

## **Recent Developments in EMF and SAR Measuring Techniques Towards Reliable Assessment of Exposure to Electromagnetic Fields**

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### **Abstract:**

The spread of broadcasting devices for mobile applications has led to a substantial increase of human exposure to radio frequency (RF) fields. A project funded by the EU aims to address the health and exposure requirements for the electromagnetic fields that are in wide-spread public use. This includes the development of traceable electromagnetic field (EMF) sensors and new artifact standards for measuring the specific absorption rate (SAR) covering a wide range of frequencies. This will enable the verification of the exposure limits for humans recommended by the International Commission on Non-Ionising Radiation Protection (ICNIRP).

The project consortium consists of partners from seven national metrology institutes from the following countries: Germany (PTB: Coordinator), United Kingdom (NPL), France (LNE), Italy (INRIM), Finland (STUK), Netherlands (VSL), and Turkey (UME).

In this contribution, besides introducing the German National Metrology Institute, the project mentioned above will be presented with a focus on some of the main achievements so far. This includes new wideband sensors based on log-per antennas and Schottky diodes for the frequencies between 40 GHz and 300 GHz. Moreover, an artifact standard for measuring SAR up to 10 GHz in human equivalent liquids based on the rectangular waveguide techniques will be presented.

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