
ITU-D Study Question 23/1

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5th Study Period (2010-2014)

- WTDC-10 (Hyderabad)
 - New Resolution 62
 - Measurement concerns related to human exposure to electromagnetic fields
 - New Study Question 23/1
 - Strategies and policies concerning human exposure to electromagnetic fields
 - Based on contributions from Arab States and CITEL

Resolution 62

BDT Director

- Ensure response to the needs of the developing countries and consistent with the substance of Resolution 72 (Johannesburg, 2008) (ITU-T),
- in close cooperation with the Director of BR and Director of the TSB
 - ensure that Programme 1 determines the requirements of developing countries and their regulatory authorities (at regional level) in relation to this resolution,
 - contributes to studies on this subject,
 - takes an active part in the work of the relevant ITU-R and ITU-T study groups,
 - and submits written contributions on the results of its work in this regard, plus any proposals it deems necessary, to ITU-D Study Group 2



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Resolution 62

- *instructs Study Group 1:*
within the framework of their Questions, to cooperate with ITU-T Study Group 5 and ITU-R Study Groups 1, 5 and 6, in order to achieve the following goals:
 - prepare an annual report on the progress of work in this area in respect of their Questions;
 - contribute to the organization of any seminars on this subject;
 - 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 RadioEngineer" and the criteria for a "Qualified Radio Engineer", and system specifications.

Question 23/1

- The following subjects should be studied:
 - To compile and analyse the regulatory policies concerning human exposure to electromagnetic fields that are being considered or being undertaken for authorizing the installation of radiocommunication sites and Power Lines Telecommunications systems.
 - To describe the strategies or methods for raising the awareness of populations and information to populations regarding the effects of electromagnetic fields due to radiocommunication systems.
 - To propose guidelines and best practices on this matter.

Question 23/1

- **Expected outcome:**

- A report to the membership presenting guidelines to assist Member States in resolving similar problems faced by regulatory bodies.
- The report will provide regulatory authorities with guidelines on methods for raising the awareness of populations along with best practices based on countries' experience in the matter.

Content of the Guidelines

1. Background
2. Introduction
3. World Health Organization (WHO) perspective
4. Scope
5. Objective of these guidelines
6. Principles for developing these guidelines
7. Obligations of operators on RF exposure
8. Targets
9. Measurements
10. Publication of measurements by regulators
11. Content and format of publication
12. Inspection and investigations
13. Amendment of guidelines
14. Review of guidelines

Country case studies

- Venezuela
- Brazil
- Republic of Korea
- Uzbekistan
- CTI
- Hungary
- Israel
- Botswana

ITU assistance in Latin-America

- Colombia
 - The deployment of wireless networks and associated infrastructure
Problem and solution

- COMTELCA, SIGET
 - Technical Issues Related to Non-Ionizing Electromagnetic Emissions and regulation on human exposure. The deployment of wireless networks and associated infrastructure

- Colombia

- The deployment of wireless networks and associated infrastructure
Problems and solutions

- COMTELCA, SIGET

- Technical Issues Related to Non-Ionizing Electromagnetic Emissions and regulation on human exposure. The deployment of wireless networks and associated infrastructure

Colombia/1

■ Background

- The continuing evolution of technologies - need for installation of antennas and their associated elements, especially in densely populated areas.
- Particularly rapid growth of mobile subscribers, new and more diverse services.
- This growth requires a network support to ensure coverage of the territory on the one hand and the quality of service on the other, which means in both cases the need to install increasingly antennas.
- In many cases, companies were limited to fulfill its obligations under licenses granted by the National Government generally linked to coverage and quality of service, avoiding compliance with guidelines regarding the environment, urban planning, protection of historical and cultural heritage
- Companies in compliance with the obligations of the national license installed their networks almost exclusively from the perspective of technical and economic efficiency (low cost).



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Colombia/2

- Main topics discussed in of the report
 - Health Protection and regulations Colombia
 - The political reality of the Municipalities
 - Types of barriers
 - The mother of all barriers
 - The international experience
 - Reduce the causes which are originating the popular apprehension
 - Show in understandable way what can be the radiation controlled to protect health
 - Dynamic Radiation Maps
 - Continuous Monitoring Systems
 - International recommendations
 - Management of Social Acceptance

Colombia/3

- Recommendations/1
 - Keep Colombian legislation in line with World Health Organisation and ICNIRP.
 - Pilot test for a Continuous Monitoring System of Non-Ionized Radiation (NIR) and Municipal Dynamic Map at street level in the municipalities selected for the pilot
 - Integrating the Colombian Federation of Municipalities or as many municipalities as possible to a dialogue with ANE to establish foundations for a possible deal.
Show explicit tools (Code of Practice, Continuous Monitoring Systems, Dynamic Radiation Map)
 - Integrate the private sector to the negotiating table. It is important to establish a prior agreement with the presidents of companies since the agreements involve concessions and eventually cost implications which only presidents can solve.



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Colombia/4

- Recommendations/2
 - Negotiate during the discussions an agreement between municipalities, companies, and ANE for the installation of radio systems.
 - Agree and sign during the negotiations a Code of Good Practice for Installation.
 - Generate Models for Municipal Ordinances, by type of municipality taking into account the Code of Good Practice and measurement systems described, and as a basis for the development of municipal regulations
 - Establish in such ordinances the realization of Continuous Monitoring System of the NIR and Dynamic Municipal Radiation Map at street level in all municipalities.
 - Set on the basis of pilot Continuous Non-Ionizing Radiation Monitoring Systems as a method of communication on the NIR and health protection
 - Make cooperation agreements with countries that are solving the problem using these tools.

Colombia/5

- Recommendations/3
 - Organize an international seminar with members of WHO, ICNIRP, ITU, CITEL, universities, manufacturers, operators, countries showing success stories, etc.
 - Create a Technical Advisory Service to municipalities by the Colombian Federation of Municipalities
 - Establish within the Technical Advisory Service an exclusive web page related to Non-Ionizing Radiation and its control
 - Create from the Ministry a Monitoring Committee for the installation of the antennae and the issues associated with NRI, and this committee will involve all national government agencies related to the problem (Health, Environment, Civil Aviation, Infrastructure etc.), Universities and professional associations
 - Establish in the Monitoring Committee a policy for media communication

■ Pilot project

- Select one to three municipalities where pilot test
- Agree with local political authorities on the working method for the realization of a Comprehensive Pilot including e.g. facility agreements, methods, ratings and installation site selection of monitors.
- Procurement of equipment and services to carry out continuous monitoring system and radiation maps and install in the selected municipalities.
- Initiate a dialogue where all sectors are represented, Ministry, ANE, CRC, Ministry, Municipalities (independently of the Federal pilot participants), Companies, Associations of users, etc., assessing the results of the Pilot.
- It is suggested, in case of budget constraints reduce the number of municipalities to join in the pilot but do the same with both tools ie: Continuous monitoring and radiation maps as they are complementary tools.

ITU assistance in Latin-America

- Colombia
 - The deployment of wireless networks and associated infrastructure
Problem and solution

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COMTELCA/SIGET 1

- Cooperating partners
 - COMTELCA, SIGET (El Salvador)
- Beneficiary countries
 - El Salvador, Honduras and Panamá
- Duration
 - 9 months
- Summary:
 - analyze the difficulties in rolling out mobile networks and their associated infrastructure in Central America due to the social apprehension to electromagnetic radiation,
 - develop proposed solutions which include:
 - policy development,
 - pilot projects (include measurements),
 - development of general tools needed for deploying wireless networks with the social acceptance of people and their political and civil associations.



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COMTELCA/SIGET 2

- Context of the project:
 - study, propose and implement a pilot project in the Central American Region, in relation to the deployment of mobile phone masts and infrastructure, as well as the issue of non-ionizing radiation and health protection, following different ITU resolutions:
 - Resolution 176 (Guadalajara, 2010) of the Plenipotentiary Conference of ITU, 2010 "Human exposure to electromagnetic fields and measuring them"
 - Resolution 72 (WTSA, Johannesburg, 2008) on measurement issues related to human exposure to electromagnetic fields and
 - Resolution 62 (WTDC, Hyderabad, 2010) on measurement issues related to human exposure to electromagnetic fields.
- Also, this project considers giving feedback on lessons learned to
 - Question 23/1, "Strategies and policies relating to human exposure to electromagnetic fields" of the Study Group 1 of the ITU-D and
 - Regional Group in Latin America and the Caribbean in Study Group 5 of the ITU-T.



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COMTELCA/SIGET 3

- Description of the problem from the standpoint of Central American countries.
 - The social apprehension to electromagnetic radiation is being expressed by the communities, groups of users of telecommunications services and the authorities of the Central American countries are seeking proposals for solutions that also include the development of general tools necessary to facilitate the deployment of wireless networks with the social acceptance of people and their political and civil organizations.
- Project Objective
 - This project aims to analyze the difficulties in rolling out mobile networks and their associated infrastructure in Central America due to the social apprehension to electromagnetic radiation, evaluation of legislation relating to the subject for the beneficiary countries of the region



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COMTELCA/SIGET 4

- Expected results for beneficiary countries
 - A diagnosis of existing problems and social and political situation of each of the beneficiary countries and municipalities related to the deployment of antennas.
 - General guidelines for developing national legislation to control Non-Ionizing Radiation (NIR) for the benefit of countries.
 - A work plan to develop the management of social acceptance of the installation of antennas.
 - A guide to good practices related to the installation of antenna support structures and municipal regulation, environmental protection, cultural heritage protection, urban planning and radiation monitoring.

- Expected Additional Results for El Salvador
 - A guide for use in developing an agile and direct communication to society about the effects of radiation and control them.
 - Pilot testing of Continuous Monitoring Systems and Municipal Radiation Maps in El Salvador, in order to assess the impact in municipalities the conflicts which prevent or hinder the deployment of radio antennae.



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COMTELCA/SIGET 5

- Working method and activities
 - Two consultants
 - Senior Consultant for El Salvador and
 - Associate Consultant for Honduras and Panama, under the supervision of the Senior Consultant
 - Socialization of the problem an solution and negotiations require periodic visits
 - Associate Consultant: working with governments of Honduras and Panama, 3 two-week missions to both countries, a week of work in each.
 - Senior Consultant: working in El Salvador. Will perform 4 missions to El Salvador (one each month) including the work to carry out the pilot.
 - Creative approach towards human capacity building
 - 2 missions of 5 days for one technician each from Panama and Honduras to El Salvador to participate in the pilot in El Salvador.

NIR Monitoring Network of the NMHH

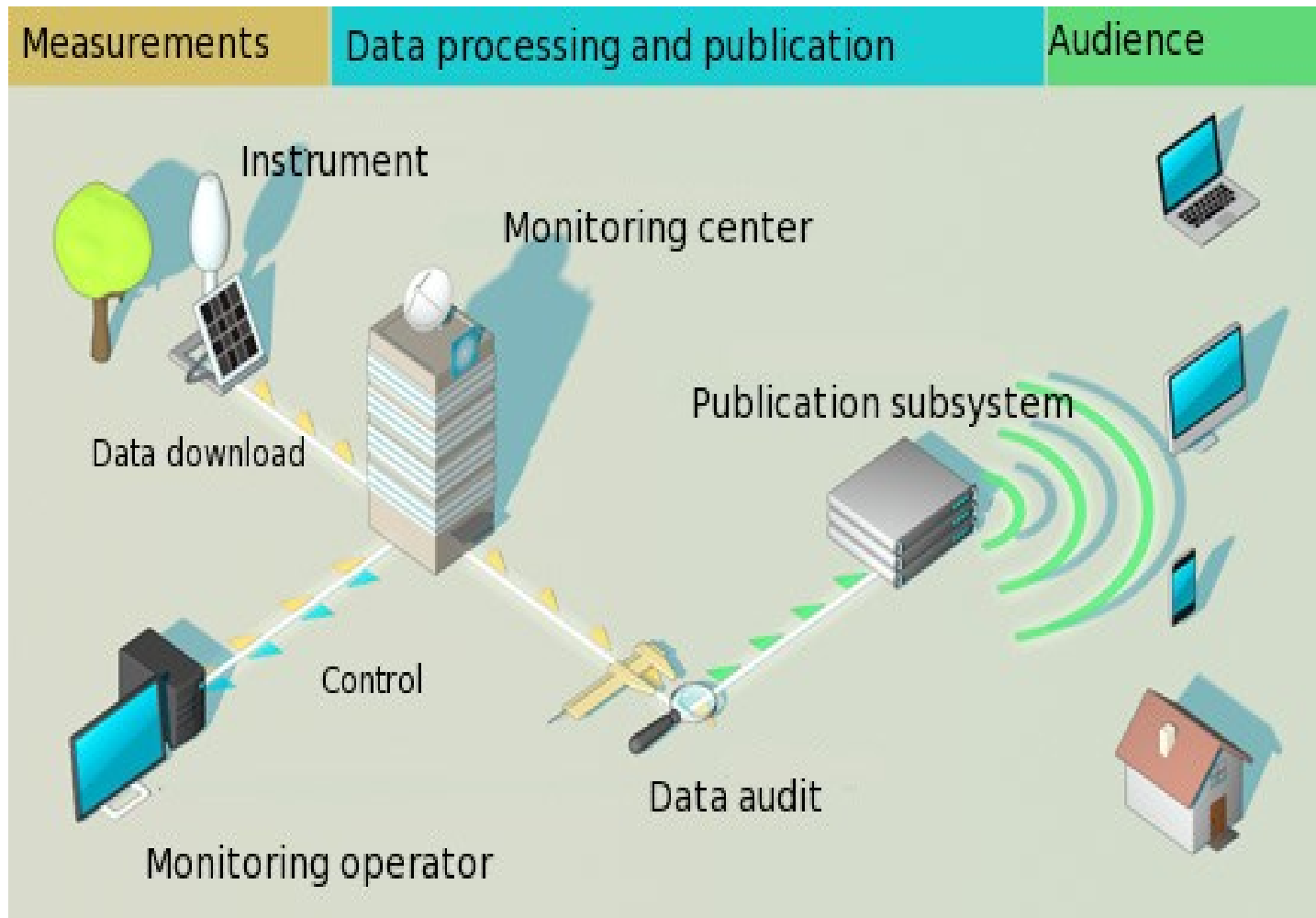
Hungary

- 25 area monitoring stations equipped with wideband probes (100 kHz - 3 GHz). The stations are able for autonomous operation.
- The measured data are stored in the memory of the station and can be downloaded by a GSM modem. The data measured during the GSM data transfer are discarded.
- The measurement data is usually downloaded once a day and it takes a few minutes.
- <http://emirpub-prod.nhh.hu/pubrendszer-web/eszmog/eszmogMeresek.jhtml>



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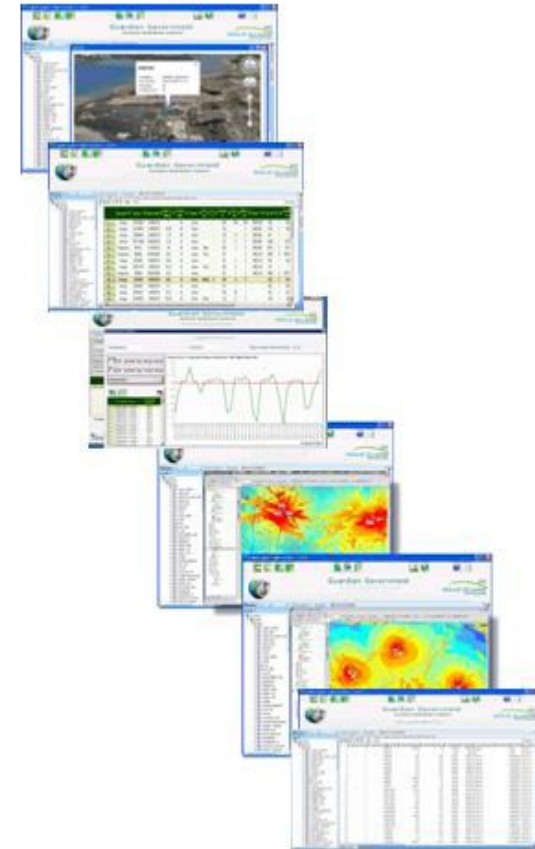
NIR Monitoring Network Architecture



Continuous monitoring of cellular radiation

Israel

- By collecting information directly from the radio switch networks of the cellular carriers nationwide
 - Location of each site
 - Configuration of each device
 - Power used at each moment
 - Frequency used for transmission
 - Base Station & Mobile Data collection
 - Exposure Geo Representation
 - A set of Quality of Service parameters



International
Telecommunication
Union

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Electromagnetic Fields (EMF) Analysis Simulations and Measurements for Public Safety

EMF & human exposure measurements

- Measurements on systematic defined points or on certain points of public interest

EMF simulation and prediction

- For the purpose of obtaining clearance certificates or generating technical site documentations including safety distances/ safety zones

EMF Monitoring

Thank you!

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