

ITU-D activities on EMF

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ITU framework on ElectroMagnetic Fields (EMF)

1. ITU Plenipotentiary Resolution 176 ([Rev. Busan, 2014](#)): *Human exposure to and measurement of electromagnetic fields*
2. ITU-T – [Resolution 72](#) on “Measurement concerns related to human exposure to electromagnetic fields”
3. ITU-D– [Resolution 62](#) (Rev. WTDC-174) on "Measurement concerns related to human exposure to EMF"
4. ITU-D Question [7/2](#) (Continuation of Q 23/1 and Q7/2) *Strategies and Policies Concerning Human Exposure To Electromagnetic Fields*
5. ITU-T SG5: Environment and Climate Change Question [C/5](#) (continuation of Q 3/5 and 7/5): Human exposure to electromagnetic fields (EMFs) due to radio systems and mobile equipment

Q7/2 Strategies and policies concerning human exposure to electromagnetic fields

- Collects and disseminates information concerning exposure to radiofrequency (RF) and electromagnetic fields (EMF), in order to assist national administrations, particularly in developing countries, to develop appropriate national regulations.
- Useful for Administrations, in order to listen and respond to the concerns of public from radiating antennas.

Final Report of Q7/2

Q7/2



Question 7/2 – Strategies and policies concerning human exposure to electromagnetic fields

This report collects and disseminates information concerning exposure to Radio Frequency (RF) and Electromagnetic Fields (EMF), in order to assist national Administrations, particularly in developing countries, to develop appropriate national regulations. It is useful for Administrations, in order to listen and respond to the concerns of the public related to radiating antennas.

<https://www.itu.int/pub/D-STG-SG02.07.1-2017>

Question 7/2

**Strategies and
policies concerning
human exposure to
electromagnetic fields**

6th Study Period
2014-2017

Content of the report

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Proposals for future Q7/2 (WTDC-17)

The following subjects should be studied

- a. Compilation and analysis of the regulatory policies concerning human exposure to electromagnetic fields that are being considered or implemented for authorizing the installation of radiocommunication sites and the monitoring powerline telecommunication systems.
- b. Description of the strategies or methods for raising the awareness of populations and increasing information to populations regarding the effects of human exposure to electromagnetic fields due to radiocommunication systems.
- c. Proposed guidelines and best practices on this matter.
- d. What are the international (mainly in WHO, ICNIRP and IEEE) activities to provide updated limits of exposure levels.

European Regional Initiative Meeting

Rome, May 2017

Information from the Republic of Poland on the electromagnetic field levels in the context of anticipated implementation of 5G. Exposure limit such as 0.1 W/m^2 may lead to the following consequences:

- Limited range of the base station grids.
- The necessity to build much denser net of base stations (cost inefficient) and thus enforce increase of oversized investments costs.
- Inability to share with existing technologies.

In order to implement innovative and intelligent solutions, based on 5G networks, efforts should be made to guideline a coherent approach for the standardized EMF levels across the ITU countries.

Taking into account present variety of EMF levels across the ITU countries, it should be estimated in various scenarios which EMF levels will grant the minimum requirements for the 5G establishment.

Exchange of good practices in the field of social information campaigns on increased power limits and their environmental impact is required.



WTDC-17

9-20 October 2017, Buenos Aires



Relevant results on ElectroMagnetic Fields (EMF)

1. ITU-D– [Resolution 62](#) (Rev. WTDC-17) on "Measurement concerns related to human exposure to EMF"
2. ITU-D Question [7/2](#) (Continuation of Q 23/1 and Q7/2) *Strategies and Policies Concerning Human Exposure To Electromagnetic Fields*

ITU-D Resolution 62

➤ *resolves to instruct the Director of the Telecommunication Development Bureau*

- 2 to conduct international and regional seminars and workshops to identify the needs of developing countries and to build human capacity in regard to EMF including Specific Absorption Rate (SAR);
- 4 to provide the necessary assistance to member states, in particular developing countries, by supplying them with measurement methods to assess human electromagnetic exposure, including methods to manage the risk perception by the public;
- 5 to foster the exchange of experiences and best practices in connection with the challenges and opportunities of developing technical regulations on the adoption of limits for reference levels to non-ionizing electromagnetic radiation from radio frequency stations, as well as to specific absorption rate levels;

ITU-D Resolution 62

➤ *resolves to instruct the Director of the Telecommunication Development Bureau*

6 to establish and keep up a dialogue among all interested parties, such as civil society, authorities, industry, the scientific community, associations, and the media, in order to provide support for measuring human exposure to electromagnetic fields and to adopt the regulatory framework on the reference levels for persons on the basis of the technical specifications drawn up by the international bodies specializing in human health and protection against non-ionizing radiation,

7 to promote the EMF-estimator software that implement the methodology described in ITU-T K.70;

8 to implement a necessary assistance to member states, in particular developing countries, by supplying them methods of measures allowing human electromagnetic exposure estimation quoted in the considering part b), in order to define a current situation regarding protection against electromagnetic exposure and its impact on current national regulations;

ITU-D Resolution 62

➤ *instructs Study Group 2*

within the framework of its Questions, including Question 7/2, to cooperate with ITU-T Study Group 5 and ITU-R Study Groups 1, 4, 5 and 6, in order to achieve the following goals:

- i) to collaborate, with ITU-T Study Group 5 in particular, update the mobile application of the electromagnetic fields guide, on the subject of human exposure to EMF , and the implementation guidance as a matter of high priority;
- ii) contribute to the organization of seminars, workshops or trainings on the subject of EMF;
- iii) ensure wide dissemination of ITU publications and literature on EMF issues;

ITU-D Resolution 62

➤ *instructs Study Group 2*

iv) contribute to preparation of the Guide on the use of ITU-T publications on achieving electromagnetic compatibility and safety, and publications relating to measurement methodologies, the need for measurements to be performed by a "Qualified and Certified Radio Engineer or Technician" and the criteria for this "Qualified Radio Engineer or Technician", and system specifications,

v) continue to cooperate with the World Health Organization (WHO), the International Commission on Non-Ionizing Radiation Protection (ICNIRP), the Institute of Electrical and Electronics Engineers (IEEE), and other relevant international organizations with regard to the awareness and dissemination of information to Membership and the public.

ITU-D Resolution 62

➤ *invites Member States*

- 1 to conduct a periodic review concerning the performance of the operators and mobile equipment manufacturers in this field to make sure that they are following the national specifications or ITU Recommendations, in order to ensure the safe use of EMF;
- 2 to conduct public awareness campaigns on adverse impact of EMF and deploy successful solutions including regulations;
- 3 to continue to cooperate through exchange of experts, the organization of seminars, specialized workshops, and meetings;
- 4 to adopt international standards, and use effective methods for verifying compliance,

➤ *encourage Academia Members and Centres of excellence*

to participate actively in the work of this Resolution through the submission of contributions and proposals.

Q7/2 Strategies and policies concerning human exposure to electromagnetic fields

➤ Question or issue for study

d) Information on the international (mainly in WHO, ICNIRP and IEEE) activities, including updated limits of exposure levels.

e) Challenges and opportunities of developing technical regulations on the limits for maximum exposure to non-ionizing electromagnetic radiation from radio base stations and specific absorption rate levels in wireless devices.

Q7/2 Strategies and policies concerning human exposure to electromagnetic fields

➤ Expected outcome

- b) The report will provide materials for workshops and seminars to share experiences on the establishment of limits for maximum exposure to non-ionizing electromagnetic radiation from radio base stations.

➤ Sources of input

- Member States, Sector Members, **Associates and Academia.**

Impact of IMT-2020 (5G) technology on EMF

- The IMT-2020 (5G) system is planned for implementation in 2020.
- It is important to consider the impact of IMT-2020 (5G) technology with many new solutions (frequencies above 6 GHz, massive MIMO antennas, big number of micro base stations, IoT etc.) for the total exposure level.
- All ITU members are encouraged to deliver contributions concerning this important subject especially on:
 - the impact of IMT-2020 (5G) technologies on the compliance assessment methodology;
 - the deployment of smart antennas;
 - the use of Software Defined Radio;
 - the communication and understanding among stakeholders and general public related to the effect on human health.



Thank you!

