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| PROPOSED MODIFICATIONS TO RESOLUTION 72 |
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| **Abstract:** | ATU proposes to revise the title of WTSA Resolution 72 to take into consideration that exposure levels vary in a complex manner depending on the evolution of wireless technologies, particularly those of mobile communications, and that it is necessary to consider that the average exposure of the population is likely to increase over the next years. |
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**Introduction**

Nowadays, the considerable development of the use of the radio frequency spectrum has resulted in an increase in sources of electromagnetic field emissions, particularly the use of mobile terminals. A significant part of the network infrastructure uses different wireless technologies and the installation of base stations, with a view to achieving a connected information society.

Faced with the concerns of populations, particularly those in developing countries, regarding the effects of electromagnetic fields on their health, these populations are likely to oppose the deployment of radio installation in their neighbourhoods, especially following insufficient and sometimes erroneous information. To this end, it is necessary for countries to put in place appropriate regulations or to strengthen them, in order to protect people against the effects of exposure to electromagnetic fields caused by this radio equipment, taking into consideration new and emerging technologies, such as 5G and beyond 6G which using millimetre waves.

Proposal

The amendments mainly concern the following points:

* Taking into consideration that exposure levels vary in a complex manner depending on the evolution of wireless technologies, particularly those of mobile communications, and that it is necessary to consider that the average exposure of the population is likely to increase over the next years.
* The need for continued studies and research by ITU-T within Study Group 5, particularly with regard to new and emerging technologies, such as 5G and beyond 6G which use millimetre waves, and the Internet of Things (IoT), where information remains insufficient.
* Encourage Member States and Sector Members to conduct awareness-raising campaigns among the general public, with a view to alleviating their fear and concerns about the effects of electromagnetic fields on health.

MOD ATU/35A16/1

RESOLUTION 72 (Rev. New Delhi, 2024)

Measurement and assessment concerns related to human exposure to Radio Frequency Electromagnetic fields [RF EMF]

(Johannesburg, 2008; Dubai, 2012; Hammamet, 2016, Geneva, 2022, New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

*a)* Resolution 176 (Rev.Bucharest, 2022) of the Plenipotentiary Conference, on measurement and assessment concerns related to human exposure to electromagnetic fields (EMF);

*b)* Resolution 62 (Rev.Kigali, 2022) of the World Telecommunication Development Conference, on measurement concerns related to assessment and measurement of human exposure to EMF,

considering

*a)* the importance of telecommunications/information and communication technologies (ICTs) for political, economic, social and cultural progress;

*b)* that, in the framework of telecommunications/ICTs to help bridge the digital divide between developed and developing countries[[1]](#footnote-1)1, a significant part of the infrastructure needed involves various wireless technologies and the installation of base stations in the appropriate measure to ensure quality of service;

*c)* that there is a need to inform the public of the levels of Radio Frequency Electromagnetic Fields (RF EMF) from different RF sources, and of the limits of safe exposure from these sources, in a scientific and objective manner through measurements and other standardized methodologies, as well as of the potential effects of RF EMF exposure;

*d)* that an enormous amount of research has been carried out regarding wireless systems and health, and many independent expert committees have reviewed this research;

*e)* that the World Health Organization (WHO) has the expertise and competency in the health field to assess the impact of radio waves on the human body;

*f)* that WHO advocates exposure limits that were established by international organizations such as the International Commission on Non-Ionizing Radiation Protection (ICNIRP);

*g)* that ITU works closely with WHO on matters related to human exposure to RF EMF;

*h)* that ITU has a mechanism for verifying compliance with radio-signal levels by calculating and measuring the field strength and power density of these signals, as well as the Specific Absorption Rate (SAR) of the human body;

*i)* that the considerable development of the use of the RF EMF spectrum has resulted in an increase in the sources of RF EMF emission in a given geographical area;

*j)* that exposure levels vary in a complex manner depending on the evolution of wireless technologies, and that it is necessary to consider that the average exposure of the population is expected to increase over the coming years;

*k)* that regulatory authorities in many developing countries urgently need information on methods of assessing and measuring human exposure to RFEMF, in order to put in place national regulations to protect populations;

*l)* that ICNIRP[[2]](#footnote-2)2, the Institute of Electrical and Electronics Engineers (IEEE)[[3]](#footnote-3)3 and the International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) have developed guidelines for RF EMF exposure limits and that many administrations have adopted national regulations based on those guidelines;

*m)* that most developing countries do not have the necessary tools to measure and assess the impact of radio waves on the human body;

*n)* relevant resolutions, recommendations and reports of the ITU Telecommunication Standardization Sector (ITU-T), the ITU Radiocommunication Sector (ITU-R) and the ITU Telecommunication Development Sector (ITU-D) related to human exposure to RF EMF;

*o)* that there is continuous advancement in wireless communication technologies and ongoing work in the ITU Sectors related to such advancements and also the concomitant RF EMF exposure aspect, and that active coordination and collaboration between the Sectors and other specialized and expert organizations in this field are important to avoid duplication of efforts,

recognizing

*a)* the work done within ITU‑R study groups on radio-wave propagation, electromagnetic compatibility and related aspects, including measurement methods;

*b)* the work done within ITU-T Study Group 5 on techniques for RF measurement and assessment;

*c)* that Study Group 5, in establishing methodologies for assessing human exposure to RF EMF, cooperates with many participating standards organizations;

*d)* that the ITU EMF Guide, in its digital version, also available in a mobile-phone application, is updated as ITU and/or WHO receive information and/or results of research;

*e)* that SG5 regularly updates existing Recommendations related to human exposure to RF EMF in response to advancement in digital technologies considering emerging concerns, accurate information, methodologies, new scientific research, etc.;

recognizing further

*a)* that some publications about RF EMF effects on health create doubt among the population, increasing the perception of the risk they involve;

*b)* that, in the absence of appropriate regulation and accurate, complete information, as well as public awareness, people become concerned about long-term exposure to EMF, due to their perception of risk, and are likely to oppose the deployment of radio installations in their neighbourhoods, demanding the enactment of restrictive municipal rules that affect the deployment of wireless networks;

*c)* that Study Group 5, in particular, has elaborated Recommendations on the technical measurement and environment management of RF EMF that help to diminish risk perception within the population;

*d)* that the development of these Recommendations has made it possible to significantly decrease the cost of measurement equipment and to leverage the results through social communication;

*e)* that advanced equipment used for measuring human exposure to RF energy is expensive;

*f)* that implementing such measurement and assessment is essential for many regulatory authorities, in particular in developing countries, in order to monitor the limits for human exposure to RF EMF, and that they are called upon to ensure those limits are met in order to license different services;

*g)* the importance of RF EMF emission assessment when implementing policies in some countries,

noting

*a)* that other national, regional and international standards-development organizations (SDOs) are carrying out activities related to human exposure to RF EMF;

*b)* the urgent need for regulatory bodies in many developing countries to obtain information on RF EMF measurement and assessment methodologies in regard to human exposure to RF EMF, in order to establish or reinforce national regulations to protect their citizens;

*c)* that collaborative efforts between stakeholders are key in fostering adequate public awareness on EMF and health;

*d)* that, so far, the studies and assessments conducted by various countries, using the appropriate methodologies, and shared with SG5, have not indicated any exceedance of the exposure limits set under the ICNIRP guidelines,

resolves

to invite ITU‑T, in particular Study Group 5, to expand and continue its work and support in this domain, including, but not limited to:

i) developing new and/or updating existing reports and Recommendations, taking into account the advancements in wireless technologies, particularly those using millimetre waves and the Internet of Things systems and devices, advances in measurement/assessment methodologies and best practices, in close coordination with other ITU Sectors and relevant specialized organizations in this field;

ii) publishing and disseminating its technical reports, as well as developing ITU‑T Recommendations to address these issues;

iii) developing, promoting and disseminating information and training resources related to this topic through the organization of international or regional training programmes, workshops, forums and seminars for regulators, operators and any interested stakeholders from developing countries;

iv) studying RF EMF exposure assessment from both intentional and unintentional or ambient (such as wireless power transfer) sources associated with new and emerging technologies, including Internet of Things and International Mobile Telecommunications systems, as well as the results of measurement, evaluation, monitoring, calculations and overview of the impact on RF EMF levels;

v) continuing to cooperate and collaborate with other organizations working on this topic and to leverage their work (ICNIRP, 2020; IEEE C95.1, 2019), in particular with a view to assisting the developing countries in the establishment of standards and in monitoring compliance with these standards, especially on telecommunication installations and terminals;

vi) collaborating with ICT experts, the research community and other relevant stakeholders to study the RF EMF aspects of telecommunications/ICTs, including emerging ones, potentially also using emerging ICT technologies to study these EMF aspects;

vii) cooperating on these issues with ITU‑R study groups, and with ITU-D Study Group 2 in the framework of RF EMF measurements to assess human exposure and other relevant issues;

viii) coordinating and cooperating with various international organizations specialized in health matters, SDOs and organizations recognized by United Nations agencies dealing with the harmonization of exposure guidelines, in order to generate consistent protocols and harmonized guidelines for assessing exposure to RF-EMF for regulators and decision -makers, in order to facilitate the development of national standards, particularly in developing countries;

ix) strengthening coordination and cooperation with WHO, ICNIRP, IEEE, ISO/IEC and other relevant organizations on guidelines and limits for human exposure to EMF so that any publications relating to human exposure to EMF are circulated to Member States as soon as they are issued,

instructs the Director of the Telecommunication Standardization Bureau, in close collaboration with the Directors of the other two Bureaux

within the available financial resources,

1 to support the development of reports identifying the needs of developing countries on the issue of assessing human exposure to RF EMF, and to submit the reports as soon as possible to Study Group 5 for its consideration and action in accordance with its mandate;

2 to regularly update the ITU‑T portal on RF EMF activities, including, but not limited to, the ITU EMF Guide, its mobile application, links to websites, the global portal on ICTs and the environment and flyers, as well as information intended for general public;

3 to hold workshops in developing countries with presentations and training on the use of equipment employed in assessing human exposure to RF EMF;

4 to appoint experts in the field of assessment and measurement of exposure to RF EMF to assist developing countries in the formulation of their strategies in this area, as well as their appropriate regulation;

5 to extend support for developing countries while they establish their national and/or regional centres equipped with test benches for continuous monitoring of RF EMF levels, especially in selected areas where the public has concerns, and transparently provide the data to the general public, using, among other things, the modalities set out in Resolutions 44 (Rev. Geneva, 2022) and 76 (Rev. Geneva, 2022) of this assembly and Resolution 177 (Rev.  Bucharest, 2022) of the Plenipotentiary Conference, in the context of the development of regional test centres;

6 to invite Study Group 5 to coordinate and cooperate with various international organizations such as WHO, ICNIRP, IEC, IEEE and other relevant international and regional organizations, and to participate in the EMF Project led by WHO, in the harmonization of exposure thresholds globally and to generate consistent measurement protocols and this, within the framework of the implementation of this Resolution, Resolution 176 (Rev. Bucharest 2022) of the Plenipotentiary conference, and Resolution 62 (Rev. Kigali 2022) of the World Development Conference Telecommunications, in order to continue and strengthen the technical assistance provided to Member States;

7 to report to the next world telecommunication standardization assembly on measures taken to implement this resolution,

invites Member States and Sector Members

1 to contribute actively to the work of Study Group 5 by providing relevant and timely information, in order to assist developing countries in providing information and addressing measurement and assessment concerns related to human exposure to RF EMF radiated by intentional and unintentional sources;

2 to conduct periodic reviews and measurements and take all appropriate measures to ensure that ITU‑T Recommendations related to exposure to RF EMF are followed by entities concerned (operators, manufacturers, etc.) with the aim of protecting people and the environment against RF EMF;

3 to cooperate and share expertise and resources between developed and developing countries in order to help government administrations, especially in developing countries, to reinforce or establish an appropriate regulatory framework for protecting people and the environment from RF radiation ;

4 to encourage the use of ITU‑T Recommendations, in particular the K‑series and its supplements, to build national standards for measuring and assessing EMF levels, and to inform the public of compliance with those standards through all channels and means of communication;

5 to carry out awareness-raising campaigns among the general public regarding exposure to RF EMF by setting up information tools (electronic documents, publications, etc.) allowing access to reliable technical data such as the results of measures, and those of the proper use of radio terminals, in order to alleviate fear and concerns about the effects of RF EMF,

further invites Member States

1 to adopt suitable measures included in the relevant ITU Recommendations and international standards in order to ensure compliance with exposure limits to protect health against the adverse effect of RF EMF;

2 to encourage administrations to follow the ICNIRP 2020 Guidelines or the IEEE 95.1 2019 Standard, in order to help mitigate the effects that electromagnetic radiation could have on the human body;

3 to assess the impact and potential changes in accordance with the relevant ITU Recommendations and international standards on RF EMF;

4 to provide RF EMF levels assessment reports to public periodically to reduce doubt among the population on the risk of RF EMF to health.

1. 1 These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-1)
2. 2 ICNIRP Guidelines for limiting exposure to EMF (100 kHz to 300 GHz), 2020. [↑](#footnote-ref-2)
3. 3 IEEE Std C95.1™-2019, IEEE Standard for safety levels with respect to human exposure to electric, magnetic and electromagnetic Fields, 0 Hz to 300 GHz. [↑](#footnote-ref-3)