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The impact of RF-EMF exposure limits stricter than the ICNIRP or IEEE guidelines on 4G and 5G mobile network deployment

ITU-T K-series Recommendations – Supplement 14

Supplement 14 to ITU-T K-series Recommendations

The impact of RF-EMF exposure limits stricter than the ICNIRP or IEEE guidelines on 4G and 5G mobile network deployment

Summary

Radio frequency electromagnetic field (RF-EMF) exposure limits have become a critical concern for further deployment of wireless networks, especially in countries, regions and even specific cities where RF-EMF limits are significantly stricter than the International Commission for Non-Ionizing Radiation Protection (ICNIRP) or Institute of Electrical and Electronics Engineers (IEEE) guidelines.

This problem currently affects several countries such as China, India, Poland, Russia, Italy and Switzerland, regions of Belgium or cities such as Paris.

Supplement 14 to the ITU-T K-series of Recommendations provides an overview of some of the challenges faced by countries, regions and cities which are about to deploy 4G or 5G infrastructures. This Supplement provides information on a simulation on the impact of RF-EMF limits that was carried out in Poland as an example of a wider phenomenon, which is applicable to several other countries, which have set limits that are stricter than those contained in the ICNIRP or IEEE guidelines.

The results of the simulation indicate that where RF-EMF limits are stricter than ICNIRP or IEEE guidelines, the network capacity buildout (both 4G and 5G) might be severely constrained and might prevent addressing of the growing data traffic demand and the launching of new services on existing mobile networks.

History

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