ecosystem and the 6G rollout in Europe.

Scope of RSPG activity:

The RSPG will develop an EU-level 6G spectrum roadmap and make recommendations where appropriate, including but not limited to i.e. possible spectrum band(s), spectrum sharing, non-terrestrial networks. This should take into account the services to be offered and the goals to be achieved by the deployment of 6G networks in accordance with the RSPG 6G strategic vision.

The work of the subgroups on:

- Long term vision for the upper 6 GHz band,
- WRC, and
- Assessment of future usage of the frequency band 470-694 MHz within the EU

will be taken into account and contribute to this work item.

The RSPG should pay due attention to the ongoing work in CEPT, ITU and technical standardisation developments at the European and global level.

The RSPG would assess further issues addressed in the RSPG Report on 6G strategic vision, that it considers relevant, and make recommendations, if appropriate.

Planned type of deliverable:

- RSGP Opinion on 6G spectrum roadmap (RSPG 1st Opinion)

Time schedule:

RSPG Workshops with the stakeholders: as appropriate

Draft RSPG Opinion on 6G spectrum roadmap: February 2026

Final RSPG Opinion on 6G spectrum roadmap: June 2026

⁴ RSPG Opinion on Long-term vision for the upper 6 GHz band, expected in November 2025 https://radio-spectrum-policy-group.ec.europa.eu/document/download/d4e46670-313b-4bac-8d8d-760d92f4649b_en?filename=RSPG24-008final-RSPG_WP24_and_beyond_0.pdf