

Radio Spectrum Policy Group
Body of European Regulators for Electronic Communications
Position Paper on spectrum-related EMF issues

The development of the fifth-generation (5G) technology standard for cellular networks and its beamforming capabilities together with the use of new frequency bands stimulated the discussion on the potential effects of electromagnetic fields (EMF) exposure on human health anew. The spread of misinformation during the ongoing COVID19-crisis on alleged interlinks between 5G-testing and COVID19 fuelled this discussion. In light of the above, the RSPG and BEREC consider that accurate public information on the new technology and its interplay with EMF, is also key for the successful acceptance of 5G networks. In this context, the RSPG¹ and BEREC² thoroughly study 5G and related topics and follow the ongoing developments of 5G implementations.

The RSPG and BEREC strongly support measures to protect the public and workers from harmful effects arising from exposure to EMF. In many cases, members of the public are unaware of the fact that there are guidelines in place to limit their exposure to EMF.

International study reviews on EMF effects have been established by two organisations recognised by the World Health Organization (WHO): the International Agency on Research on Cancer (IARC)³ and the International Commission on Non-Ionizing Radiation Protection (ICNIRP). In particular, guidelines produced by the ICNIRP, a non-profit organisation that acts independently of any government, are aimed to protect the human body against potentially harmful effects of exposure to EMF. The EU Council Recommendation 1999/519/EC, which is the reference document in place in the EU, is actually based on the emission limits set out in ICNIRP's 1998 guidelines. Moreover, the EMF emissions from base stations currently observed in Member States are well below the recommended limits⁴, which have then proved so far to be effective.

¹ The RSPG provided, with its Opinions on 5G (see: <https://rspg-spectrum.eu/rspg-opinions-main-deliverables/>), core contributions to Europe's spectrum policy strategy regarding 5G.

² BEREC is also studying the impact of 5G on Electronic Communications regulation with a view to anticipate any changes to regulation that may be required to keep pace with innovation (See: https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/8910-report-on-the-impact-of-5g-on-regulation-and-the-role-of-regulation-in-enabling-the-5g-ecosystem and https://berec.europa.eu/eng/news_consultations/ongoing_public_consultations/7342-public-consultation-on-draft-berec-guide-to-the-berec-5g-radar-and-5g-radar)

³ IARC has classified EMF in 2011, without finding any evidence that can raise appraisable concerns on the issue of their carcinogenicity.

⁴ In some cases the EMF limits set by national legislation are below the ICNIRP recommended limits.

In order to properly take into account new technological development changes, such as 5G, ICNIRP updated its 1998 guidelines in 2020⁵, based on all the available and most recent scientific evidences. ICNIRP's 2020 guidelines confirm the appropriateness of existing limits at the EU level for the exposure to EMF, with a few required adaptations regarding limits in higher radio frequency bands and associated measurement methods.⁶ So, compliance of 5G technology with the new ICNIRP guidelines will continue to provide the highest level of protection to date.

Fixed and wireless networks are an essential infrastructure in Europe, even more so in times of crises. As part of addressing misinformation about EMF and 5G, which may act as a barrier to the timely rollout of 5G networks, RSPG and BEREC hold the following positions:

- the applicable limits and guidelines provided by ICNIRP in 2020 contribute to our confidence that the EMF issue is addressed in a transparent and scientific manner and human protection is ensured;
- the developments in new EMF measurement methods applicable to new mobile systems, including 5G, are welcomed to always safely make use of the most advanced technologies;
- that Member States are invited to ensure that measures are in place for the necessary monitoring of whether the operator's installed equipment is operating in compliance with the set limits with the objective of, among others, ensuring trust in radio technologies including 5G;
- that transparent, factual and neutral information on EMF issues is highlighted by Member States and the European Commission;
- that Member States are invited to take into consideration citizens' concerns and exchange information and best practices in Europe in order to contribute to a better understanding by the general public of these issues and to promote transparency with regard to the new 5G technology.

⁵ See also <https://www.icnirp.org/cms/upload/publications/ICNIRPrfgdl2020.pdf>

⁶ Some new elements of the ICNIRP guidelines address aspects concerning the use of spectrum in bands above 6 GHz, or new transmission techniques (such as with adaptive antennas), which will be especially relevant for future 5G networks.