Mobiles Antennas, Cables and public Health MACH Case Study

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ROMANIA

MACH Case study

- How to design a participatory process for a research institute on a controversial impact on health of the mobile base stations placed in many very populated areas in Romania

MACH Case Study

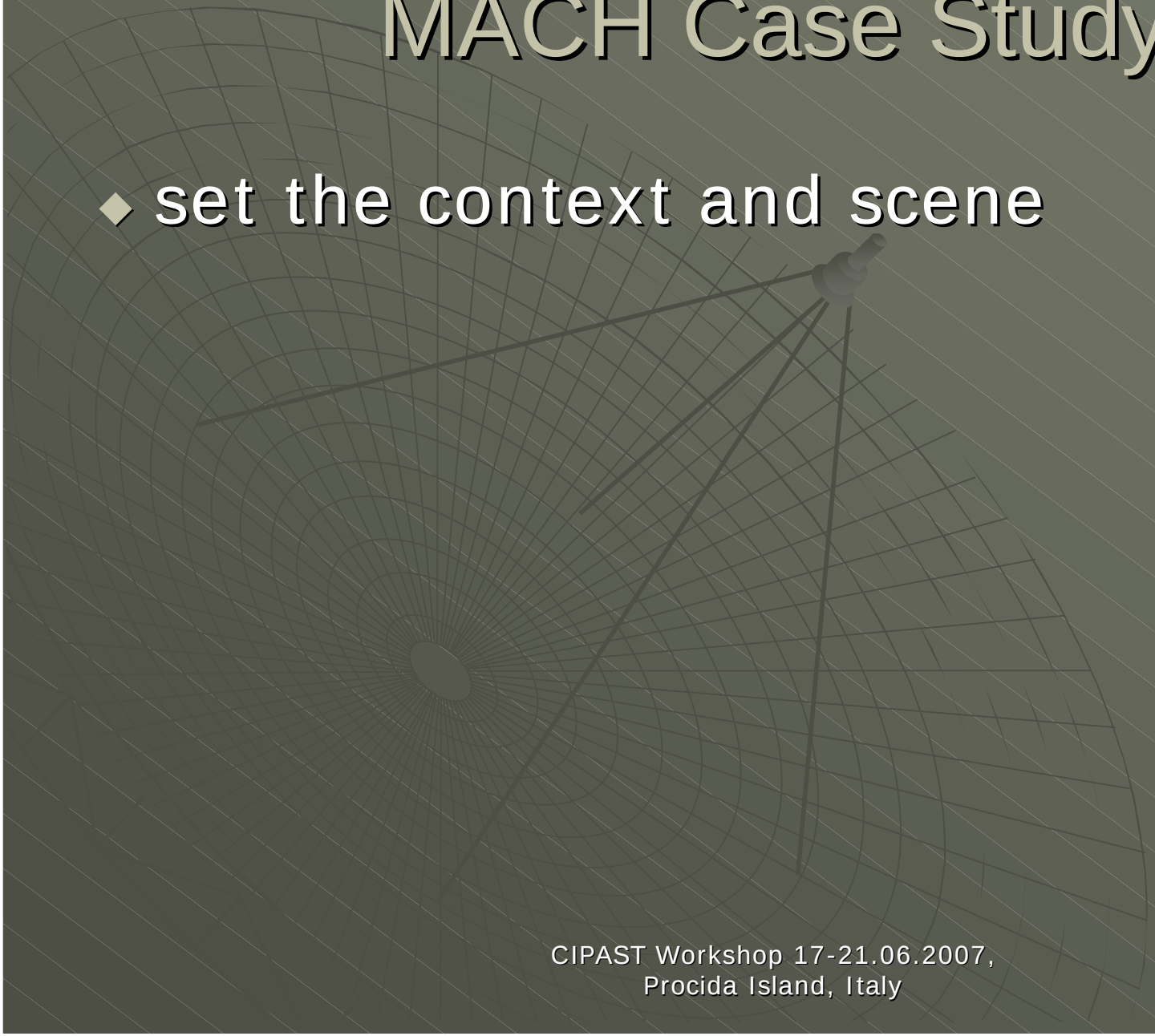
- The participants have to address the problem of a research institution aiming at organising a participatory process in order to treat a controversial issue on public health and comfort of mobile base stations.

MACH Case Study

- general context of the case – the lack of comfort of people leaving with huge antennas and mobile base stations on the roof

MACH Case Study

- set the context and scene



Context and Scene

- The new communication technologies penetration in Romania
- Technical aspects of mobile communications with potential impact on health
- Main actors in communications technologies and public health in Romania
- Key texts and links
- Participatory approach

communication technologies

- The history of mobile phone was from 1970's when Bell Labs developed the Advanced Mobile Phone Standard that initiated the Cellular revolution. From then billion of mobile phone users all over the world and 15 millions in Romania, a country of 22million inhabitants.

communication technologies

- From the beginning of 2003, in Romania with the total liberalization of the electronic communication market, no specific license “per se” is necessary to provide any electronic communication services. A simple notification to ANRC (National Regulatory Authority for Communications) is sufficient.

communication technologies

- By the middle of 2004, 2032 companies had registered notifications at ANRC in order to operate in accordance with the General Authorization.
- Among these, 1148 are now authorized to provide electronic communication networks and services. 191 companies are authorized to provide telephonic services, 425 data transmission services and 475 Internet access. However, not all of these are offering services on a commercial basis. 49 Telephony Operators received Numbering Resources from ANRC

communication technologies

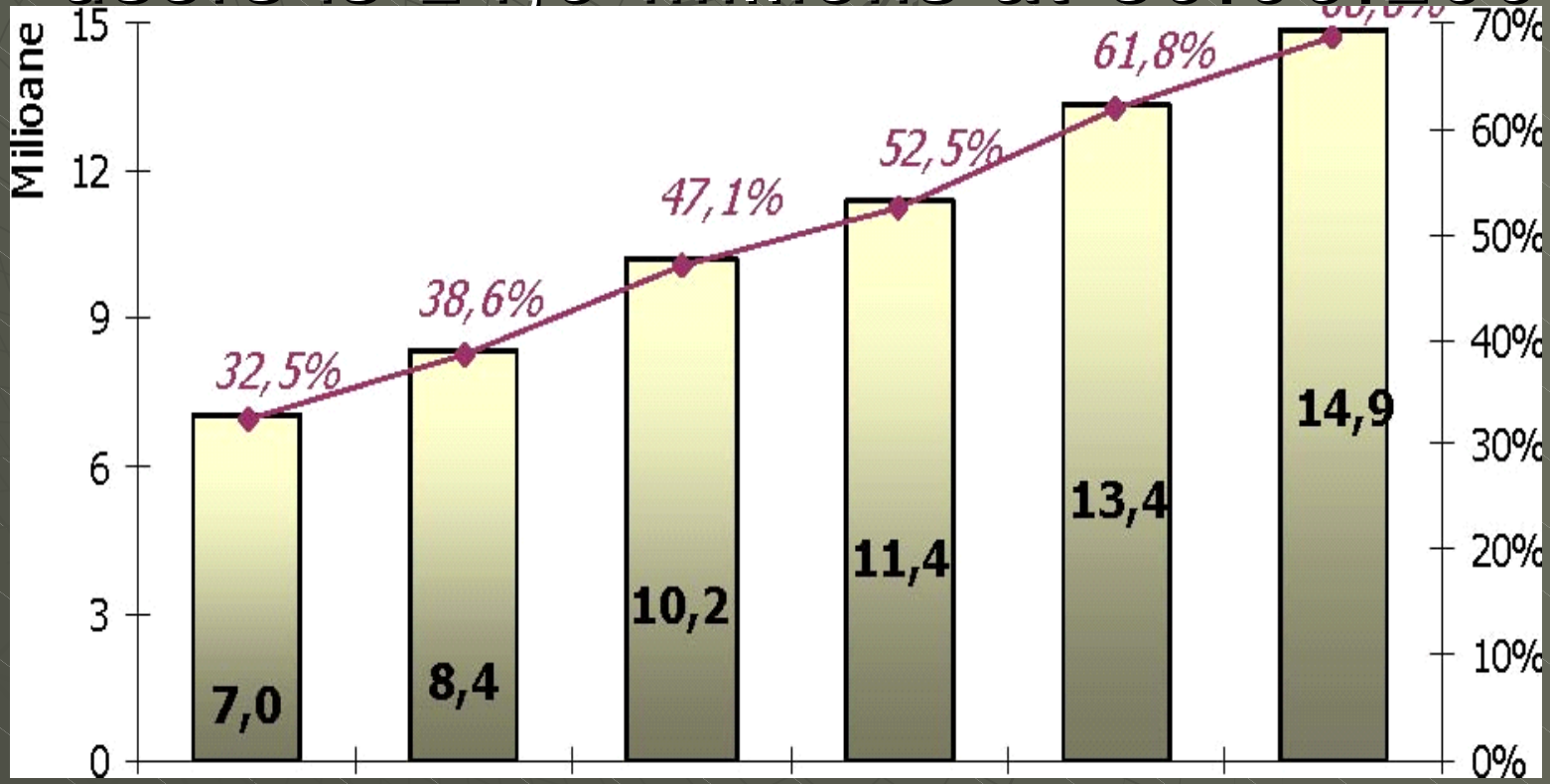
- In April 1997 the GSM services were launched in Romania through Connex – the brand name of Mobifon - and by Orange, previously called Dialog – operated by MobilRom.
- These two companies have rapidly development a rapidly expanding market. Both GSM operators cover around 90% of the Romanian territory. Orange Romania reached about 3,611,000 clients at the end of the first quarter 2004, while Connex had 3,672,138 clients.

communication technologies

- In May 2000 Cosmorom, owned entirely by RomTelecom, also introduced a GSM service and covered around 40% of the area. Cosmorom has today less than 100 000 subscribers.
- In the year 2000 Zapp was launched and offers services in 450 Mhz frequency band, using the CDMA technology. Zapp reached 100 000 customers in March 2003, and estimated to have 200 000 until the end of 2003.

communication technologies

- The total number of mobile phone users is 14,9 millions at 30.06.2006



communication technologies

- Looking around in Bucharest for instance, one could notice on roof-top of many buildings, most of them block of flats, mobile-phone antennas. **Are they harmful for us, people living, working in these buildings?**
- There is a general concern for public health, every where the electromagnetic fields are present.
- Health concerns about exposure to electromagnetic fields (EMFs) are not new. Radiation emitted by overhead power lines (0-100 Hz, or the ELF range of the electromagnetic spectrum) has been under investigation for more than 20 years.

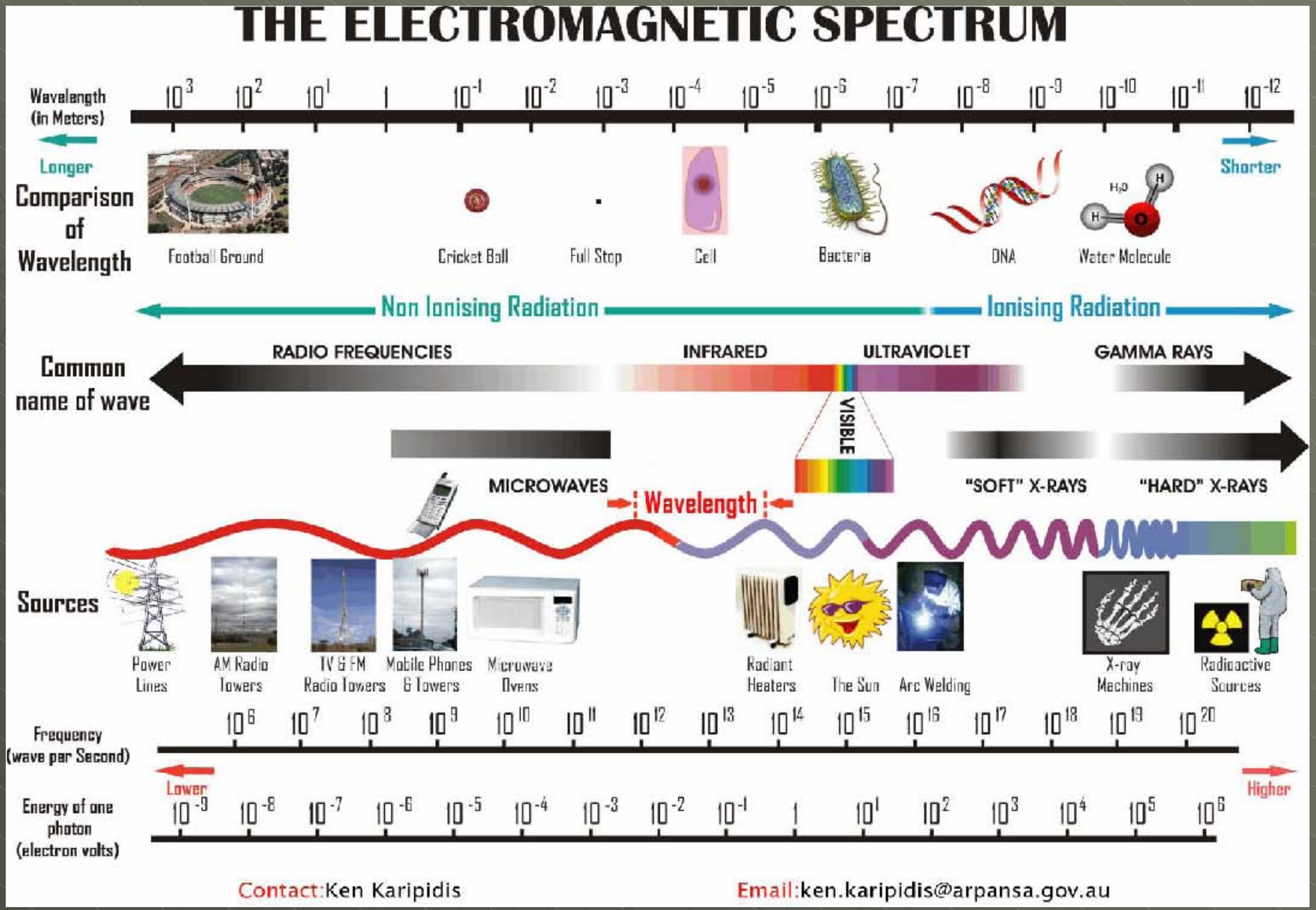
Technical aspects of mobile communication

- **Electrosmog**
- **In our everyday lives, we are all exposed to radiation emitted by a number of devices such as ordinary home appliances (e.g. microwave ovens, toasters, hair dryers, electric shavers, PC screens), industrial heating systems and electricity transformer substations, radio and TV transmitters, anti-theft systems, normal electric circuits, remote control devices, and, of course, mobile phones, which are now being subjected to rigorous investigation.**
- **Mobile phone base stations are radio transmitters with antennas mounted on either free-standing masts or on buildings. Radio signals are fed through cables to the antennas and then launched as radio waves into the area, or cell, around the base station. A typical larger base station installation would consist of a plant room containing the electronic equipment as well as the mast with the antenna**

Technical aspects of mobile communication

Technical aspects of mobile communication

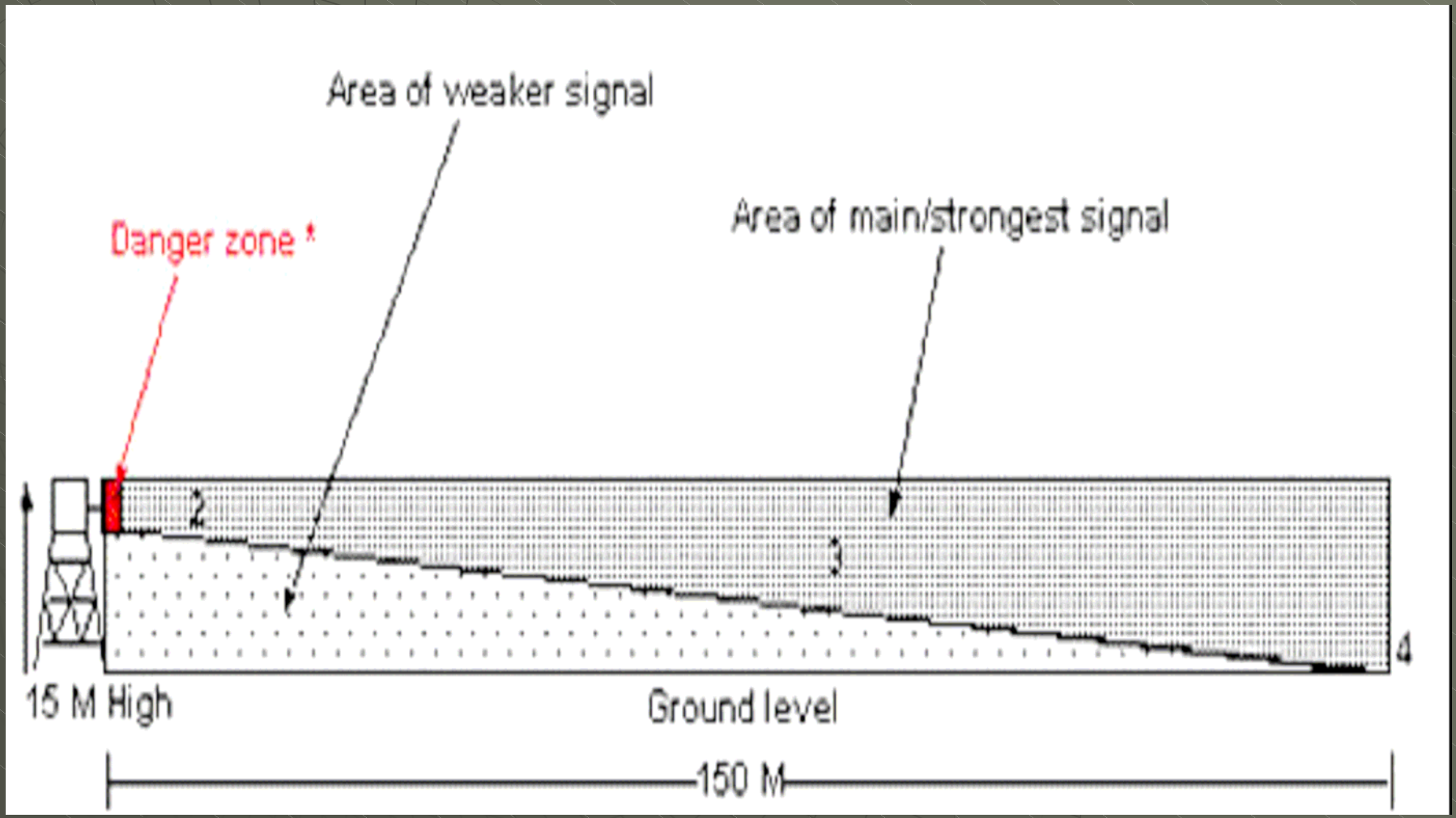
- The frequency of the fields emitted by these various sources, which is spread across the EMF spectrum, determines their physical properties such as the ability to carry power and to heat or penetrate matter.
- Cellular phone technology developed in the 90s operates in the radiofrequency part of the electromagnetic spectrum, is a different part of the spectrum from the EMF range. **Mobile phones antennas and base station are EMF generators**.


THE ELECTROMAGNETIC SPECTRUM
Wavelength (in Meters)
Longer
Shorter
Comparison of Wavelength
Football Ground
Cricket Ball
Full Stop
Cell
Bacteria
DNA
Water Molecule
Non Ionising Radiation
Ionising Radiation
Common name of wave
RADIO FREQUENCIES
INFRARED
ULTRAVIOLET
GAMMA RAYS
VISIBLE
MICROWAVES
Wavelength
"SOFT" X-RAYS
"HARD" X-RAYS
Sources
Power Lines
AM Radio Towers
TV & FM Radio Towers
Mobile Phones & Towers
Microwave Ovens
Radiant Heaters
The Sun
Arc Welding
X-ray Machines
Radioactive Sources
Frequency (wave per Second)
Lower
Higher
Energy of one photon (electron volts)
Contact:Ken Karipidis
Email:ken.karipidis@arpansa.gov.au

Technical aspects of mobile communication

- The emission standards have been set by the International Commission on Non Ionising Radiation Protection (ICNIRP).
- They are designed to prevent body heating effects. The Specific Energy Absorption Rate (SAR) is a measure of the rate at which energy is absorbed by body tissue in an electromagnetic field. It is measured in units of watts per kilogram (W/kg).
- The limits are stricter for the public than telecom workers on the assumption that the public includes children, the elderly and the sick.

Technical aspects of mobile communication



Technical aspects of mobile communication

- Having all these general elements on mobile phones possible adverse effects, it is intended to make people aware of it based on the precautionary principle which guides the implementation of any new technology in public life.

Technical aspects of mobile communication

- **Potential" victims"**
- People leaving in block of flats with mobile base stations.
- People, animals, insects living closely to the mobile base antennas area.

Main actors

- Ministry of Communications and Information Technology (MCTI)
- National Regulatory Authority for Communications and Information Technology – ANRCTI
- National Authority for Consumer Protection – ANPC
- National Institute for Public Health
- Ministry of Public Health
- The AncuDinca anti radiation device maker
- National Communications Research Institute - INSCC
- The National Institute for Research and Development in Informatics (ICI)

Key text and links

- 1. *Establishing a dialogue on risks from electromagnetic fields*
- http://www.who.int/peh-emf/publications/en/EMF_Risk_ALL.pdf or
- http://www.who.int/peh-emf/publications/en/emf_final_300dpi_ALL.pdf
- 2. *What are electromagnetic fields?*
- http://www.who.int/peh-emf/about/WhatisEMF/en/
- 3. *Electromagnetic fields and public health: mobile telephones and their base stations*
- http://www.who.int/mediacentre/factsheets/fs193/en/print.html
- 4. *Electromagnetic fields and public health, Base station and wireless technologies*
  http://www.who.int/mediacentre/factsheets/fs304/en/index.html
- 5. *2006 WHO Research Agenda for Radio Frequency Fields*
- http://www.who.int/peh-emf/research/rf_research_agenda_2006.pdf
- 6. *Working with the community. Handbook on mobile telecoms community*
- *consultation for best sitting practice*
- http://www.mobilemastinfo.com/planning/Risk_Communication_Handbook v2.pdf

Key text and links

- 7. *Mobile phones and health,*
- http://www.euractiv.com/en/infosociety/mobile-phones-health/article-117521
- 8. *ITU International Communication Union- Guidance on complying with limits for human exposure to electromagnetic fields*
- http://www.itu.int/rec/T-REC-K.52-200002-S/en
- 9. *Mobilizing Community Concerns Against Mobile Phone Antennas*
- http://www.gothamgazette.com/article/communitydevelopment/20040527/20/992
- 10. *Mobile Phone Base Station - Public Health Considerations*
- http://www.hants.gov.uk/regulatory/tradingstandards/mobilebase.html
- 11. *Mobile Telephone Communication Antennas: Are They a Health Hazard?,*
- http://www.arpansa.gov.au/is_anten.htm
- 12. *Health reports of Mobile Association Operators*
- http://www.mobilemastinfo.com/information/radiowaves_and_health/health_reports.

Key text and links

- 13. *Epidemiology of Health Effects of Radiofrequency Exposure*
- http://www.icnirp.de/documents/epiRFreviewPublishedinEHPDec04.pdf
- 14. *Current Trends in Health and Safety Risk Assessment of Work-Related Exposure to EMFs, WHO/ICNIRP/EMF-NET Joint Workshop, 14-16.-2.2007, Milan, Italy*
- http://www.icnirp.net/Joint/AbstractCover.pdf
- 15. *Top Ten Tips for Minimizing Your Mobile-Phone Radiations Exposure*
- http://www.hbhealth.com/article.html?art_id=34&page_id=5
- 16. Mobile Phones, Health and the Future of Wireless Technologies, IPTS Report
- http://www.jrc.es/home/report/english/articles/vol61/HEA1E616.htm
- 17. Impacts of Cell-Phone Sites on Public Health,
- http://www.echr.org/en/ws/02/cellphone.htm

Participatory approach

- A participatory approach advocates actively involving ‘the public’ in decision-making processes, whereby the relevant ‘public’ depends upon the topic being addressed. The public can be average citizens, the stakeholders of a particular project or policy, experts and even members of government and private industry.

- In general, policy processes can be seen as a three-step cycle of planning, implementation and evaluation, whereby a participatory approach may be used insome or all of these steps.

Participatory approach

- **Participative Policy Process**
  - Participation in Evaluation
  - Participation in Planning
  - Participation in Implementation

Participatory approach

- transmitting information (unidirectional)
- consultation (bi-directional, but the consulted party frames the issue)
- active participation: based on a partnership in which citizens, stakeholders, experts and/or politicians actively engage in (policy) debate.

Participatory approach

- A participatory approach is particularly appropriate for addressing:
- themes that require ethical, social or cultural study and may call for a choice between fundamental values and principles
- policy issues that call for a combination of public awareness, learning, a search for solutions and emotional or moral acceptance of the eventual decision
- public policy choices that will rely on the precautionary principle or the weight of evidence
- underlying values and principles that must be clarified before detailed proposals or risk management options are brought forward
- a clearly defined set of options or proposals that support the search for consensus or innovative solutions.

Participatory approach

- In deciding which method(s) to employ, one must take into account the following five elements:
- **Objectives:** Reasons for involvement and expected outcomes
- **Topic:** The nature and scope of the issue
- **Participants:** Who is affected, interested or can contribute to solutions
- **Time:** Amount of time available
- **Budget:** Availability of resources

MACH Case Study 9:30-11:30

- TASKS on groups generalities

  - CIPAST Toolkit analysis
  - Selection of a method
  - Motivate the selection, risks, critical points
  - Set particularities of the participatory method implementation in a given context (multidimensional-spatial, temporal, content)
  - Draft a press release on the procedure lounching

MACH Case Study 12:00-14:00

- For a commonly accepted methods by all groups the participants will regroup on the main tasks to simulate de implementation of the participatory exercise.
- Formulate the case participatory description on a file available on the allotted laptops in order to be further reviewed and improved by CIPAST experts