ICNIRP
International Commission on Non-Ionizing Radiation Protection
http://www.icnirp.de/

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Abstract

The International Commission on Non-Ionizing Radiation Protection (ICNIRP) is an independent scientific organization responsible for providing guidance and advice on the health hazards of non-ionizing radiation exposure.

ICNIRP is an independent group of experts established to evaluate the state of knowledge about the effects of NIR on human health and well being, and, where appropriate, to provide scientifically based advice (guidelines) on limiting exposure. For other methods of protection against suspected harmful effects of NIR, the evaluation of literature by ICNIRP may serve as a valuable input. ICNIRP succeeded the International Non-Ionizing Radiation Committee (INIRC) of the International Radiation Protection Association (IRPA) in 1992 and still retains a close association with the latter.

ICNIRP, as an international scientific advisory body, does not address social, economic or political issues. Membership of ICNIRP is limited to experts who are not affiliated with commercial or industrial enterprises. Thus, ICNIRP is free of vested commercial interest.

ICNIRP is the formally recognised non-governmental organisation in NIR protection for the World Health Organization (WHO), the International Labour Organization (ILO) and the European Union (EU). It maintains a close liaison and working relationship with other scientific bodies. These include the International Electrotechnical Commission (IEC), the European Committee on Electrotechnical Standardisation (CENELEC), the European COST Action, the International Commission on Illumination (CIE), the American Conference of Governmental and Industrial Hygienists (ACGIH), the International Standards Organization (ISO), the International Commission on Occupational Health (ICOH), the Institute of Electrical and Electronic Engineers (IEEE) and the US National Council for Radiation Protection and Measurement (NCRP). ICNIRP also enters into consultation with IRPA national radiation protection societies.

ICNIRP continuously monitors and periodically carries out critical reviews of the scientific literature concerned with the physical characteristics of NIR, sources and possible biological and adverse health effects. In doing so, ICNIRP limits its surveillance to published original scientific papers and reports that are generally available. ICNIRP performs such critical scientific analysis by evaluating the relevance, scientific quality and credibility of each report. To assist in this ongoing review process, ICNIRP has formed a number of scientific Standing Committees whose membership includes non-ICNIRP as well as ICNIRP experts. In addition, the Commission may appoint further experts as consulting members. ICNIRP can be seen as a repository of information on the epidemiological, medical, biological, physical and technological aspects of NIR.

In pursuit of its objectives, ICNIRP formulates guidelines on limiting exposure, and contributes scientific advice to environmental health criteria documents (published by WHO). ICNIRP also disseminates information on specific topics of importance to NIR protection by means of statements, practical occupational exposure guides (in collaboration with ILO) and scientific symposia proceedings.

ICNIRP recognises that the acceptability and adoption of a complete system of protection also requires data and evaluations based on social, economic and political considerations. It is ICNIRP’s view that these matters are the responsibility of national governments and their authorities. ICNIRP and other scientific advisory bodies may, however, provide background information of importance to carrying out such evaluations.

 Whereas ICNIRP provides general practical information on measurable levels that are derived from basic restrictions on exposure, it recognises the need for further technical advice on special exposure situations. This requires physics and engineering expertise to develop practical measures to assess and/or to enable assessment of compliance with ICNIRP exposure guidelines. This includes guidance on the principles and practice of measurements, design of equipment and/or shielding to reduce exposure, and, where appropriate, setting emission limits for specific types of devices. ICNIRP considers that the organisations best qualified to carry out such tasks are the international, regional and national technical standards bodies, including IEC, ISO, CIE, and CENELEC.

Different levels of an exposure may cause effects that differ in terms of consequences for the individual. Such information may be valuable for a national authority developing guidance or legal restrictions. In general, this
information would be made available in the scientific background documents provided by ICNIRP and WHO.

**Main Commission**

The Main Commission consists of a Chairman, Vice-Chairman and 12 members. Commission members are individual experts representing neither their countries nor their institution.

The duties of the Main Commission include:

- Formulating and implementing the policy of the Commission in accordance with the Commission’s Charter and resources available.
- Specifying, prioritising and directing the Commission’s work programme.
- Providing Chairmanship and scientific expertise to the Standing Committees and coordinating their activities according to the needs of the Commission.
- Reviewing and approving proposed Commission publications.
- Fostering cooperation with other partner organizations in the field of non-ionizing radiation protection.

**Commission Membership**

Dr. A.F. McKinlay Chairman, UK
Prof. Dr. J.H. Bernhardt Vice Chairman, Germany
Prof. Dr. A. Ahlbom Sweden
Dr. U. Bergqvist Sweden
Dr. J.P. Césarini France
Dr. F. R. De Grujl The Netherlands
Dr. M. Hietanen Finland
Dr. R. Owen USA
Dr. D.H. Sliney USA
Prof. A. Swerdlow UK
Prof. Dr. M. Taki Chairman SC III Japan
Dr. T.S. Tenforde USA
Dr. P. Vecchia Italy
Dr. B. Veyret France
Dr. M.H. Repacholi Chairman Emeritus CH
Dipl.-Ing. R. Matthes Scientific Secretary, Germany

**Standing Committees**

ICNIRP currently has four scientific Standing Committees: Epidemiology, Biology, Physics, and Optical Radiation. Each of these Standing Committees comprises internationally recognized experts in the area of study in question. Each is chaired by a member of the ICNIRP Main Commission and will usually contain one other Main Commission member. The size of the Standing Committees is usually limited to around seven experts. The duties of the Standing Committees include:

- Reviewing the scientific literature specific to the field of interest of each Standing Committee.
- Preparing specific reports and other publications requested by the Main Commission.
- Advising on the preparation of exposure guidelines and other ICNIRP documents requiring multi-disciplinary input.
- Providing expert advice through ICNIRP-organized scientific seminars and other scientific meetings.

The working programme of the Standing Committees include:

- Establish the committee.
- Assign the task of creating and maintaining the data
- Develop a format and an organization for the consecutive reviewing of the new literature.
- Develop a strategy for already existing publications.
- Plan meetings in co-ordination with ICNIRP and collaborating projects.

**Consulting Members**

ICNIRP constantly seeks to extend and improve its knowledge base in order to ensure that it continues to provide sound science-based advice on non-ionizing radiation protection. This task has become increasingly complex and demanding, particularly with the rapid expansion of new technologies employing electromagnetic fields, radiofrequency radiation and optical devices that could result in an increase in the exposure of people. ICNIRP recognises the need to benefit from as wide a range of professional expertise and scientific/technical knowledge as possible and, to achieve this, has invited a number of key experts in specific areas in the role of “Consulting Members”.

Consulting members are invited to help ICNIRP through the work programme of each Standing Committee. They bring to ICNIRP specific expertise, often in a specific and highly technical area, and required for a specific task in hand. They also provide a broadening of the scientific consultation that ICNIRP employs to review its publications.

The Secretariat provides scientific administrative support to ICNIRP and acts as the main point of contact and the principal channel for ICNIRP and its members. It also provides organizational support for all ICNIRP meetings and workshops.

**Scientific Secretary**

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Deputy Secretary Dipl.-Verw. K. Chabrel
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**ICNIRP’s Publications**

ICNIRP endeavours to communicate its views, advice and recommendations as widely as possible and to consult on these with radiation protection and other medical and science professionals world-wide.
Certain ICNIRP publications can be downloaded from the ICNIRP site. ICNIRP books can be ordered at the following address: SMI (Distribution Services) Limited P.O. Box 119 Stevenage, Hertfordshire SG1 4TP UK, www.earthprint.com

ICNIRP’s publications broadly consist of:

- **Reviews of the published scientific literature.** These set out the science base and provide ICNIRP’s interpretations of the results of the science in respect of understanding effects on human health. In the past such reviews were published in the WHO Health Criteria Documents Series. They are now published as ICNIRP stand-alone publications.

- **Exposure Guidelines.** These are based on reviews of the science, they summarise scientific results and set out the basis for limiting exposure and recommend exposure limits. ICNIRP Exposure Guidelines are published in the Journal “Health Physics”.

- **Statements.** These provide information and advice on specific topics of non-ionizing radiation protection and/or radiation protection issues related to specific devices or exposure situations. ICNIRP Statements are also published in “Health Physics”.

- **Occupational Practical Guides.** These are produced by ICNIRP and address specific topics on occupational exposure to non-ionizing radiation. They are published by the International Labour Office in its “Occupational Safety and Health Series”.

- **General Documents.** These are documents setting out general policy issues such as the basis for exposure guidelines and reviews of the science. These may also be published in Health Physics or as separate ICNIRP publications.

- **Proceedings.** These are publications resulting from scientific seminars, workshops and conferences organised by ICNIRP and/or its partner organizations in non-ionizing radiation protection. Proceedings are published either in special editions of scientific journals or as separate ICNIRP publications.

Hitherto, ICNIRP exposure guidelines and statements have been reviewed through the members of the worldwide network of national IRPA-affiliated radiation protection societies. This process calls on all reviews to be completed within a period of 90 days. Recently ICNIRP has extended this review process to include ICNIRP’s International Partners in Non-Ionizing Radiation Protection. All comments received from such reviews are considered by ICNIRP in producing final publications.

### Work plan

#### ICNIRP Documents

**General System of Protection against NIR**

This document sets out the basis for ICNIRP’s approach to non-ionizing radiation protection. It has been subject to external review and comments and has been approved by the Commission for publication. It has been accepted in “Health Physics”.

#### ICNIRP Guidelines on Exposure Limits

- **Ultraviolet Radiation**
  The need for revision of guidelines on limiting exposure to ultraviolet radiation is under consideration by the Commission.

- **Airborne Ultrasound**
  The need for revision of guidelines on limiting exposure to airborne ultrasound is under consideration by the Commission.

#### ICNIRP Statements

- **Magnetic Resonance Imaging (MRI)**
  The Commission is reviewing the need for further advice on MRI. A workshop was held in France in October 2001.

- **Pulsed Magnetic Fields**
  A Statement on pulsed magnetic fields has been approved by the Commission for formal review and comment.

- **UVR Sunbeds**
  A draft statement has been produced and has been subject to the formal review and comment process. The Commission is completing the final version of the Statement.

- **Medical Ultrasound**
  The Commission is reviewing the need for further advice on medical ultrasound.

#### ICNIRP Scientific Reviews

- **Review of Epidemiology relating to exposure to Static and ELF (0-100 kHz) fields**
  This review has been completed by Standing Committee I (Epidemiology) under the Chairmanship of Professor Anders Ahlbom. The Review has been approved by the Commission and has been accepted for publication (later in 2001) in a scientific journal.

- **Review of Biological studies relating to exposure to Static and ELF (0-100 kHz) fields**
  This review is at an advanced draft stage and will be completed by Standing Committee II (Biology) under the Chairmanship of Professor Bernard Veyret. It will be published by ICNIRP during 2001.

- **Review of Physical and Engineering relating to exposure to Static and ELF (0-100 kHz) fields**
  This review is at an advanced draft stage and will be completed by Standing Committee III (Physics and Engineering) under the Chairmanship of Professor Masao Taki. It will be published by ICNIRP during 2001.

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1 Last updated, July 2001
**Review of Epidemiology relating to exposure to RF Radiation (100 kHz-300GHz)**

This review will commence during 2002 and will be undertaken by Standing Committee I (Epidemiology) under the Chairmanship of Professor Anders Ahlbom.

**Review of Biological studies relating to exposure to RF Radiation (100 kHz-300GHz)**

This review will commence during 2002 and will be undertaken by Standing Committee II (Biology) under the Chairmanship of Professor Bernard Veyret.

**Review of Physical and Engineering relating to exposure to RF Radiation (100 kHz-300GHz)**

This review will commence during 2002 and will be undertaken by Standing Committee III (Physics and Engineering) under the Chairmanship of Professor Masao Taki.

**Review relating to exposure to Laser and Optical Radiation**

This review has commenced and is being undertaken by Standing Committee IV (Optical Radiation) under the Chairmanship of Dr David Sliney.

**Practical Guides for Protection of Workers**

**UV Protection for Workers**

Drafting of this document is underway. It is intended for publication by the International Labour Office (ILO) and is being undertaken by Standing Committee IV (Optical Radiation) under the Chairmanship of Dr David Sliney.

**Symposia and Workshops - International Seminars**

**UV-Index**

This meeting took place in December 2000 in Munich, Germany. The resulting material is being compiled for publication by WHO.

**Fifth International Non-Ionizing Radiation Workshop**

This Workshop will be held at a venue in Spain following the IRPA Congress in 2004.

**EC 5th Framework Concerted Action on the Health Impact from the use of Electronic Article Surveillance Systems, RF Identification Devices and Metal Detectors**

This Action is led by Professor Juergen Bernhardt. Several meetings have been held and a report is being prepared by ICNIRP to be sent to the European Commission by the end of 2001.