THE INTERNATIONAL EMF PROJECT

Progress Report
June 2012-2013

World Health Organization
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1. OVERVIEW

In May 1996, in response to growing public concern in several Member States over possible health effects from exposure to an ever-increasing number and diversity of EMF sources, the World Health Organization (WHO) launched an international project to assess the health and environmental effects of exposure to electric and magnetic fields, which became known as the International EMF Project.

The International EMF Project brings together current knowledge and available resources of key international and national agencies and scientific institutions in order to develop scientifically-sound health risk assessments of exposure to static and time varying electric and magnetic fields in the frequency range 0-300 GHz.

This Project has been devised to provide authoritative and independent peer-review of the scientific literature. Since its inception, the objectives of the EMF Project have been to:

- review the scientific literature on biological effects of EMF exposure;
- identify gaps in knowledge requiring research that will improve health risk assessments;
- encourage a focused agenda of high quality EMF research;
- formally assess health risks of EMF exposure,
- encourage internationally acceptable harmonized standards;
- provide information on risk perception, risk communication, risk management; and,
- advise national programs and non-governmental institutions on policies for dealing with the EMF issues.

1.1. MEMBERSHIP

The EMF Project is open to any WHO Member State government, i.e. department of health, or representatives of national institutions concerned with radiation protection. Since the commencement of the EMF Project, over 50 national authorities have been involved. In the past year, several countries have been in contact to join the Project, including Argentina, Belarus, Dominican Republic, Iraq, Nigeria, Oman, Rwanda, Serbia, Turkey and Singapore.

New representatives have been delegated by their governments to the 18th IAC meeting, including Oman, Serbia, Belgium, Turkey, Nigeria, Singapore, Iceland, Australia and Switzerland.

While further outreach is planned, the challenge remains to locate the appropriate governmental contact at country level, with interest and responsibility regarding EMF protection. In some Member States, Ministries other than the Ministries of Health may show interest, such as the Ministry of Industry or of Energy (dealing with electricity applications), the Ministries of Telecommunications (e.g. mobile phones), or Transport (radar equipment for air navigation) or Environment.

Oversight of the Project is provided by the International Advisory Committee (IAC). The IAC is composed of members of international organizations, WHO collaborating
centres, and national authorities from all regions of the world. The IAC meets once a year to discuss national activities, current research programmes, legislation and public concern, and advises the International EMF Project on its activities.

The objectives of the IAC are

- to provide oversight on the conduct of the Project: review outputs of the Project, including scientific information related to public and occupational health, and management of the EMF issue
- to provide a forum for peer discussion on dealing with the health concerns raised by exposure to EMF fields.

Over the last 18 years, activities have closely followed the original work plan, and most activities have or are being implemented. The Department of Public Health and Environment is committed to ensuring that the work of the International EMF project continues subject to funding.

1.2. COLLABORATION

The EMF Project has formal collaboration with different entities, i.e. non-governmental organizations (NGOs), international organizations and WHO collaborating centres (see below for details). It also cooperates in an ad-hoc manner with other institutions (e.g. co-sponsoring of meetings) and with individual experts.

International organizations

A number of international agencies are involved in the Project ([http://www.who.int/peh-emf/project/intorg/en/index.html](http://www.who.int/peh-emf/project/intorg/en/index.html)). Over the reporting period, there has been active collaboration with several of them.

The Agency for Research on Cancer (IARC), a specialized institution of WHO, based in Lyon, France, has strong links with the International EMF Project. Its mission is to coordinate and conduct research on the causes of human cancer, the mechanisms of carcinogenesis, and to develop scientific strategies for cancer control. The Agency is involved in both epidemiological and laboratory research and disseminates scientific information through publications, meetings, courses, and fellowships.

Two Sections within IARC have been active in EMF-related issues, i.e. the Section of Environment and Radiation and the Section on Monographs. Over the last year, the ENV Section has published several papers on electromagnetic fields. Under the auspices of the Section on Monographs, Volume 102 of the IARC Monographs on “Non-Ionizing Radiation, Part 2: Radiofrequency electromagnetic fields and radar (including mobile telephones)” was published.

The International Labour Office (ILO), a UN agency in Geneva, works closely with WHO in the area of occupational exposure to radiation, both ionizing and non-ionizing. Dr Shengli Niu from the Programme on Safety and Health at Work and the Environment (SafeWork) assured ILO’s continued interest in co-publishing the upcoming Environmental Health Criteria on radiofrequency (RF) fields.

The International Telecommunications Union (ITU) is the leading United Nations agency for information and communication technology issues, and the global focal
point for governments and the private sector in developing networks and services. All three of its sectors have been involved with the WHO EMF Project through the Telecommunication Standardization Sector (ITU-T) Study Group 5 - Protection from Electromagnetic Environment Effects, the Radiocommunication sector (ITU-R), and the Telecommunication Development Sector (ITU-D). A couple of meetings were held in Geneva to discuss joint activities.

WHO was invited to give a keynote address at an ITU-T Workshop on "Human Exposure to Electromagnetic Fields (EMFs), in Turin, Italy on 9 May 2013.

Active collaboration is ongoing with the International Commission on Non-Ionizing Radiation Protection (ICNIRP) - an NGO in formal relations with WHO (for more information, see http://www.who.int/civilsociety/). Within the reporting period, ICNIRP started its triennial mandate, based on a work plan jointly formulated for the next 3 years. Dr van Deventer was invited to participate and present WHO activities at the ICNIRP Main Commission meeting in Rome (October 2012).

A meeting organized jointly sponsored by ICNIRP and WHO was held in Bonn, Germany, on December 2, 2012. The workshop on “Non-Ionizing Radiation Protection in Medicine” preceded the International Conference on Radiation Protection in Medicine focusing on “Setting the Scene for the Next Decade” organized by the International Atomic Energy Agency (IAEA) and co-sponsored by WHO. This ICNIRP/WHO workshop was hosted by the German Ministry for the Environment, Nature Conservation and Nuclear Safety. On the same day and in parallel to the ICNIRP/WHO workshop, a WHO Workshop on Radiation Risk Communication in Paediatric Imaging also took place.

The workshop on “NIR in Medicine” covered medical as well as cosmetic applications from all frequency ranges of the non-ionizing electromagnetic spectrum as well as ultrasound. The benefit from NIR use in medicine, such as MRI for diagnostic and interventional imaging, was well recognized, especially in view of the alternative use of ionizing radiation. However, while a key aspect of ionizing radiation protection is optimization through dose reduction, the development of NIR technologies still focuses on image quality improvements without consideration of the ever increasing exposure levels for both health care workers and patients. Also the increasing use of NIR applications such as ultrasound and intense pulsed light (IPL) for cosmetic and wellness business by lay persons call for a closer look at health and safety aspects.

The workshop reviewed the current status of radiation protection as well as trends in development, identify gaps in knowledge of possible health effects and address patient as well as medical staff safety.

Over the last year, no activity was performed with the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities (DG Employment) based in Luxembourg, regarding activities related to occupational exposure to EMF, and in particular the EC Directive 2004/40/EC. WHO is keen to engage with new staff to follow up on a long-planned brochure on occupational exposure.
WHO is looking forward to renewed links with the European Commission Directorate-General for Health and Consumers (DG SANCO) and Directorate General for Research and Innovation (DG Research) based in Brussels, regarding activities related to EMF.

**WHO collaborating centres**

A WHO collaborating centre (CC) is an institution designated by the Director-General to form part of an international collaborative network carrying out activities in support of the Organization's programme at all levels. Such designation follows a formal procedure within WHO, with specified terms of reference for a period of 4 years and annual reporting of joint activities. With effect from 1 June 2007, processing of designations, re-designations and discontinuations of CCs are being done electronically (http://intranet.who.int/homes/kcs/collaborating_centres).

The EMF Project works with the following scientific institutions that are formally recognized as collaborating centers of WHO (http://www.who.int/peh-emf/project/Org_Stru/en/index.html). The topic of electromagnetic fields is one of several areas within radiation on the work plan of these CCs

- Australian Radiation and Nuclear Safety Agency, ARPANSA (Australia)
- Institut für Strahlenhygiene, Bundesamt für Strahlenschutz, BfS (Germany)
- Health Protection Agency - Radiation Protection Division (UK) – now Public Health England (PHE) since 1 April 2013 – awaited the new entity to renew designation

### 1.3.  **SECRETARIAT**

The Project is managed through the Radiation Programme which has the responsibility for activities related to ionizing and non-ionizing radiation. This Programme is located at WHO Headquarters in Geneva, within the Department of Public Health and Environment (PHE). PHE has for main objective to "promote a healthier environment, intensify primary prevention and influence public policies in all sectors so as to address the root causes of environmental threats to health" as described in the Medium-Term Strategic Plan (MTSP) of the organization for 2008-2013 under Strategic Objective 8.

While the priorities, strategic objectives and expected results of the Organization are delineated in the MTSP 2008-2013, more specific short-term programmatic outputs are described in two-year work plans. The current reporting biennium spans 2012-2013.

Ahead of 2014, WHO is reforming to be better equipped to address the increasingly complex challenges of the health of populations in the 21st century. The process of reform is Member State-driven and inclusive (http://www.who.int/about/who_reform/en/).

The Secretariat of the WHO International EMF Project facilitates all activities of the Project and provides regular reports to the International Advisory Committee and contributors to the Project. WHO Regional Offices participate where possible and facilitate communications with countries in their respective regions. WHO staff provide coordination and project management and respond to enquiries. They
organize and conduct review group meetings, prepare and publish reports and brochures, organize the preparation and publication of monographs and scientific reports, and liaise with consultants, collaborating agencies and key institutions to prepare material as required.

A key challenge has been and remains to ensure alignment between activities planned and the resources mobilized, both human and financial.

**Personnel**
Dr van Deventer is the Team Leader of the Radiation (RAD) programme, with administrative responsibility for both the Ionizing Radiation team and technical responsibility for the Non-Ionizing programme (which includes the WHO EMF Project and the INTERSUN UV Project) and the International Radon Project.

Since 11 March 2011, following the earthquake and tsunami in Japan, Dr van Deventer has been heavily involved in technical activities relating to this emergency, including the development of


In view of this situation, the EMF Project continues to encourage Member States to promote direct involvement of their staff in the work of the International EMF Project through different means, including secondment. Other mechanisms are available through Junior Professional Officer (JPO) programs¹ or through WHO's Internship Programme which provides a wide range of opportunities for students to gain insight into the work of WHO. Every year a limited number of places for internships are available [http://www.who.int/employment/internship/en/](http://www.who.int/employment/internship/en/).

**Funding**
WHO receives its funding principally through assessed contributions from Member States and voluntary contributions. With the economic crisis over the past couple of years, assessed contributions have become a smaller proportion of the total resources received, and reliance is increasing significantly on specified voluntary contributions provided by partners and donors.

All contributions and accounting are audited by WHO. For any contribution, 13% of expenditure is usually deducted by WHO to cover administrative costs related to

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¹ The Junior Professional Officer (JPO) Programme provides young professionals who wish to pursue a career in development with hands-on experience in multi-lateral technical co-operation. JPOs are sponsored by their respective governments. Currently the following 11 donor governments sponsor JPOs for WHO: Austria, Belgium, Denmark, Finland, France, Germany, Italy, Japan, Luxembourg, Republic of Korea and Sweden
administering the funds, in accordance with World Health Assembly Resolution WHA 34.17.

The technical Unit may follow up on any funding interest from the part of Ministries of Health, or other governmental bodies. The EMF Project is currently solely funded through voluntary contributions from participating countries. These contributions cover both the activities of the Project and salaries of the personnel. For amounts under US$ 50 000, a standard Letter of Agreement of Contribution (LAC) is sufficient if the donor is simply making a contribution to support existing unspecified activities, provided however that no conditions are attached to the contribution. Unspecified contributions provide WHO with greater management flexibility and does not need to issue a certified financial statement.

Several governments have given direct contributions to the WHO EMF Project, either on a periodic or ad-hoc basis. For the period June 2012 to May 2013, the following governmental entities have provided funding to the WHO International EMF Project:

- Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), Australia
- Agency for Food, Environmental and Occupational Health and Safety (ANSES), France
- Ministry of Environment, Israel
- Ministry of Health, New Zealand
- Health and Safety Executive, United Kingdom
- Swedish Radiation Protection Authority, Sweden
- Federal Office of Public Health, Switzerland

Some countries provide financial support for specific earmarked activities within the Project. For example, this year, the French Agency for Food, Environmental and Occupational Health and Safety (ANSES) generously hosted an International Stakeholder Seminar on Radiofrequency Policies with over 110 participants and the 18th International Advisory Committee meeting of the Project.

Other countries provide in-kind contributions in the form of staff time. This is the case of the Health Council of the Netherlands, and the UK Public Health England for the Environmental Health Criteria on RF.

2. RISK ASSESSMENT AND SCIENTIFIC ACTIVITIES

The primary goal of the International EMF Project is to assess the health risks from EMF within the frequency range 0 to 300 GHz and to develop policy options for protection of people from EMF exposure. The key scientific objectives of the Project are to:

- Assess the scientific literature and make a status report on health effects,
- Incorporate research results into WHO’s Environmental Health Criteria (EHC) monographs where formal health risk assessments are conducted on EMF,
- Identify gaps in knowledge needing further research,
Encourage a focused research program in conjunction with funding agencies and the global scientific community.

2.1. RESEARCH EVALUATION

Environmental Health Criteria (EHC)
The health risk assessments related to chemical, biological and physical agents developed by WHO are published in the Environmental Health Criteria (EHC) series (http://www.who.int/ipcs/publications/ehc/en/). For over 20 years, WHO has addressed possible health effects from exposure to EMF through three monographs on extremely low frequency (ELF) fields (1984), static and ELF magnetic fields (1987), and radiofrequency (RF) fields (1993).

The EHC monographs are usually revised if new data are available that would substantially change the evaluation, if there is public concern for health or environmental effects of the agent because of greater exposure, or if an appreciable time period has elapsed since the last evaluation. Three monographs spanning the 0-300 GHz EMF frequency range have been planned: static fields (0Hz), ELF fields (up to 100 kHz) and RF fields (100 kHz – 300 GHz). So far, the EMF Project has developed the first two volumes on Static Fields and ELF fields. These documents were developed following the publication of the IARC monograph on Non-Ionizing Radiation, Part 1: Static and ELF fields (2002). The IARC monographs provide a hazard identification regarding cancer, while the EHCs represent a health risk assessment of all studied (published) health endpoints, including the four classical steps of (i) hazard identification, (ii) exposure assessment, (iii) dose-response assessment and (iv) risk characterization.

EHC on Radiofrequency fields
Following on the publication of the INTERPHONE study (May 2010) and the IARC classification of RF fields (May 2011), the health risk assessment of radiofrequency fields by WHO was started with a kick-off meeting in January 2012. A core group of experts has been gathered to help with the development of the monograph. They, in turn, have enlisted the help of close to 30 experts to develop different sections of the first draft.

The WHO Environmental Health Criteria monograph on RF fields will be based on published peer-reviewed data, as well as the ICNIRP review of scientific literature on the health effects of RF fields commissioned by WHO (July 2009).

Monthly conference calls have been held over the past year and a half. A face-to-face meeting was convened in The Hague in March 2013. A timeline was developed as follows:

- **30 September 2013**: Upload first draft on WHO website for public consultation
- **15 November 2013**: Deadline for comments
- **Mid-February 2014**: Second draft ready for circulation to the Task Group
- **Second half of April**: Convene Task Group

Resource mobilization is key to fund this work in order to bring it to fruition. A few countries have responded with targeted contributions.
2.2. RESEARCH COORDINATION

To avoid unnecessary duplication of research effort and to make sure that all important questions are being studied, research coordination on a global level is important. To that end, the WHO International EMF Project has been providing such an umbrella for worldwide coordination and exchange of information about planned and ongoing projects.

**Research agenda**

From its inception, the WHO International EMF Project has strived to identify gaps in knowledge needing further research to make better health risk assessments, and to encourage a focused research programme in conjunction with funding agencies (http://www.who.int/peh-emf/research/agenda/en/index.html).

For radiofrequency fields, the latest EMF Research Agenda published in 2010 (http://whqlibdoc.who.int/publications/2010/9789241599948_eng.pdf) has been taken up by several national funding agencies, e.g. the Mobile Telecommunications and Heath Research (MTHR) Programme of the United Kingdom, the French agency ANSES and the Australian Centres of Research Excellence in Population Health Research (2012).

**WHO input to national agencies**

The EMF Project actively works with international donors and national authorities to review, promote, and fund research topics identified by WHO. Dr van Deventer served on the Programme Committee Management of the Mobile Telephone Health Research program (MTHR) in the United Kingdom and was later invited to serve on the Research Initiative on Health and Mobile Telecommunications (RIHMT) in the Department of Health Policy Research Programme (April 2013). She has recently been renewed for a second 3-year term as an observer on the Swedish independent expert group on EMF, commissioned by the Swedish Radiation Safety Authority.

3. RISK MANAGEMENT ACTIVITIES

WHO’s International EMF Project provides a unique opportunity to bring countries together, identify criteria for science-based standards setting and encourage the establishment of exposure limits and other control measures that provide the same or similar level of health protection for all people.

The key risk management objectives of the Project are to:

- facilitate the development of internationally acceptable standards for EMF exposure,
- provide information on the management of EMF protection programs for national and other authorities, including monographs on EMF risk perception, communication and management, and
- provide advice to national authorities, other institutions, the general public and workers, about potential hazards resulting from EMF exposure and possible mitigation measures.
3.1. STANDARDS DATABASE

A number of national and international organizations have formulated guidelines establishing limits for occupational and residential EMF exposure. The International EMF Project has provided information on worldwide EMF standards in a web-accessible database which was set up in 2001 and revised in 2004. (http://www.who.int/docstore/peh-emf/EMFStandards/who-0102/Worldmap5.htm). However, it is on an obsolete website, and a revised version has been developed.

A new resource, the Global Health Observatory (GHO), has been developed on the WHO website over the past year (www.who.int/gho). The GHO is WHO’s portal providing access to data and analyses for monitoring the global health situation. This new tool provides a harmonized approach to a great variety of data previously in different formats and databases scattered around the WHO website. After an analysis of the GHO site, it was assessed that it can provide a number of the features that we wish to incorporate in the database, e.g. interactive maps, export of data into Excel, etc. A meeting of the Steering Group met to finalize the survey questionnaire and meet with the GHO staff in Geneva in February 2013.

The survey, that closely aligns with the content on the database, was sent to all IAC members. The results are currently being compiled, and will be discussed at the next IAC meeting with a view to developing comprehensive country profiles with more specific national information.

3.2. LOCAL AUTHORITIES BROCHURE

To help municipalities, a brochure on Wireless Networks for local authorities has been developed that provides them with information they need to plan and approve the installation of mobile phone base stations and to respond to public enquiries. The Brochure is also intended to provide information on levels of RF fields and risks of exposure to all current wireless network fields.

Over the past year, comments were received on Draft 5 and compiled by Martin Gledhill from New Zealand. A new version is being circulated prior to the IAC meeting with deadline mid-July for comments. ITU has shown some interest in co-publishing such a brochure, should the content be appropriate for their purposes.

3.3. MODEL LEGISLATION

The EMF Project has developed a Model Act and Model Regulation that provide the legal framework to provide this protection. This document was produced to assist countries that do not yet have appropriate legislation to protect their population. The Model Legislation follows the widely accepted practice among lawmakers of setting out an enabling Act which permits the responsible Minister to subsequently issue Regulations, Statutory Orders or Ordinances, as appropriate, to deal with specific areas of concern.

Over the past year, Nigeria has used the document to develop a National Bill on Electromagnetic Fields Human Exposure, which was discussed in a Public Hearing in
4. RISK COMMUNICATION ACTIVITIES AND RESOURCES

4.1. ENQUIRIES

A large number of enquiries are sent to the EMF Project from the general public, the media and governments. Depending on the nature of the enquiries, these are usually handled by the Project staff or by the communications officers of WHO. Technical support is regularly needed - and given - as requests in other languages are often forwarded to IAC members for translation and/or response.

4.2. WEBSITE INFORMATION

In December 2010, the corporate WHO website underwent a major visual redesign to improve accessibility, usability and branding. The main pages currently provide information in 6 languages (Arabic, Chinese, English, French, Russian, and Spanish).

EMF Home page
With the rebranding of the WHO site, the EMF Project page has changed in look but not as much in content. Advice and help will be sought from the IAC for a redesign plan.

National contacts and information
Because many enquiries to the EMF Project are of a local nature, a country-focused database of information that lists the Member States of the EMF Project has been set up. Thanks to the input of the IAC members (http://www.who.int/peh-emf/project/mapnatreps/en/) who provide annually updated information for their respective pages, this has proved to be a very useful tool worldwide. Over the past year, several new country pages were built (e.g. Iceland, Argentina).

4.3. WHO PUBLICATIONS

The publications of the EMF Project are reviewed by the International Advisory Committee before seeking formal approval by WHO management. Recent documents are available electronically for download on the Project’s website. Some of the materials are available free of charge, while priced publications are on sale through the WHO Online Bookstore http://apps.who.int/bookorders/.

WHO Press (WHP) receives regular requests for permission to translate our EMF fact sheets and publications. It usually grants formal permission to translate and reproduce WHO documents subject to the following conditions:
- This is a non-exclusive permission to translate and reproduce a specific item(s).
- The Translation shall be faithful to the original English text and rendered into good literary and scientific language.
- The material should not be translated and reproduced for use in association with commercial nor promotional activities.
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- Permission is given to use WHO materials so long as it is not suggest that WHO endorses any specific company or products.
- The WHO logo and emblem shall not be reproduced.
- It is ensured that the original WHO source is appropriately acknowledged with the appropriate bibliographical reference.

Since the Project's inception, translations were encouraged, many of which being undertaken by members of the IAC. These translations have proven to make the EMF Project a web site well visited over the years. ([http://www.who.int/peh-emf/publications/facts/factsheets/en/index.html](http://www.who.int/peh-emf/publications/facts/factsheets/en/index.html)).

**Note:** Information about the translation of WHO health information products by external entities can be found at [http://www.who.int/about/licensing/translations/en/index.html](http://www.who.int/about/licensing/translations/en/index.html). A link at the bottom of the page is the online form to be submitted [http://www.who.int/about/licensing/translation_form/en/index.html](http://www.who.int/about/licensing/translation_form/en/index.html).

**Fact sheets**

Simple, easy to read information is provided through fact sheets that are formally approved by the Director General's Office. The latest EMF Fact Sheets can be found on the corporate WHO Media Centre website, which is aimed primarily at the press and general public ([http://www.who.int/mediacentre/factsheets/en/](http://www.who.int/mediacentre/factsheets/en/)). These include the following Fact sheets:

Over the past year, several fact sheets have been renamed as backgrounders. A discussion of the number and topics of new possible fact sheets is tabled at the 18th IAC meeting.

4. 4. **MEETINGS**

WHO staff hosted several meetings with delegations from different countries:

- Dr Steven Solomon, ARPANSA, 16 July 2012
- Indian delegation, 19-29 March 2013
- ANSES delegation, 27 March 2013

Dr van Deventer also participated in a number of local, national and regional scientific and coordination meetings during the reporting period:

<table>
<thead>
<tr>
<th>When</th>
<th>Where</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 8, 2012</td>
<td>Geneva, SWITZERLAND</td>
<td>Bi-annual Meeting of the Swedish Radiation Safety Authority Independent Expert Group</td>
</tr>
<tr>
<td>June 27-28, 2012</td>
<td>Lagos, NIGERIA</td>
<td>First West African Conference on EMF Exposure and Health</td>
</tr>
<tr>
<td>October 30-31, 2012</td>
<td>Rome, ITALY</td>
<td>Main Commission meeting of bi-annual meeting of the International Commission on Non-Ionizing Radiation Protection</td>
</tr>
<tr>
<td>November 6-7, 2012</td>
<td>Stockholm, SWEDEN</td>
<td>Bi-annual meeting of the Swedish Radiation Safety Authority’s Scientific Council on EMF and Health</td>
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Note that this is not an exhaustive travel list as Dr van Deventer also covers ionizing radiation (including Fukushima-related work and radon activities) and UV activities.

4.5. UPCOMING MEETINGS

- BioEM2013, organized by the Bioelectromagnetics Society (BEMS) and the European BioElectromagnetics Association (EBEA) Thessaloniki, Greece, 10-14 June 2013  
- EHE2014 - 5th International Conference on Electromagnetic Fields, Health and Environment, Porto, Portugal (date TBD)  
  [http://www.irpa.net/](http://www.irpa.net/)
- Fourth Asian and Oceanic Congress on Radiation Protection (AOCRP-4), May 12-16 2014, Kuala Lumpur, Malaysia  