

Remarks on EMCE of the 15th anniversary

by Achim Enders

There has been a considerable increase in resources, i.e. money and research capacities, in the field of EMCE in recent years in Germany and Europe. The German Mobile Telecommunications Research Programme was an important example for that. Likewise 50-Hz magnetic fields are again more intensely addressed in the EMCE debate, as, with the expansion of wind power, the reconstruction and expansion of the energy distribution network to a real energy transport network is needed.

Therefore one can safely assume that much money will be spent for EMCE research also in the future and that the discussion influenced by society, politics and of course also by industry will have a huge influence on funding agencies and the modalities of granting funds again.

Wait a moment, please ... yes, you've read correctly. But actually research and science should be more objective than social, political, yes, even democratic debates (that is why already Aristotle knew that science is the least democratic business in the world – measurement values e.g. are not determined by vote). At least there is absolute unanimity regarding this aspect among **all** interest groups: without authentic scientific facts or what is thought to be authentic there is no legitimate standpoint.

This social rationality given in the acceptance of scientific rationale should make it possible that the interest groups being active in the field of EMCE will find answers to the following questions before research funds are provided to them:

1.) There can be no proof of the non-existence of adverse field effects below valid limits. Before new

research is funded, a consensus should be reached regarding the remaining risks that can be tolerable – without knowing whether they are real or fictitious. One can spend much money in order to „clarify hypotheses“ as they say so nicely in EMCE research programmes – but before there should be clarity about the „remaining unclarity“ that is to be accepted. Otherwise all is an end in itself. This is illustrated by my personal observation that also EMCE representatives of the mobile radio industry and network operators act ambivalently on this. On the one hand they refute concrete concerns over health-relevant effects on the basis of the present state of knowledge, on the other hand their job would be cut by their employers, if the risk would be regarded as neglectable from society; moreover we all know that heart-sinking feeling when confronted by aggressive mobile radio critics during public hearings (partially up to real physical threats). The question for clarity primarily shows to be a social and psychological problem. Humans perceive risks in their individual life subjectively. They unconsciously refuse to perceive corresponding statistics as being relevant for their life at all. But: Should research



research on the occasion sary of the FGF

funds and capacities therefore be used less effectively? The heretical question must be allowed: What could have been done with the funds granted to EMCE research more in other areas for the safety of people?

2.) Should there be biological effects of electromagnetic fields below valid limits, the question is: how could they be uncovered with the best possible probability? Was there a sufficient approach to answer this question in the past?

3.) Associated with question 2.) it may be asked as well, whether, in the case of a reproducible effect, we can assume at all that it is health-relevant. Asked the other way round: What effects would then be health-relevant with high probability?

4.) In view of the heterogeneous results reported by many publications and reviews on biological, biochemical and genetic investigations, also non-experts meanwhile ask: what about quality management? It begins directly with the definition of observed biological endpoints: are they defined clearly and how can they be defined precisely and reproducibly? Are there e.g. standardized round robin tests? There is special cause for concern regarding the question for standardized comparability that has been addressed by some experts for years without being satisfactorily answered. With that in mind, we must state that the exposition measurement technology in the field and in experiments is on one side naturally still a complex issue with imponderabilities, but, on the other side, it is not of central relevance any longer regarding possible future research.

When looking to the future, I would simply wish for more clarity in the EMCE debate: The „clarification“ of real or alleged effects is secondary, first it has to be clear what we want to achieve at all - when looking back, it is indeed amazing that the „electrosmog debate“ is more intense in society than e.g. the „uv debate“, i.e. the risk from solar radiation or of using solariums. In Germany, according to projections from cancer registries, uv radiation is responsible for the majority of the annually new 120,000 skin cancer cases with 5000 deaths. In comparison, the EMCE research is a tool to counter primary fears over risks. The FGF never evaded such partially very uncomfortable questions, and has thereby done more for an objectification than many others. Therefore I would wish that this successful engagement will be continued!



Since 1996 Prof. Dr. rer. nat. habil. Achim Enders is the Director of the Institute for EMC at the Technical University of Braunschweig. Here, he conducts many research projects in the area of radiated EMC, especially in complex traffic carrier systems, as well as electrotechnical basic research.