



Issues in Mobile Communications

THEMES FROM THE JANUARY 2004
CONFERENCE ON MOBILE COMMUNICATIONS:
HEALTH, ENVIRONMENT AND SOCIETY

Brussels, Belgium¹

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¹ Organized by the European Commission (EC), GSM Europe (the European Interest Group of the GSM Association — the trade association for GSM operators and suppliers to the GSM industry), and the Mobile Manufacturers Forum (MMF) — an international association of radio equipment manufacturers. Further information available at http://www.gsmworld.com/gsm europe/events/health_seminar/index.html

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Executive Summary

Participants in the January 2004 *Conference on Mobile Communications: Health, Environment, and Society* met to discuss ways to achieve an appropriate balance between protecting public health and ensuring access to the business, social, environmental, and personal benefits delivered by mobile communications technology. Scientists, government officials, regulators, operators, and manufacturers concluded that continuing to share experience and information on regulations and policies for public exposure to radio-frequency electromagnetic fields (RF EMF) is essential as a first step toward achieving this balance and promoting harmonized standards among European Union Member States. They agreed on the importance of coordinating strategies for communication with the public about possible RF EMF risks.

The conference began with different viewpoints expressed about the role of scientific research on RF EMF. Even though there have been repeated findings of no health effects from RF EMF exposure at levels below those set by international standards organizations, scientists explained that it is necessary to continue conducting research to ensure that there are no health effects of actual RF EMF exposure. Some participants were concerned that this would convey an unintended message to the public that research is being conducted to find possible health effects that are there but have not yet been substantiated. Others stressed that interpreting the science accurately and communicating it responsibly to the public are the real issues of concern.

Participants agreed on the importance of effective risk communication, but differed in their approach. Some speakers pointed out the need for coordinated regulations and policies on RF EMF public exposure limits and consistent strategies to communicate risk. Others highlighted efforts already under way to establish open communication among mobile operators, local authorities, and the public. Having little data on the effectiveness of risk communication messages, some fear that eroding public confidence in government

and industry has also affected the mobile communications sector. Consequently, unless risk communication messages come from a credible, trusted source, their effectiveness is doubtful.

There was a general call to gain the public trust by producing a consistent message based on science that is communicated by a credible source of information. A difference of opinion emerged in discussions about trust in the context of the precautionary principle, an approach to risk management in which precautionary measures are taken in the face of uncertain health risks. Some speakers advocated responding to citizens' concerns about possible health effects of RF EMF by taking additional precautionary steps to ensure public health even when there is no evidence that a risk exists. Others were satisfied with having credible sources of information present existing scientific evidence of risk clearly and concisely. To the latter group, the precautionary principle has no place in regulation because its application only creates further doubt and confusion in the public mind. In the middle are those who support the precautionary principle being used as a regulatory tool only in circumstances where there is evidence of a risk but its extent has not been established. The role of research, the effectiveness of risk communication, and the establishment of public trust thus were seen to be interconnected issues affecting the contributions and implications of mobile communications for European business and society.



Introduction

An inaugural conference was held January 20–21, 2004 at the Centre A. Borchette in Brussels, Belgium, to allow experts from all over Europe to share information and opinion on the contributions and implications of mobile communications for health, safety, the environment, and European society.

The *Conference on Mobile Communications: Health, Environment, and Society* brought together over 250 participants from 23 countries. They included officials from European Member States, international governmental and non-governmental organizations, regulatory agencies, and the European Commission, as well as scientists, mobile communications operators, and equipment manufacturers.

Opening the conference, Kaisu Karvala, Chair of GSM Europe and Vice-President of TeliaSonera Brussels, noted that individuals most often mention safety, organization, and productivity as the primary benefits of mobile communications. In fact, European society realizes a net economic gain from mobile communications of 105 billion Euros, or 1% of the national gross domestic product. The mobile communications industry also has opened new markets and created jobs: 500,000 direct jobs and 2.5 million indirect jobs in the European Union thus far. Given the unprecedented pace of technological and social change associated with the introduction of mobile communications, an appropriate balance is needed between protecting public health and ensuring access to the business, social, environmental, and personal benefits delivered by mobile communications technology. The means of achieving this balance was the focus of this conference.

A number of controversial matters were touched upon at the two-day meeting, although contentious debate, anticipated by some, never materialized. It seemed as though participants, obviously listening carefully, needed time to go back and reflect on the information presented. Consequently, the extent of any disagreement will not be known until this

group reconvenes. In the meantime, three issues that emerged from the discussions are worthy of contemplation: the role of scientific research, the effectiveness of risk communication, and the establishment of public trust. It is important to note that these were not topics assigned to individual presenters; however, nearly every speaker addressed at least one of the issues in his or her remarks.


The Role of Scientific Research

Recent reports reinforce earlier findings from expert reviews that there is no evidence of a risk to human health from RF EMF³ exposure at levels below those set by international standards organizations. In light of the current state of the science, is research now being funded as a socio-political response rather than in pursuit of expected or perceived risks?

Conference presenters and participants brought a variety of perspectives to this issue. Scientists concerned about methodological flaws in existing research on RF EMF and gaps in the data called for support of valid, replicable studies. Government officials pointed out various mechanisms they have in place to review, develop, and fund scientific research. Industry representatives emphasized their role in meeting public expectations of responsibility by being open to the need for continued studies and contributing significant funding to the research effort. Nevertheless, an undercurrent of the presentations was rather boldly articulated by a few speakers who questioned the motivation and future direction of RF EMF research: Is the continued research effort scientifically motivated or is it primarily a political response to public concern? Arguments subsequently were put forth, or alluded to, on both sides of this question.

The stage was set by Matti Rajala, Head of Unit in the European Commission Directorate-General (DG) Health and Consumer Protection, who stated that the goal of the EC is to provide reliable risk management and

³ Radio-frequency electromagnetic fields



that the key to doing this successfully is to form conclusions based on data. He did not address, however, whether this means that more research is needed.

The Call for Research

Providing a scientist's perspective, Eric van Rongen, a radiobiologist with the Health Council of the Netherlands, noted that well-established thermal effects of RF EMF form the basis for current human exposure limits, but cited the lack of conclusive evidence either for or against non-thermal effects as an argument in favor of further research in this area. He also highlighted some of the shortcomings in existing studies on the possible health risks of RF RME. For example, he pointed out that many of the epidemiologic studies have been retrospective, and that it is difficult to determine RF EMF exposure from such studies; others have been based on mobile phone subscriptions rather than actual use or exposure. In fact, he claimed that the pervasiveness of methodological flaws and the absence of replication for many studies were reasons to continue research.

Carrying on this line of reasoning, Anders Ahlbom, Professor of Epidemiology at the National Institute of Environmental Medicine, Karolinska Institute, Sweden, observed that concerns about possible RF EMF health effects are spreading very quickly around the world, not as a result of any one study, but because of the perception that our knowledge is still limited. Stressing that ongoing research will address some, but not all, of the issues related to RF EMF and health, he concurred with van Rongen on the need for further research to satisfy concerns that weak, long-term exposure to RF EMF could have an effect through an as-yet-unknown mechanism. And he pointed out the lack of valid data on RF EMF exposure related to base stations.

Mark Bogers, of the European Commission DG Enterprise, told conference participants that over 200 million Euros is invested in research currently, but agreed that further investigation is required. His rationale was

that some research areas are fragmentary and incomplete; hence, he reiterated the call for improved and replicable scientific experiments.

Also agreeing with the scientists were Member State officials Bo Bergner, Technical Director at the National Post and Telecom Agency, Sweden, and Angélique Rocher-Bedjoujou, Deputy of the Head of Legal Affairs of the Agence Nationale de Fréquences, France.

In their presentations, both Bergner and Rocher-Bedjoujou stressed the vital role of government-supported national research programs aimed at improving knowledge about RF EMF exposure limits and human health. In fact, Rocher-Bedjoujou pointed out that France has created a foundation for radio spectrum and health to promote scientific research.

Representing the manufacturers, Michael Milligan, Secretary General of MMF, noted that they participate in funding high-quality research on RF EMF and he called attention to the important role of the World Health Organization (WHO) International EMF Project in coordinating the research efforts. Alan Freeman, Chairman of the GSM Europe Health and Environment Work Group, and Head of RF Health for the UK O₂ Group, stated that operators also continue to financially support substantial independent research programs being carried out at the Member State and European Union level. He did, however, challenge the conference with an alternative view of the social meaning of research, namely, that spending more than 200 million Euros for RF EMF studies in Europe might give the public the mistaken message that there is something to fear.



Contradictory Messages Underlie an Active Research Program

Participants also heard from Michael Dolan, Executive Director of the Mobile Operators Association (MOA), UK, about the AGNIR (Advisory Group on Non-Ionizing Radiation) report, recently released by the NRPB (UK National Radiological Protection Board), which reinforces previous findings that there is no evidence that RF EMF exposure at levels below those set by international standards organizations harms health. Dolan did qualify his statements by emphasizing that operators are open to continued support of scientific research programs.

Picking up on the apparent contradiction between repeated findings of no health effects from actual RF EMF exposure and the call for more research, was Jack Rowley, Director of Environmental Affairs for the GSM Association. Speaking about RF EMF in the context of the societal risk debate, Rowley separated risk assessment into two areas: the estimation of risk, which he acknowledged is the purview of science, and the evaluation of risk, which he presented as socio-political. He recognized that the public wants absolute certainty that there is no risk from RF EMF, but because science cannot demonstrate zero risk, the decision about when the weight of scientific evidence is sufficient and research is “done” will have to be political. Countering van Rongen and Ahlbom, he suggested that much of the science is being driven by public perception. Noting that there have been at least 16 international scientific reviews in the last few years, none of which has documented convincing evidence of a health risk, he questioned whether an increase in research is an appropriate response to public concern. Going one step further, Rowley called attention to van Rongen’s point that a biological effect is not necessarily a negative effect on health, and observed that the considerable amount of money allocated to RF EMF research over the next few years is for biology and related studies. He urged that new studies be designed to support public health decision-making and ended his presentation with a provocative

declaration, namely, that outstanding methodological rigor cannot compensate for a poorly conceived research question.

The role of scientific research thus takes on different meanings. To scientists and those supporting RF EMF research, the role of research is to ensure that there are no possible health effects of RF EMF exposure at levels below those set by international standards organizations. To the public, the role of research is to find possible health effects of RF EMF exposure at levels below those set by international standards organizations. The underlying messages are different, and each group may regard the other’s understanding as incorrect.

Alluding to the confusion, Heinz Zourek, Deputy Director-General of the European Commission DG Enterprise, observed in his keynote speech that general public skepticism is increasing. He defended the right of the public to raise concerns, but stated that the scientific evidence itself is not the issue; rather, it is how the public is approached with the scientific evidence. He cautioned participants to consider the perception of the public versus the perception of the experts regarding the possible risks of RF EMF. Zourek underscored the responsibility of the European Commission to translate scientific results into language that is comprehensible to the public, and stressed the importance of continuous, effective risk communication. It may not be the research activity itself that is the source of the confusion, but how the public receives the information.



The Effectiveness of Risk Communication

There is a great deal of risk communication activity being carried out by the mobile communications industry, Member States, and special interest groups. How can this communication activity be coordinated, and the effectiveness of the messages be assessed?

The issue of risk communication is not so much a controversy as it is a challenge. Presenters agreed on the importance of effective risk communication and called attention to the variety of efforts in this regard. But they also alluded to the challenges—a multitude of risk communication resources but a lack of coordination among them, and a multitude of risk communication messages but no assurance that they are effective.

The stage was set for this issue by Karvala in her opening remarks. Reminding conference participants that risks are inherent in much of what we do, she stated that the key to managing risk is not only to evaluate it accurately but to communicate it effectively. The situation is complicated by the response to the European Council Recommendation on RF EMF public exposure limits, which resulted in a mix of regulations, voluntary agreements, and information campaigns being put into place by Member States.

Coordination of Policies

Noting that regulations and strategies to communicate risk to the public differ among Member States, Bogers expressed concern that the European Union does not speak with one voice when it comes to mobile communications policies. He called for coordination among the Member States to reduce uncertainty for industry and the public. He stressed the importance of being transparent and responsive when providing information to local governments and concerned citizens and acknowledged that there is a strong cultural element to addressing public concern. Emilie van Deventer, Coordinator of Radiation and Environmental Health at the World


Health Organization (WHO), also reminded conference participants about the importance of cultural differences in risk communication and conversations about measures of risk. She cautioned against limiting communication to risk assessment measures and advised tailoring risk communication to cultural background.

Coordination of Communication

Dittmar von Schilling, Head of Division in the Ministry of Economics and Labor (BMWA), Germany, reported results of a BMWA survey that revealed availability of an abundance of informational materials, but a lack of communication between operators, local authorities, and the public. In response to survey findings, a number of administrative measures and voluntary operator commitments have been initiated in Germany. According to von Schilling, a recent annual review has shown that the programs have been very successful; through the efforts of the operators, government, manufacturers, and concerned citizens, the RF EMF debate has calmed down and objective, informed, sensible discussion is now possible.

Commenting that in the UK there are an increasing number of activists who are knowledgeable about base station issues, Dolan stressed that open and effective communication by operators there is crucial. To that end, MOA has adopted the Ten Commitments to Best Siting Practice and engaged the services of an outside consultant to provide a publicly available review of the “processes, controls, and procedures” that the operators adopt in siting base stations. Dolan explained that this implementation review is a critical component of establishing and maintaining public confidence in operators’ actions.

Rocher-Bedjoujou also emphasized the importance of open communication among operators, local authorities, and consumers in France. René Russo, General Delegate of the French Association of Mobile Operators (AFOM), stated that AFOM provides objective information on RF EMF directly to



government officials and the general public, and is committed to educating its members' internal teams and suppliers regarding best practices.

He described voluntary agreements that operators in France are entering into with local governments to ensure a mutual commitment to share information and maintain an open dialogue among elected officials, operators, and the public. They aim to plug the information gap so officials can have answers to citizens' questions.

Peter Wiedemann, of the Research Center Juelich, Germany, agreed with von Schilling that the goal of risk communication is to empower people to make more effective judgments, not only to provide information. Rowley also talked about communication, not education, as the key to allaying public concern. And Milligan stated that key areas of focus for manufacturers include engagement with the public to identify and address their issues, and improvement in communicating information on risk.

Freeman discussed other voluntary self-regulation initiatives being undertaken by GSM Europe mobile network operators to improve communication, cooperation, openness, and transparency with local and national authorities. Mentioning the lack of evidence on the effectiveness of available communication strategies, he implored the European Commission and Member States to establish a robust EMF risk-communication program in response to public confusion over mixed messages.


Uncertain Effectiveness of an Active Risk Communication Program

The only data-driven response to questions about the effectiveness of existing risk communication strategies came from Alnoor Samji, a Director at Market Opinion Research International (MORI). Discussing survey results on public perception in the UK related to mobile phones and base stations, he stated that MORI's data show that an increasing majority of individuals feel that mobile phones are safe and that the benefits outweigh any possible risks. According to Samji, MORI's surveys have shown that concern about alleged health risks of RF EMF, mainly driven by the media, has leveled off at about 25%—more people are concerned about the intrusiveness of the mobile phone.

On the other hand, MORI's data portray a mixed message on effectiveness by revealing a continuing erosion of public confidence in government and mobile operators. A majority of respondents to their recent UK survey felt that government has not done enough to allay fears about possible risks of RF EMF exposure from base stations and mobile phones, an attitude that Samji predicted will be difficult for government and operators to overcome.

The effectiveness of risk communication thus takes on different meanings. To government and industry, effective risk communication means establishing consistent science-based policies for RF EMF exposure limits and coordinating risk communication activities. To the public, effective risk communication means insuring that the information is reliable and that messages come from a credible and trusted source.

In the face of data on eroding confidence in government and industry, it may not be surprising that public skepticism is escalating, even as information grows and risk communication activity increases. Perhaps an absence of coordination among risk communication programs is not the problem, but a lack of credibility among those carrying



out the programs. It may not be how the public receives the information that underlies the confusion, but the public's trust in the source of the information.

The Establishment of Public Trust

Precautionary responses to possible RF EMF exposure are seen by some as a way to build up trust that government is protecting the public health; however, the public does not necessarily seem to be convinced that precautionary measures are sufficient, and instead, is becoming more concerned and confused. How do Member States cultivate an atmosphere of trust in an era when the public expresses little confidence in government or "experts"?

The issue of trust is inextricably linked to risk communication, particularly in a time of increasing public skepticism. Unless risk communication messages come from a credible source, their effectiveness is doubtful. And when government and regulators respond to public concern by recommending that extra precautions be taken, that action seems to add to the confusion.

The stage was set for this issue by Paolo Vecchia, of the Physics Laboratory at the National Institute of Health, Italy, and Chair-Elect of the International Commission on Non-Ionizing Radiation Protection (ICNIRP), who confirmed that gaining the public trust is a major issue for the mobile communications industry.

Trusted Sources of Information

Alain Liberge, Director of Environmental Affairs and Social Responsibility at Orange France, representing French mobile operators association, AFOM, wondered whether the mobile phone industry has fared worse in gaining public trust than other industries because it is portrayed by the media as being too rich and too powerful. He went on to say that because the government receives fees from operators for base station licenses and also


funds research, the public may view this as a conspiracy among the government, industry, and universities.

Karvala admitted that the industry as a source of information is not always credible; it is akin in the public mind to getting information from a political party. Echoing this sentiment, Rowley argued that communicating potential health risks accurately and responsibly is a major obligation of the scientific community. He provided data showing that a significant majority of the EU population view scientists to be a trusted source of information about health. Van Rongen also stressed that it is the responsibility of scientists to evaluate and communicate research appropriately, adding that the media often sensationalize a finding without insuring that it is scientifically relevant. However, Russo mentioned the elusive nature of trust, claiming that the scientific community has seen its credibility undermined recently by debacles such as Chernobyl, asbestos, and BSE (bovine spongiform encephalopathy).

Uncertain Messages Underlie a Precautionary Program

While conference speakers agreed on the importance of trust, they presented different views on the precautionary principle, an approach to risk management in which precautionary measures are taken in the face of uncertain health risks. At issue is the message that the adoption of precautionary measures sends to the public. Does responding with precautionary approaches address public concern about RF EMF exposure or does it lead the public to believe that unsubstantiated risks are real?

Van Deventer explained that WHO advises national authorities to set policies based on scientific assessment of risk, although she acknowledged that there is a growing movement to adopt precautionary approaches to manage health risks when there is scientific uncertainty. Presenting the precautionary framework developed by WHO, she described it as an overarching approach that involves precautionary measures at each step of a



scientifically-driven risk management process. And she stressed that the role of governments in risk communication is to cultivate an atmosphere of trust among government officials, health experts, the general public, and the media, by insuring that a full account of the known facts is given by an independent and trusted professional agency. She stated that the scientific community needs to explain its message but not oversimplify it, and should include opposing results.


Rocher-Bedjoujou presented an example of precautionary measures enacted recently in France. She related that in April 2003, the French government decided to apply the precautionary principle to see whether this would help to decrease public concern about RF EMF exposure. French authorities agree that there are no known health risks connected with base stations when limit values are maintained. On the other hand, following the precautionary principle, they have asked that operators and manufacturers supply a hands-free head set with each mobile phone sold in France, provide SAR (specific absorption rate) information about each phone, and include a note on precautions to reduce RF EMF exposure.

Rowley warned of research showing that informing the public about the scientific uncertainty of a relatively small potential hazard may actually increase concern and thereby jeopardize the true benefits of mobile communications. Karvala questioned the wisdom of taking precautions if there is no danger. Instead, she urged government and industry to work together to produce credible information for the public. Also expressing viewpoints opposed to regulatory use of the precautionary principle were Wiedemann, and Adam Burgess, Lecturer in Sociology at Brunel University, London, and author of *Cellular Phones, Public Fears, and a Culture of Precaution* (2003).

Wiedemann reported the results of two studies on the effects of risk statements, uncertainty, and precautionary measures in relation to the issue of potential health risks of RF EMF. According to his studies, risk communication affects individuals differently

because people favor messages that are in agreement with the views they already hold. Individuals also demonstrate a confirmation bias—information that confirms risks is more valued than information that disconfirms risks. As a consequence, warning messages are more powerful than reassuring messages. Wiedemann cautioned that instead of increasing trust, invoking the precautionary principle may cause suspicion about the limits implemented by authorities to protect health; therefore, clear communication about precautionary measures is critical to avoiding misunderstanding. Simply stated, if precautionary measures are invoked the perception of risk may increase, particularly if there is a lack of clear risk communication.

Burgess claimed that resorting to precautionary measures and scientific inquiries is driven by political factors, not actual scientific uncertainties. In contrast to the WHO viewpoint, he fears that the common interpretation of advising precautionary measures is contrary to the intent. He believes that the public interprets this action not as a sign that there is no evidence of harm caused by mobile phones, but as a justification that there is evidence of existing harm that has not yet been uncovered. He assailed the accommodating, precautionary response as wrong, unjustified, and not able to solve the problem of public concern about RF EMF. He blamed the media for creating “risk entrepreneurs,” promoters of minor, hypothetical, or fictitious risks. And he blamed political authority for refusing to confront and challenge these claims through a process of debate and discussion. Instead, he argued, the politicians adopt a “share your pain” attitude and call for more research or commission another scientific inquiry. Burgess emphasized that he was not advocating dismissal of peoples’ concerns, but calling for an attempt to clarify the issues and put them in context. He sees a collective reluctance to challenge activists’ views and a tendency to equivocate. Burgess warned that if governments implement precautionary guidelines, that act in itself confirms to the public that there is a danger. Any form of risk communication subsequently carried out becomes irrelevant.



Commenting on Burgess' talk, Vecchia agreed that precautionary measures are in themselves a form of risk communication that actually may increase the perception of risk. And Wiedemann stressed that risk communication covers not only words but also actions. However, in a very brief but powerful comment, Bogers defended government's approach when he admonished Burgess for criticizing the mobile communications industry, regulators, and government, and their efforts to respond to public concerns about RF EMF. Interestingly, this was the only expression of such sentiment.

The establishment of public trust thus takes on different meanings. To those who support the precautionary principle as a regulatory tool, establishing public trust means responding to citizens' concerns by taking extra steps intended to ensure public health and safety even when there is no evidence that a risk exists. To those who are opposed to the precautionary principle as a regulatory tool, establishing public trust means responding to citizens' concerns by having credible sources of information present the existing scientific evidence of risk clearly and concisely. To this group, the precautionary principle has no place in regulation because its application only creates further doubt and confusion in the public mind. There may be a middle ground, however, for there are those who support the precautionary principle being used as a regulatory tool only in circumstances where there is evidence of a risk but the extent of the risk has not been established.

Discussions that began with questions about the role of scientific research in relation to the possible health risk of RF EMF led to considerations of interpreting the science accurately and communicating it responsibly, and ended with the call to gain the public trust by producing a consistent message based on science and communicated by a credible source.

Next Steps

Throughout the conference, an underlying theme of harmonization of RF EMF exposure standards kept popping up. Because Member States are free to adopt their own laws and regulations that may provide for a greater level of public protection from RF EMF exposure than recommended by the EC, Europe continues to see a patchwork of rules and policies instead of coordinated and harmonized standards and strategies, as both Bogers and Milligan pointed out. Nearly all conference participants agreed, in the end, that coordination would reduce uncertainty for industry and for the public.

The consensus at the conclusion of the second day was that the dialog should continue. Participants called for a conference of this type to be an ongoing event. Even if harmonization of RF EMF public exposure standards among Member States is an impractical short-term goal, presenters and participants agreed that sharing of experience and information among scientists, government officials, regulators, operators, and manufacturers is critical.

FURTHER INFORMATION AVAILABLE AT:

http://www.gsmworld.com/gsm europe/events/health_seminar/index.html

Mobile Manufacturers Forum

<http://www.mmfa.org>

**European Commission DG Enterprise and Information Society
European Commission DG Health and Consumer Protection**

<http://www.europa.eu.int>

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