

WAVECONTROL

Safety, Quality, Service

ITUEvents

Sustainable digital transformation week for Africa region

15-19 May 2023
Kampala, Uganda

http://itu.int/go/SDTW_AfricaRegion



Workshop on Electromagnetic Compatibility (EMC) and Human Exposure to Electromagnetic Fields (EMF)

Host:



Co-organizers:

EACO East African Communications Organisation



Session 2: EMF considerations for a sustainable digital transformation: Addressing public concerns on health and safety around telecommunications installations

15 - 19 May 2023 Uganda Communications Commission, Conference Hall, UCC House, Spring Road, Bugolobi Kampala, Uganda

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About Wavecontrol



25 years
since 1997



EMF human exposure
Measurements & Assessments

WAVECONTROL

Safety, Quality, Service



+15 000
Delivered instruments



+80 countries

- ✓ EMF Meters
- ✓ Area Monitors
- ✓ Personal monitors



ISO 9001
certified company



ISO 17025
accredited calibration lab



Wavecontrol products

EMF METERS

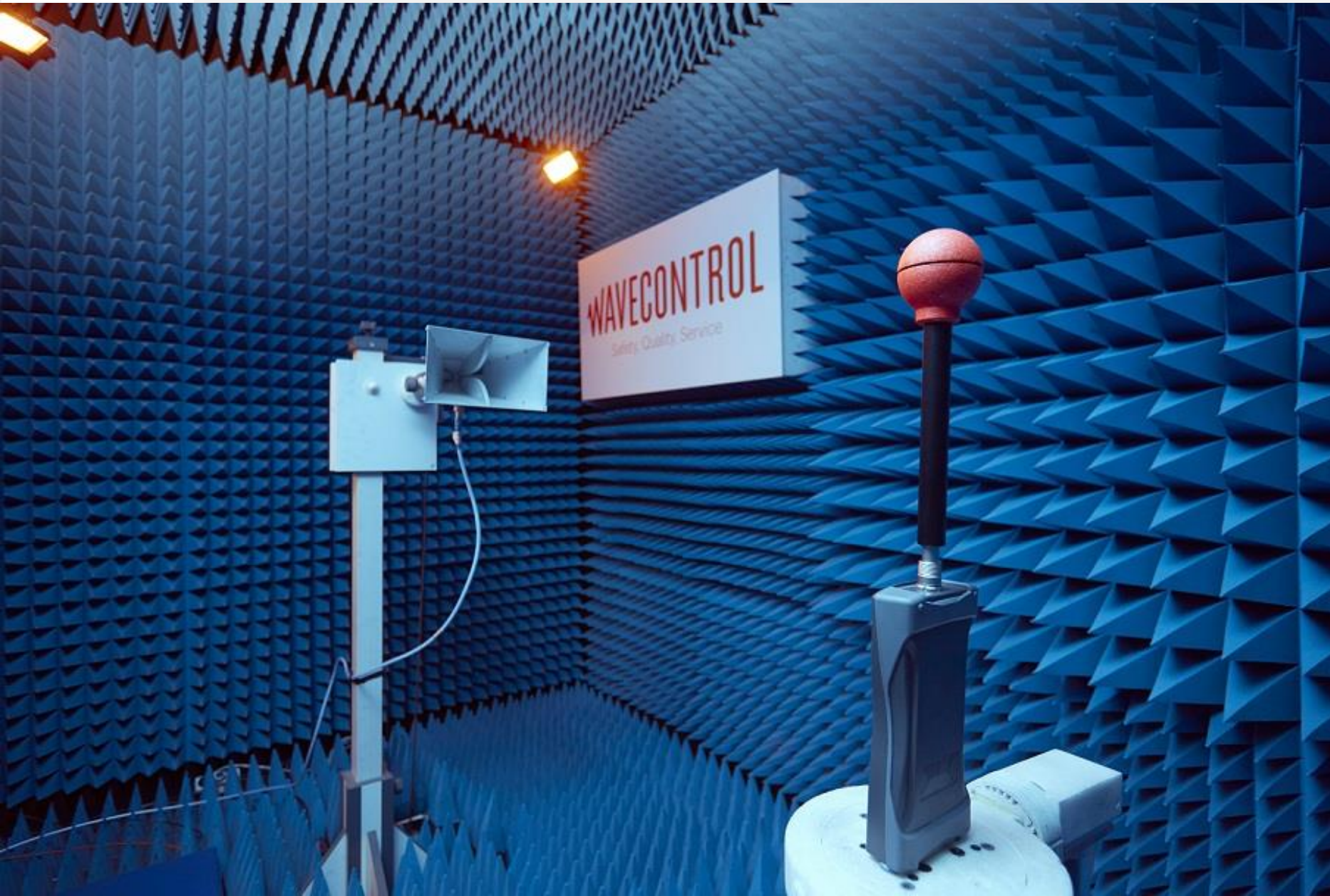


RF PERSONAL MONITORS



AREA MONITORS





**ISO 17025
Accredited
Calibrations**



EMF concerns on human health

PRESENTATION

In some countries, in some regions, in some neighborhoods...

There's a concern about RF electromagnetic fields and health, **many times focused on mobile telephony base stations.**

They have been related to many different health effects, but according to the WHO, after reviewing scientific studies during years, **the only health effect is that related to an increase in the body temperature.**

The levels received by the general public from base stations are, in normal conditions, **far below the international standards.**

The field intensity decreases with distance, so the higher levels will be found near the antennas. But those are restricted areas, that can only be accessed by RF workers (workers that have been trained and given the right tools).

At a distance from the antennas, the levels decrease and **should be far from the limit levels.**



What can/should the stakeholders do?

Governments:

- Set rules for ordered infrastructure deployments.
- Legislate on EMF human exposure.
- Communicate / educate.

Scientific Organizations:

- Promote studies on EMF human exposure.
- Review studies, provide guidelines and suggest limits.

Standardization bodies:

- Provide standards to assess the EMF human exposure.
- Work towards a worldwide harmonization.

UN agencies:

- Review scientific literature, provide confidence and communicate (WHO).
- Help the industry develop telecom in an ordered and safe way and standardize (ITU).

Operators:

- Follow best practices in the deployment of infrastructure.
- Follow Government rules.
- Test to demonstrate compliance. Communicate.

RF radio equipment manufacturers:

- Consider human exposure when designing radio equipment.
- Provide installation best practices to minimize exposure.

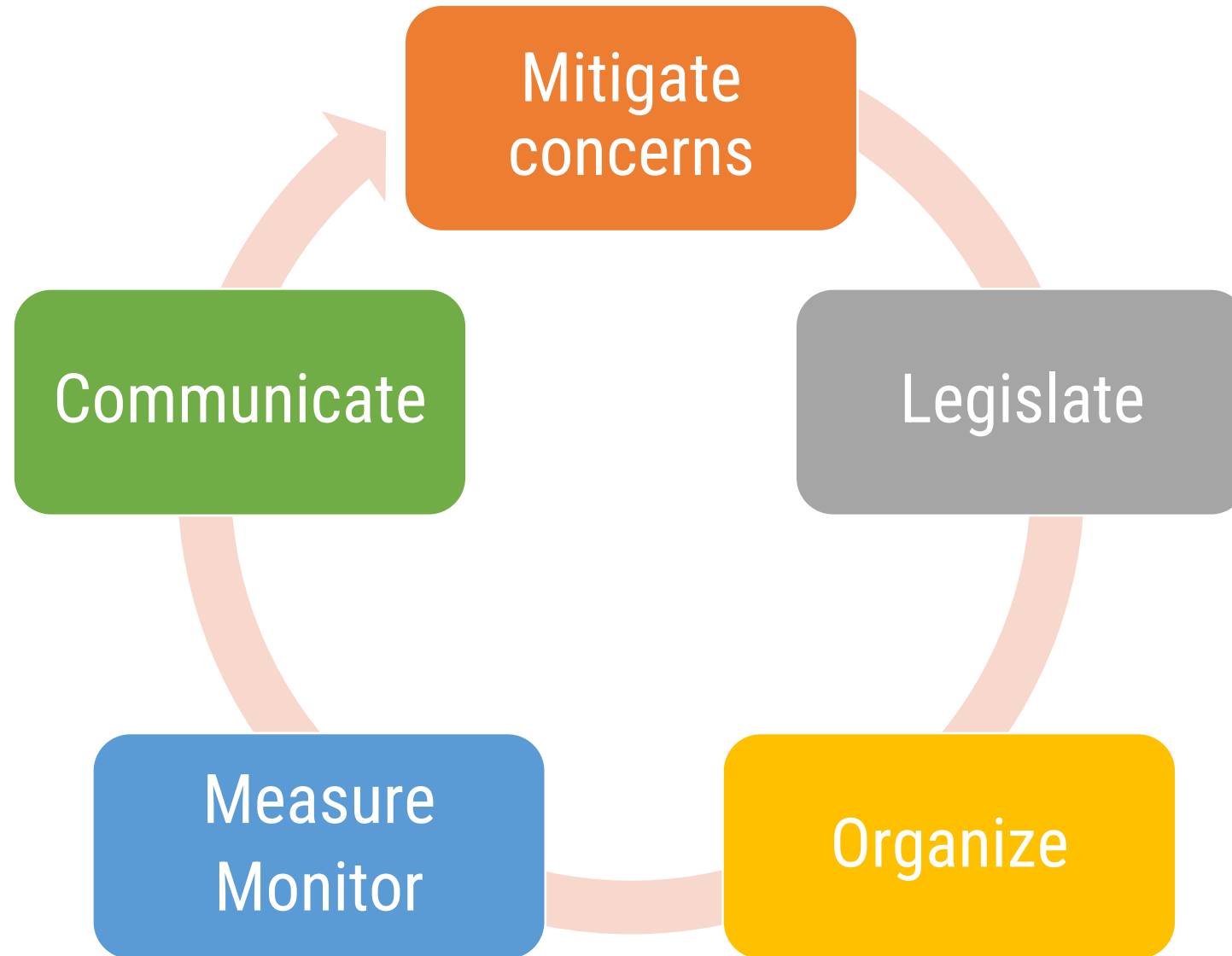
RF test equipment manufacturers:

- Provide test equipment to Governments, Operators and Manufacturers.
- Keep test equipment up to date & according to standards.

Citizens:

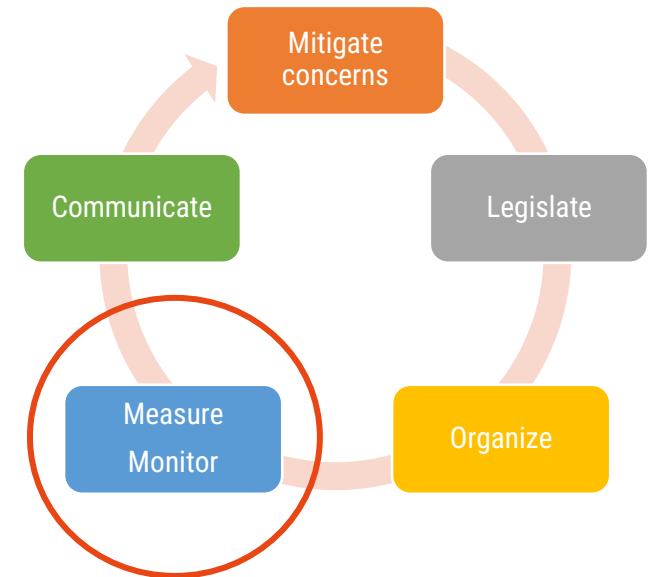
- **Inform themselves. Trust assessments, measurements.**
- **Trust their own governments and the ICNIRP, WHO, ITU.**

Tools to mitigate concerns



What can be done with Measurements / Monitoring?

- 1) BTS certification: ITU-T K.61, K.91, K.100
- 2) RF-EMF monitoring: ITU-T K.83
- 3) RF-EMF Mapping: ITU-T K.113
- 4) Workers' safety: ITU-T K.145

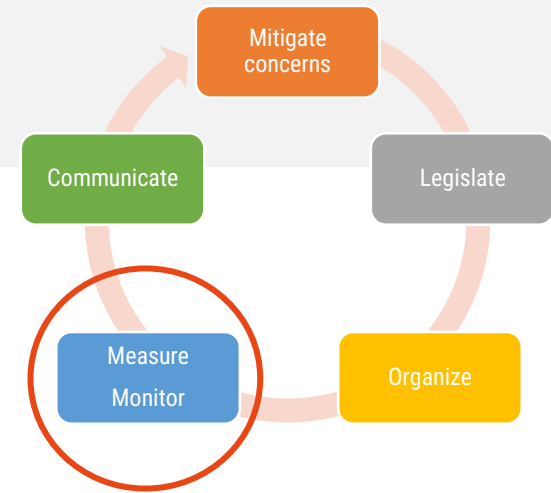


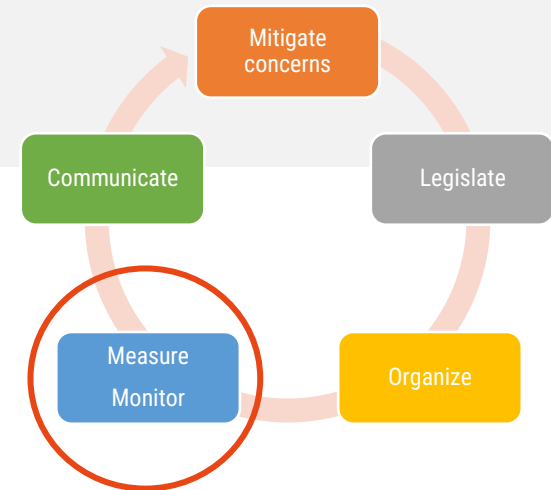
1) **BTS certification:** Field level assessments when put into service

ITU-T K.61 - Guidance on measurement and numerical prediction of electromagnetic fields for compliance with human exposure limits for telecommunication installations.

ITU-T K.91 - Guidance for assessment, evaluation and monitoring of human exposure to radio frequency electromagnetic fields.

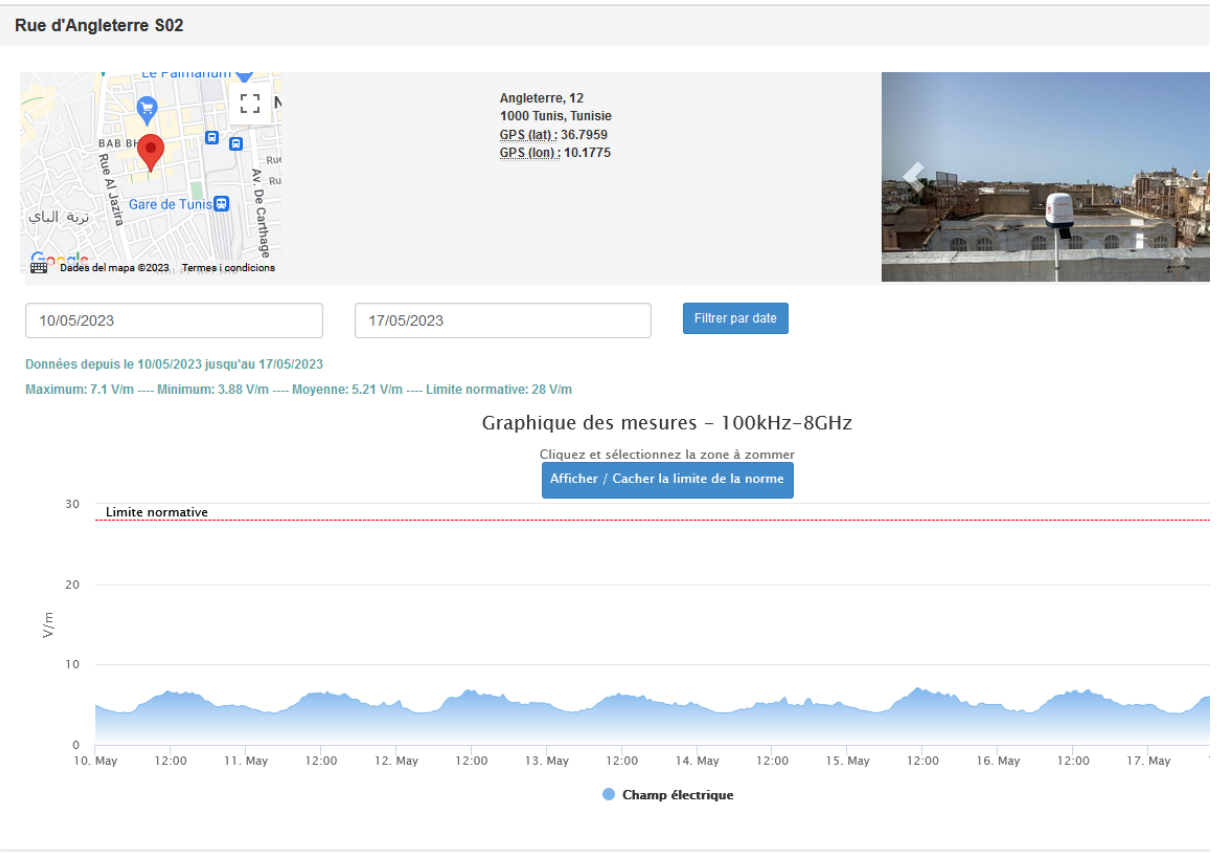
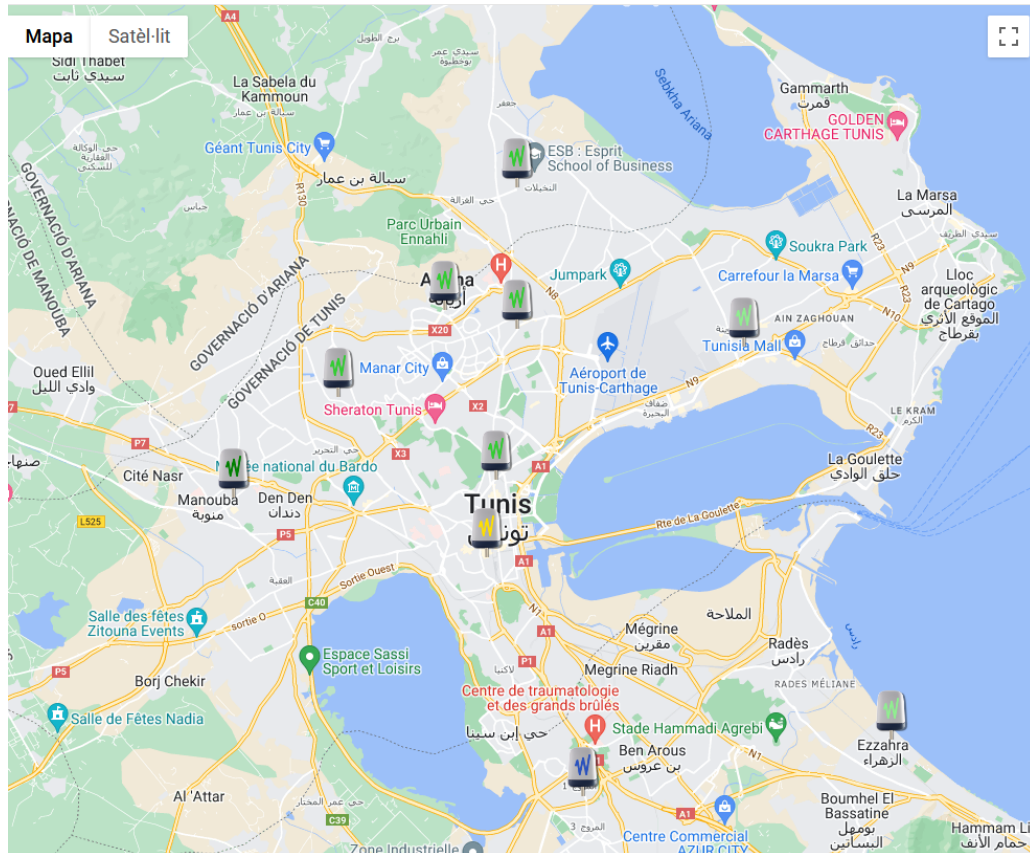
ITU-T K.100 - Measurement of radio frequency electromagnetic fields to determine compliance with human exposure limits when a base station is put into service.

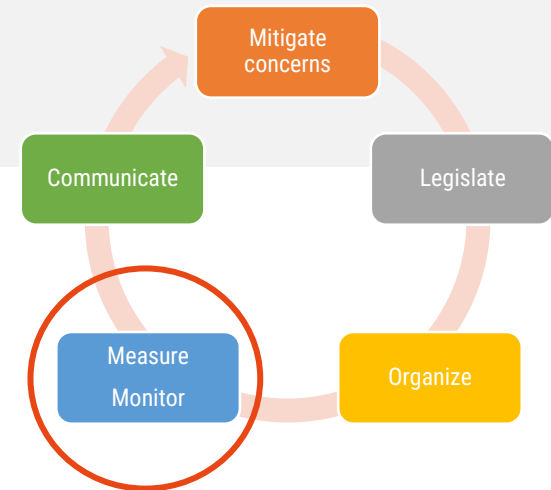




2) RF-EMF monitoring: 24/7, sampling, places of special interest, communication.

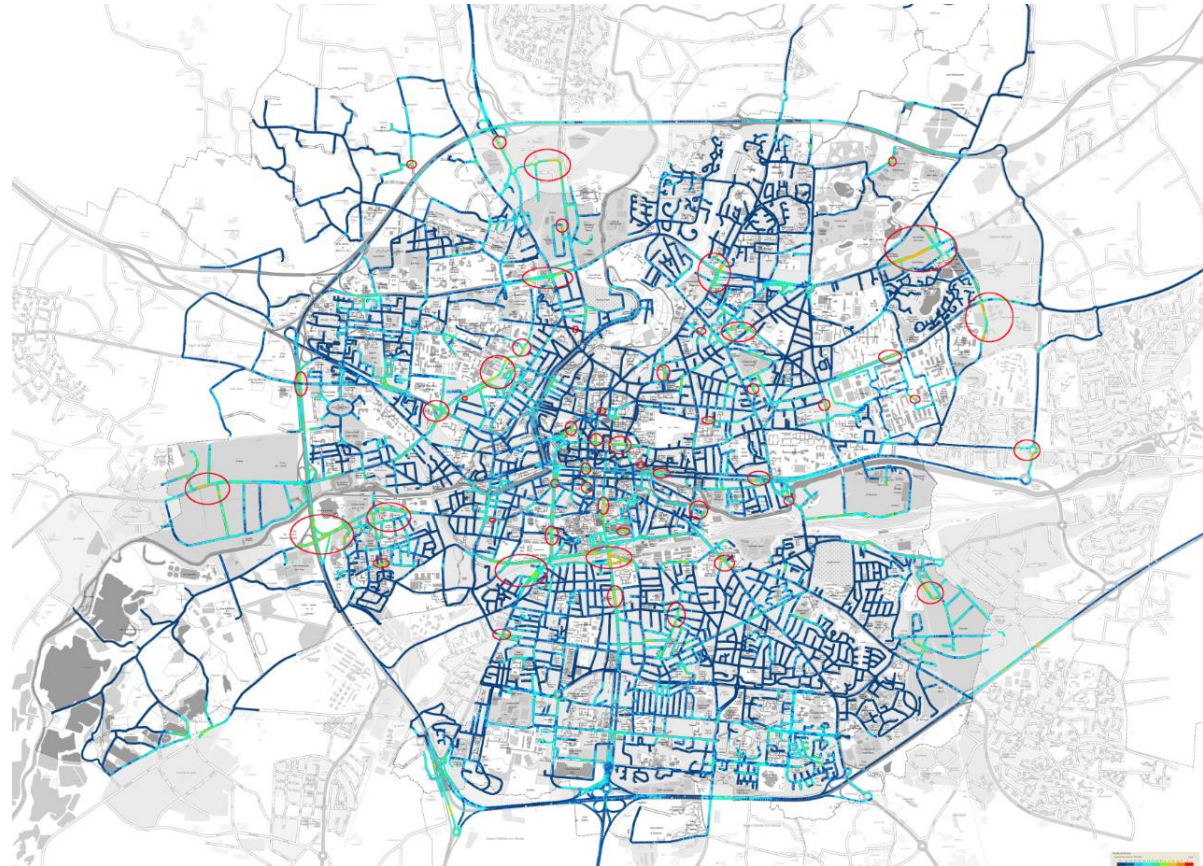
ITU-T K.83 - Monitoring of electromagnetic field levels.





3) **RF-EMF mapping**: assess exposure levels in large areas, communication.

ITU-T K.113 - Monitoring of electromagnetic field levels.

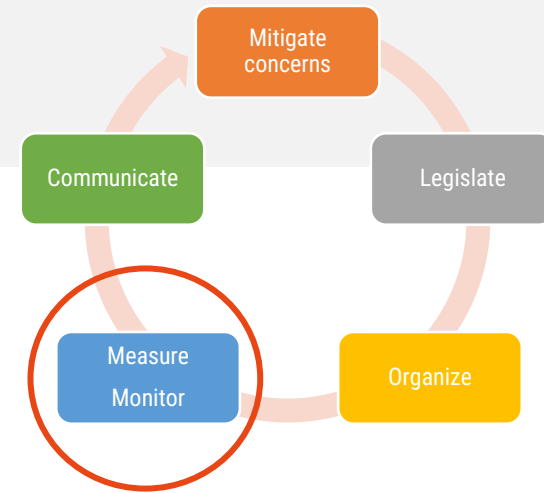


4) Workers' safety: provide workers with the right tools.

ITU-T K.145 - Assessment and management of compliance with radio frequency electromagnetic field exposure limits for workers at radiocommunication sites and facilities.

Workers should be:

- Informed
- Trained
- Protected (provided with the right tools)





Thank you for your attention!

WAVECONTROL

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