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and regulatory harmonization in the EU**

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CO	Confidential, only for members of the consortium (including the Commission Services)	

This report gives a summary introduction to the results of the JRC activities on risk communication as part of Work-package WP4 'Support informed decision-making for regulation and risk communication', and most particularly the discussions of 'case studies' in EMF risk communication developed on behalf of national authorities, non-governmental bodies, and industry, which were presented during the 2nd Workshop on EMF Risk Communication, in Stresa, 2-4 May 2007. Please refer to the website at <http://web.jrc.ec.europa.eu/eis-emf/stresa2007.cfm> to find all relevant documents, list of participants and full presentations.

There were four areas of interest and panel discussions during the workshop: 'Information campaigns' (targeted campaigns, evaluation of public understanding and information needs: surveys, opinion pools, focus groups; leaflets, websites, media reporting, etc), 'Education projects' (education campaigns or initiatives addressed to schools, medical doctors; audiovisual materials, educative leaflets, booklets, etc), 'Participation programmes' (participatory and voting approaches, public consultation, stakeholder panels, establishing official or independent advisory committees, hearings, etc), and 'Measurement campaigns' (monitoring of EMF levels in response to public concerns, measurements to address opposition to antennas and masts; communicate emission levels from handsets, ad-hoc surveys, websites, etc).

Introduction

Assessing the potential health risks and environmental impacts of EMF fields is essential for the protection of public health and the regulatory process. Another equally important task is to address public concerns and to promote the safe use of the EMF technologies by the provision of up-to-date evidence-based information, and the development of well-adapted communication tools. So far no health effects have been consistently demonstrated at exposure levels below the ICNIRP (1998) limits and scientific understanding of possible adverse health impacts from long-term exposure to very weak EMF fields remains insufficient and inconclusive.

However, no matter how small potential health hazards might be, they could pose a serious health threat because of the ever-increasing public exposure to EMF technologies and consumer applications. In these conditions, and in accordance with the strategy adopted by the European Commission, the WHO, and various other national and international organisations, it is important to promote and support scientific research to fill-out existing knowledge gaps, and to implement the periodic review of the recommended exposure limits and safety regulation in the light of the best available scientific understanding. Further precautionary measures must be the result of a broad consensus when reasonable doubts of possible harm are supported by sound scientific arguments.

Member states in the EU follow the Council Recommendation (EC99/519), limiting the public exposure to EMF (in the 0 Hz to 300 GHz frequency range), which apply the guidelines on maximum exposure levels and reference values established by ICNIRP (1998). Exposure limits are based on peer-review of the scientific evidence on established health effects, and apply to all devices emitting EMF. The basic requirement is that below these limits health must not be affected, even to repeated exposure. Common standards covering all aspects of the emission of electromagnetic fields generated by equipment operating in the different frequencies are ensured within the scope of the Low Voltage Directive (LVD) 73/23/EEC, the Radio & Telecommunications Terminal Equipment (R&TTE) Directive 1999/5/EC, and the new Electromagnetic Compatibility (EMC) Directive 2004/108/EC. Occupational exposure is regulated by the directive 2004/40/EC of the European Parliament and of the EU council.

Risk communication activities in Europe: Information, education and participation

EU member states, Switzerland, and other countries in Europe have developed various initiatives to inform and educate the public on matters of EMF and related public health and safety issues. Primarily such information initiatives are the responsibility of governmental or publicly funded institutions: Ministries, agencies, independent research institutes, or environmental and health institutes.

The main elements of EMF risk communication activities across Europe are information and education programmes. EU member states, and other countries in Europe have developed various initiatives to inform and educate the public on matters of EMF and related public health and safety issues. Their purpose is to provide evidence-based information and advice in answer to public concerns, and on the new developments in communication and wireless technologies. Moreover, as part of the overall governance system, the practical compliance with the legal requirements by the telecommunication and electricity industry also implies the provision of reliable information on EMF as well as on the emission levels. Of course other stakeholders do play an active role in what they see as their communication responsibilities.

Examples of valuable initiatives from the authorities, non-governmental institutions and associations across Europe, aiming at informing and educating the public at large, are the implementation of dedicated websites, and the provision of a wide range of information and advice, together with printed material (publications, reports, fact sheets, leaflets, etc), conferences and media events. This also includes the launching of specific education and training campaigns. Some initiatives and information material have been aimed at legislators or risk communicators in central or local government, and others to health professionals, schoolteachers, and the general public.

These initiatives are generally associated with measurement programmes to assess the exposure of the general population to RF sources (mobile communication base stations, radio, television broadcasting, etc). Exposure assessments are carried-out by national institutions or other nationally recognized independent institutions. The aim of these programs is primarily to verify the compliance with recommended exposure limits for both legal and safety reasons, but they are indeed very important tools to inform the public about the actual levels of exposure to the different RF sources. Most countries also acknowledge some particular concerns of people living in the vicinity of installations emitting EMF and perform on demand, measurements in so-called "sensitive places" (schools, hospitals, etc) and in private homes or offices.

Public participation, on the other hand, which would rather be part of the regulatory process, may help the communication process by bringing about a decision-making process that is open, consistent, fair and predictable. Participation may not necessarily lead to consensus but it can reduce tension and improve the general climate for debate. It can also help to achieve the timely deployment of new EMF technologies while protecting the public health and safety.

Common ways of presenting the results of measurement campaigns are websites and interactive databases on the Internet, accessible to the public. Therein measurements are often displayed in geographical information systems (GIS), with graphical interfaces, and complemented with descriptions of the methods of measurements and subsidiary information on telecommunication technology as well as health and safety issues.

Another type of risk communication initiative concerns the participation of stakeholders in the decision-making on EMF issues. The basis for this participation must be the transparent exchange

of information and the commitment by all parties to engage in a dialogue open to each other's arguments. Under these conditions, public involvement could help to gain mutual trust, which is essential for good communication. A number of EU countries have implemented such participation programmes to give the public a say in the choice of sites for mobile phone antennas. Participating stakeholders may include immediate neighbours, local authorities, health services, network providers and interest groups. Some national initiatives are worth considering be adopted or adapted more broadly. The limited number of experiences applying different participation formats does not, however, permit the definition of a best practice.

Case Studies

The case studies considered are risk communication studies as such, as well as reported initiatives, approaches, and actions that had clearly identified purposes and objectives in answer to specific questions and concerns. The main elements in EMF risk communication are information and education programmes and campaigns. Additionally, measurement campaigns to demonstrate compliance with regulations and public safety requirements, as well as measurements around single sites, are also considered to be valuable risk communication initiatives. Public participation, on the other hand, which would rather be part of the regulatory process, may nevertheless greatly help the communication process.

Information

This first section includes two brief reports, one by Paolo Vecchia of the Department of Technology and Health, National Institute of Health, Rome, Italy (Information Campaigns: Introductory notes), and the other by Tom McManus consultant at the Health and Safety Authority, Dublin, Ireland (A New Approach to EMF Risk Communication in Ireland). Four other contributions follow, the first one Spanish experience about risk communication: From theory to practice by Francisco Vargas Marcos, on behalf of the Advisory Scientific Committee on radio frequencies and Health (CCARS), Spain; the second one is the paper, Information and communication on the electromagnetic fields: analysis and differences in the national and international Internet sites by Claudia Giliberti, Angelico Bedini, both at the ISPESL of National Institute for Occupational Safety and Prevention, Rome, Italy, and Silvana Salerno of ENEA, Roma, Italy. The third one is the report, Representation of mobile phone-related studies in the FEMU EMF-Portal by S. Driessen, D. Dechent, A. Schmidt, R. Wienert, F. Klubertz, and J. Silny, all at the RWTH Aachen University, University Hospital Aachen, Research Center for Bioelectromagnetic Interaction, Aachen, Germany; and the fourth one is the paper, Communicating on EMF with political audiences the UK experience by Michael Dolan, Stuart Eke, Nicola Davies, and Genevieve Dolan, all at the Mobile Operators Association, London, United Kingdom.

Education

In this section we present four selected papers: The first one, Mobile Communication and Children: A Risk Communication Challenge by N. Leitgeb of the Institute of Clinical Engineering, Graz University of Technology in Graz, Austria; the second one, Bavarian School Project with SAR-Measurement Heads by H. Eder of the Bavarian Environment Agency, and E. Vogel of the Bavarian Ministry of the Environment, Public Health and Consumer Protection both in Munich, Germany. The third paper, With educational projects to better evidence based politics and more self-responsibility by Mirjana Moser and Salome Ryf, both at the Federal Office of Public Health, in Bern, Switzerland; and the fourth paper, Advanced Training for Physicians: Mobile Communication and Health Certified Advanced Training Series for Physicians, Psychologists and Public Health Service Employees by Dagmar Wiebusch and Fritz Lauer both at IZMF (Informationszentrum Mobilfunk e.V.), Germany.

Measurement

Four contributions are included in this section: The first one, "Management of the social and environmental impact of Electromagnetic Fields in Italy" by Mario Frullone and Doriana Guiducci, both at the Fondazione Ugo Bordoni, in Roma, Italy; the second one, "RF Exposure measurement campaigns - Between pure facts and practical risk communication" by Christian Bornkessel of IMST GmbH, Germany. The third one is the report, "The monIT Project: Electromagnetic Fields Monitoring in Portugal" by Carla Oliveira, Daniel Sebastião, Diana Ladeira, Luís M. Correia, all at the Instituto de Telecomunicações, Technical University of Lisbon, Portugal; and the fourth one the brief report, "Measurement and Information Series: Confidence by evidence - TÜV and IZMF Examine Mobile Telecommunications" by Dagmar Wiebusch and Fritz Lauer both at IZMF (Informationszentrum Mobilfunk e.V.), Germany.

Participation

This section also includes four contributions: The first one is the report, "Transparency Forum - A Risk Communication Project in Sweden" by L. Mjönes and Lena Hyrke both at the Swedish Radiation Protection Authority in Stockholm; the second one the brief report, "The Bavarian Mobile Phone Pact" by Evi Vogel of the Bavarian Ministry for the Environment, Public Health and Consumer Protection, in Munich, Germany. The third contribution is also a report, "The Dutch model: Public participation in the Installation of mobile Phone Towers" by Rogier Brink of the Antenna Bureau, Netherlands Radio Communications Agency, and Anke Stapels and Ginevra Delfini from the Ministry of Housing, Spatial Planning and the Environment, The Netherlands. The fourth one is the paper, "Public participation in technology evaluation and risk communication" by Horst-Dietrich Elvers and Christof Tannert, both at the Unit Bioethics and Science Communication, Max-Delbrueck-Center for Molecular Medicine in Berlin, Germany.

Concluding remarks

There is no common approach to EMF risk communication that will satisfy all stakeholders. This makes the position of responsible authorities even more challenging when protecting the health of the public, and responding at the same time to public demands for more information, education, measurement and participation concerning these matters. Essential evidence-based information and best practice advice is provided by National scientific institutes, the WHO, and other competent international scientific institutions. The greatest difficulty, however, is that often the majority of the public does not take part in the communication process. So letting aside some highly motivated concerned citizens and action groups, which usually have their own made up opinions, we are left with an apparently silent majority.

People generally start worrying about EMF technologies and possible environmental and health impacts when something happens in their immediate surroundings, e.g. plans for putting up a base station or power line. Then they start gathering information and are usually quickly confronted with negative information about possible health threats, sometimes including alarming reports in the media. It is therefore important to provide people with the right information at the right time.

A crucial trend in our society is the urge for fast and simple responses. Modern media fulfils this demand readily and, thereby, sometimes biased or anecdotic risk understanding is amplified, misrepresenting or even disregarding sound scientific evidence. Despite examples of controversy driven by the interaction between some media and a small number of activists, controversy is an unavoidable and often necessary part of our democratic process. The intelligence and concerns of the public must never be underestimated, and the need for readily accessible, understandable, and accurate information, must be recognized and addressed.

Ideally, risk communication activities should be planned well in advance, must have clear aims and follow a defined protocol, and their development and success be monitored. Only under such conditions their output can be evaluated and may lead to worthwhile recommendations and actions. Having this perspective in mind, a number of remarks and recommendations summarizing the main topics debated during the panel discussions can be made:

- Early planning when communicating about possible risks is advised. It can be done by including risk perception studies to identify, understand, and better respond to public concerns over EMF. Only then risk information will be more accurately targeted to the public needs. Especially, crisis-management programs must be developed and perfected in advance. Once there is a crisis, it is virtually impossible to conduct an effective communication campaign.
- The credibility of the information is improved when it actively involves trusted third parties. Recognised independent experts or representatives from reputable competent institutions might be entrusted to present the scientific consensus rather than personal opinions.
- Information campaigns to foster the public knowledge and understanding of the possible risks and benefits of electromagnetic fields (by providing brochures, leaflets, FAQs, etc), although perceived as "one-way" communication initiatives, information campaigns are the necessary precursors to effective dialogues.
- According to some case studies the impact of information on the public understanding of EMF technologies and their health related issues is unclear. Apparently large, widespread information campaigns may have no effect at all. Two reasons could be advanced to explain this failure: one is that specific individual concerns are not being addressed, the other is that once people have developed an opinion it is highly unlikely they will change their minds in the light of new information or facts. To overcome such limitations a careful planning is essential, identifying people's concerns before hand, and providing up-to-date, readily understandable information.
- Although the input of scientific arguments is highly important, policy makers, experts, and industry should also be open to value-based arguments from the general public. After careful consideration of all, appropriately weighted arguments, in the end however decisions will have to be based on the best available scientific evidence.
- Risk education, e.g. in the form of training courses for medical professionals or schools, is directed to specific groups and therefore needs to be tailored to their particular needs. The training of medical professionals is of particular importance because they enjoy the public trust, and are usually the first contacted with people's questions on health-related matters. School projects, in the other hand, are a good opportunity to promote science and technology literacy in a larger and deeper basis.
- Participation processes involving the public in the siting of mobile phone masts can be important for gaining trust. The stakeholders involved in the participation processes, e.g. the industry, authorities or the public, have interests that do not necessarily coincide. However, an open and transparent process may help to reach a general agreement.
- Participation will not necessarily lead to consensus but it may reduce tension and improve the general climate for debate. It might help to establish a platform for exchanging different views. Even a one-way dialog is considered better than no dialog at all.

- It is difficult to deal with hard-core activists in participation processes. However the arguments of all representative participants should be heard. Their further involvement should only be conditioned to their commitment to an open dialog and the willingness to clearly put forward their arguments and concerns.
- Measuring the emission levels from phone masts and other RF sources, and informing the general public to demonstrate that exposure is indeed below the ICNIRP limits, is generally considered to be a good risk communication practice. Open access to on-line databases has been implemented in many EU countries, taking advantage of the measurements and assessments carried-out by the competent authorities and the network providers to enforce and monitor compliance with current regulations.
- Measurements taken in selected locations can provide the opportunity for trust building due to personal contact and discussions. Therefore, a measurement campaign is half exposure assessment and half a risk communication exercise. Consequently it is important to combine measurement campaigns with information campaigns.

As an overall remark, the paradoxical effects of precautionary measures should be acknowledged. Although their original intention is to deal with scientific uncertainty with regard to the existence of any risk and its possible adverse health effects, studies show that precautionary advice may be interpreted by the public as a signal of the existence of adverse effects. Therefore precautionary measures must be the result of a broad consensus when reasonable doubts of possible harm are supported by sound scientific arguments.

Trust is essential for good communication. It is a key, if not the key factor. If the recipient does not trust the messenger a dialog is not possible. If there is no trust, any risk communication is due to fail. This workshop has shown that there are a number of possibilities to gain or increase trust. With that it provides a valuable tool for future risk communication efforts.