جهاز تنظيم الاتصالات والبريد

TPRA – Sudan

Human exposure to Electromagnetic Fields (EMF) and Specific Absorption Rate (SAR)" in the Arab Region

EMF Management in Sudan

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ITU-T Study Group 5: Environment, climate change and circular economy

SG5 is responsable for:

Studying ICT environmental aspects of electromagnetic phenomena and climate change.

Studies on how to use ICTs to help countries and the ICT sector to adapt to the effects of environmental challenges, including climate change, in line with the Sustainable Development Goals (SDGs).

Lead Study Group for

- electromagnetic compatibility, lightning protection and electromagnetic effects
- ICTs related to the environment, climate change, energy efficiency and clean energy
- circular economy, including e-waste

WP1/5 - EMC, lightning protection, EMF

WP2/5 - Environment, Energy Efficiency and the Circular Economy

WP1/5 – EMC, lightning protection, EMF

- Q1//5 - Protection of information and communication technology (ICT) infrastructure from electromagnetic surges
- Q2/5 - Equipment resistibility and protective components
- Q3/5 - Human exposure to electromagnetic fields (EMFs) from information and communication technologies (ICTs))
- Q4/5 - Electromagnetic compatibility (EMC) issues arising in the telecommunication environment
- Q5/5 - Security and reliability of information and communication technology (ICT) systems from electromagnetic and particle radiations

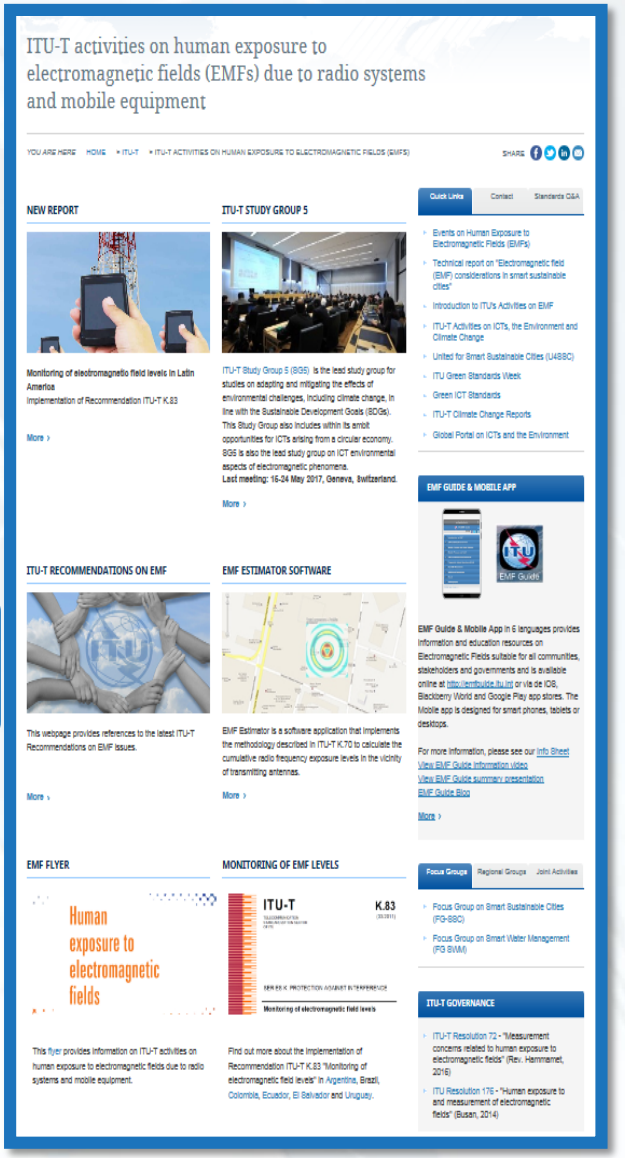
ITU-T Activities on Human Exposure to Electromagnetic Fields (EMF)

- Development and implementation of Standards
- Monitoring of EMF Levels
- EMF estimator Software
- EMF mobile application
- EMF Publications

Q3/5 - Human exposure to electromagnetic fields (EMFs) from information and communication technologies (ICTs)

Recommendation ITU-T K.83

Recommendation ITU-T K.70



Introduction

The growing demand for mobile services have necessitated the increase in communications infrastructure such as radio base stations, which are needed to ensure that there are adequate network coverage and access that guarantee minimum Quality of Service (QoS). wireless technology has become an indispensable part of modern society. radio base stations are an essential component of telecommunications infrastructure and are the backbone of wireless networks.

The Role of TPRA

- Granting approval for the installation of base stations after conforming the specifications to the approved standards globally, regionally and locally.
- Setting specifications, requirements and regulations for the construction of base stations.
- Checking and matching the base stations specifications with the approved specifications.
- Analysis of electromagnetic radiation from base stations.
- Immediate response to complaints and scientific reports, and coordination with the relevant authorities.

The Role of TPRA

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Field Survey:

Assessment of antenna site is necessary to ensure compliance with the standards and local regulations limit for the above ground facilities (AGF) “radio base stations” installations and the maximum permissible exposure (MPE)

The Role of TPRA

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The field survey assessment shall provide review on legal developments regarding the regulation of the placement, aesthetics and safety of cell towers and the cellular antennas mounted on a building and the related telecommunication equipment (jointly referred to as " radio base stations ") for the current licensees.

The field survey and compliance verification will help to address the concerns of the public and also take appropriate action to harmonize growth and development on one hand and public safety on the other hand.

Objectives of survey

- To evaluate suitability of each site for the located radio base stations, antennas and the DF equipment and identify any special design considerations to be evaluated.
- To inspect radio base stations site for all parameters as recommended by ITU and TPRA.
- To measure and evaluate radio base stations Effective Radiated Power and evaluate the compliance with the standard bodies and the local regulation guidelines for human exposure to radiofrequency electromagnetic fields.

Objectives of survey

- To evaluate civil aviation concern for the subject radio base stations.
- To evaluate all documents, permits, approval, and insurance for all radio base stations under consideration.
- To identify the sites that's rice non-compliancy with the standard bodies and the local regulation guidelines.

Devices and tools Measurement

Both methods (calculation and measurement) for exposure assessment:

- For calculation:

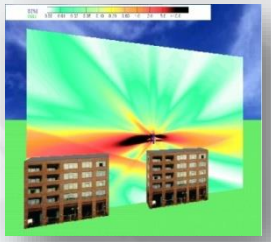
  EFC-400 Telecommunication

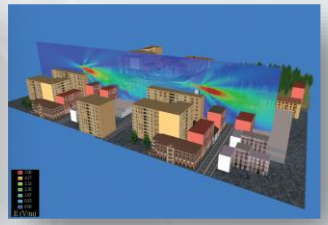
  RF Calculation EMF visual software

- For measurement:

  Narda SRM-3006, NBM550.

  MVG Satimo





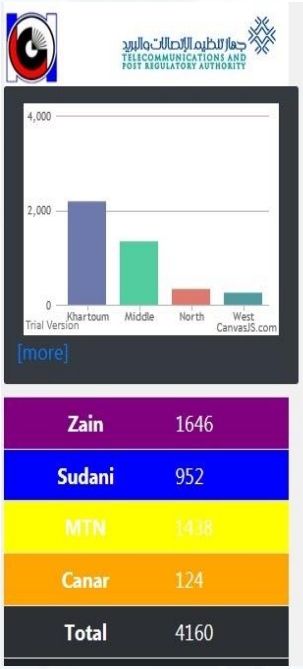
Exposure Limits

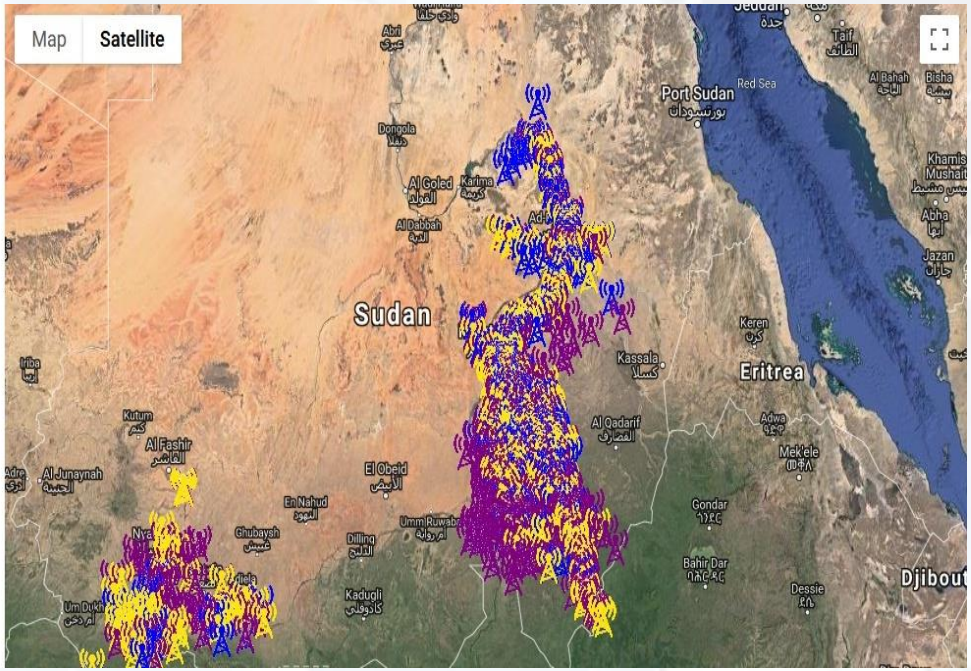
Exposure limits based on [b-ICNIRP] guidelines has been adopted in TPRA, where two kinds of guidance exist:

- Basic restrictions based directly on established adverse health effects.
- Reference levels provided for practical exposure assessment purposes, to determine whether basic restrictions are likely to be exceeded.

Survey Project

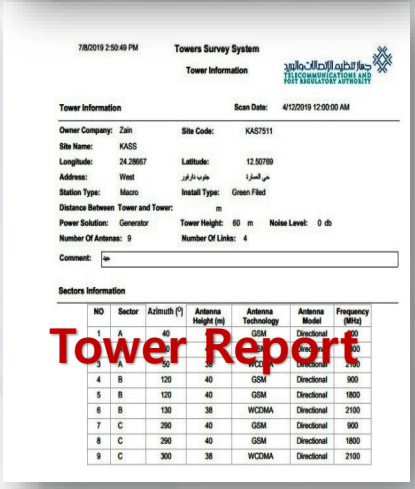
The project started in 2017 by stakeholder company to conformity all base stations in Sudan according to WHO, ICNIRP, ITU recommendations





Dashboard

Confirmative Report



Tower Report

Awareness Campaign

- Started in 2016, to raise awareness and remove people's concerns about the concept of base stations.

[Telecom Tower.mp4]

[Telecom Tower Apps.mp4]

Recommendation

- Foster discusiones and studies on the challenges related to the EMC, EMF, EMF effects on health.
- Contribute to the development of new or revised ITU-T Recommendations, Supplements and Technical Reports on the issues covered under SG5 mandate

Recommendation

- Raise awareness of the importance of base stations for telecommunications equipment.
- Check technical and civil specification of all radio base stations and published approval certificate any of it conformity with world specifications insurance.
- Monitoring the violations and removing them by telecommunication operators.
- Preservation of human health and environment.

Striving to achieve

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