

## **New 6g challenges: the time for electromagnetic field awareness has come**

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To support the continuous growth of the Internet traffic, each new generation of mobile network (3G, 4G, 5G) is improved with respect to the previous generation, in terms of spectral efficiency, capacity, and energy efficiency. However, each new generation also adds its own cost in terms of spectrum and energy consumption to the costs of all previous already deployed ones. Moreover, it adds its own contribution to the overall Electro-Magnetic Field (EMF) exposure. In most countries, national regulators define the EMF limits based on the guidelines published by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). However, some countries or cities have adopted more stringent limits; sometimes ten times lower than the ICNIRP guidelines. More generally, ensuring arbitrarily low EMF exposure may potentially be requested in some areas, by customers, in the future. 6G, currently still at the Research stage, has the opportunity to be the first generation to take into account arbitrarily low EMF exposure in its design. We believe it is now the right time to explore disruptive approaches for transmitting more, with a better EMF exposure awareness.