

## **WHO'S STANDARDS HARMONIZATION PROGRAM**

Dr MH Repacholi World Health Organization, Geneva, Switzerland

### **Introduction**

In November 1998, WHO commenced a process of harmonization of electromagnetic fields (EMF) standards worldwide. Over 45 countries and 8 international organizations are involved in the International EMF Project. Thus the Project provides a unique opportunity to bring countries together in a logical process to better define any health risks associated with EMF exposure and to encourage the development of harmonized exposure limits and other control measures that provide the same level of health protection to all people.

This WHO initiative to harmonize EMF standards is a response to the fact that many countries from the former Soviet Union and elsewhere are now considering new EMF standards. Globalization of trade and the rapid introduction of mobile telecommunications worldwide, have focused attention on the large differences existing in standards limiting exposure to EMF. Differences in the EMF exposure limit values in standards in some Eastern European and Western countries are, in some cases, over 100 times. This has raised concerns about their safety and has led to public anxiety about increasing EMF exposures from the introduction of new technologies.

Protecting populations against potentially hazardous agents is part of the political process so there is no reason to expect that all jurisdictions will choose exactly the same levels of protection. It is accepted and expected that different countries, and even different jurisdictions within a single country, may sometimes choose to provide different levels of protection against environmental hazards, responding to their citizens' wishes.

However, the disparities in EMF standards around the world do not arise from this fact alone. They have arisen in large part from different interpretations of the scientific data that underlie all of the standards and using different philosophies for public health standards development. For example, exposure guidelines in Russia and former Warsaw Pact countries are very different from those in Western Europe and the United States both in the exposure limits themselves, and in the scientific data that these standards are based on. In addition there are great differences in the way scientists in these different regions interpret risk data and the nature of environmental risks. Large differences in EMF exposure guidelines might reflect, in part, deficiencies in communications among scientists between different regions.

It will take some years before this activity is complete, but it is hoped that the process will be finalised before the formal assessment of EMF health risk assessments by WHO and the International Agency for Research on Cancer (IARC). Thus the next generation of standards would be able to incorporate this health risk assessment information within the same harmonized standards framework.

### **Benefits of Harmonized International EMF Standards**

Since much recent technology uses various parts of the electromagnetic spectrum, there are many benefits to having harmonized standards for EMF exposure. These are listed below.

- Increased public confidence that governments and scientists agree on health risks
- Reduced debate and fears about EMF
- Everyone protected to the same high level
- Economic benefits to trade which result in better health care

### **Strategy for Harmonization**

**Objective:** The purpose of this activity is work towards, and hopefully achieve, international agreement on a framework for developing guidelines on protection of the public and workers from exposure to EMF. EMF is defined as electromagnetic fields in the frequency range 0 to 300 GHz.

**Components of the Framework:** Components that address the framework are:

- Standard concepts and terminology
- Criteria used to evaluate research results for standards development.
- Requirements for a scientific rationale to support limits.
- Model for developing standards.
- Methods for determining compliance.
- How to evaluate inconsistencies and gaps in the evidence
- When research data are absent in particular frequency ranges, how and with what degree of confidence can results be extrapolated to other frequencies or intensities?
- How should precautionary approaches be considered if needed?

**Workplan:** Development of the framework will be carried out by working groups formed to address the key components listed above. Working group meetings will be held, generally in conjunction with scientific meetings in key geographical regions that will allow the input of scientists and government officials in those regions.

One goal of setting up the working groups is to enhance the quality of communication among scientists and government officials, in examining the scientific basis for the standards and the assumptions that underlie them.

Working groups will be formed to address the following topics:

**WG1:** Standard concepts and terminology

**WG2:** Criteria used to evaluate research results for standards development. Requirements for a scientific rationale to support limits, and a comparative analysis of the different scientific rationales for various standards.

**WG3:** Model for developing standards. Safety factors: how should they address scientific uncertainties in the research database and imprecision in the techniques used for exposure assessment?

**WG4:** Should social and economic impacts be considered? How should precautionary approaches be devised if needed?

Draft papers that address components listed above will be prepared and presented to the working groups as a basis for discussion. Working groups will discuss their topics thoroughly and draft recommendations in their report. Drafts will be circulated for comment for approval by representatives of all countries involved in the standards harmonization process.

***Schedule of work:*** The first phase of the work will be by the formation of ad hoc working groups at scientific meetings held in key geographical regions around the world. A schedule of scientific meetings has been tentatively arranged as shown below. Further details will be given on the WHO EMF Project web page at: [www.who.int/emf/](http://www.who.int/emf/)

Scientific conferences tentatively organized to include working group meetings in key regions.

1. 2nd International EMF Seminar in China: Electromagnetic Fields and Biological Effects: Xi'an, China 23-26 October 2000.
2. WHO EMF Standards Harmonization Meeting: Brooks Airforce Base, San Antonio, Texas 13-14 November 2000
3. WHO/Peru Government regional seminar: Bioeffects and EMF Standards Harmonization, Lima, Peru 7-9 March 2001
4. WHO EMF Standards Harmonization regional meeting Bulgaria 30 April - 4 May 2001
5. WHO EMF Biological Effects and Standards Harmonization regional meeting South Korea 22-24 October 2001
6. WHO EMF Biological Effects and Standards Harmonization regional meeting Amman, Jordan early 2002 (To be arranged)
7. WHO EMF Standards Harmonization Conference (final meeting) Geneva, Switzerland, late 2002

### **ICNIRP Guidelines**

The European Commission has adopted the ICNIRP guidelines on exposure limits. Many countries have adopted or are in the process of adoption of the ICNIRP guidelines. Other countries preparing for or aspiring to membership of the European Union will be considering the ICNIRP guidelines. It is reasonable that the ICNIRP Guidelines be used as a basis for drafting an internationally acceptable framework for standards.

### **Further information**

Dr Michael H Repacholi

Coordinator, Occupational and Environmental Health

Protection of the Human Environment (PHE)

World Health Organization, CH-1211 Geneva 27, Switzerland

Tel: +41 22 791 3427, Fax:+41 22 791 4123, E-mail: [repacholim@who.int](mailto:repacholim@who.int)