EMF exposure index identifies opportunities for innovation

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More accurate perceptions of electromagnetic field (EMF) exposure will dispel unfounded fears and drive technological development, say researchers.

The three year EU-funded LEXNET project, which was completed in October 2015, sought to directly address persistent public concerns about electromagnetic field (EMF) exposure by establishing an index assessing the averaged exposure of Europeans, along with their attitudes and beliefs.

The results will have implications for policy makers and network providers by helping them to optimise their operations, identify where EMF exposure could be effectively limited and improve their

communications about perceived risk. This will in turn lead to a better informed public.

Wireless systems based on EMF have transformed mass communication in just a few decades. No adverse health effects have been established as being caused by mobile phone use and all telecommunications in Europe must comply with the RTTE Directive that requires products to comply with the European Council's 1999 recommendation on EMF exposure.

In spite of existing protection limits however, public concern still exists. A recent Eurobarometer survey for example revealed that 70 % of respondents thought mobile phone masts affect their health.

However, a key finding of the LEXNET project was that while base stations for mobile telephony are consistently seen as the most intensive EMF exposure source, it is in fact the WLAN-connected laptop that is the dominant EMF exposure source for most people.

Focusing on the perceived EMF threat from base stations is therefore not the most cost-effective or efficient way of reducing exposure. As a result, the research suggests that network companies and innovators could play a much bigger role in this respect, and that a potential market exists for developing low exposure technology. Indeed, smaller scale network technology innovations could have the most significant impact.

The project team also concluded that risk perceptions of the general public tend to be guided by subjective EMF-impact models, which underestimate near field exposure (such as from your laptop) and overestimate far field exposure (such as from a mobile phone mast). This explains why people are more concerned about the existence of base stations than about EMF exposure from their daily office work tools.

In addition to these source factors, the project found that EMF risk perception is also influenced by demographic and social factors along with personal attitudes and beliefs. Of most importance is the country of residence and a person's attitude towards technical innovation.

Several communication conclusions have been drawn from these findings. First, because the country of residence is decisive for risk perception, communication must be tackled as a culturally sensitive issue. Risk communicators should therefore take into account cultural factors that provide the context in which EMF sources are evaluated.

Furthermore, risk communication should try to correct the erroneous assumptions that risk is related to the physical size of the exposure source and to the time of the day during exposure (referring to the understanding that people think that the body is more vulnerable to EMF exposure at night).

More information: For further information please visit the LEXNET project website: www.lexnet-project.eu/

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