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TOWARD THE TELECOMMUNICATION IMPACT ONTO ENVIRONMENT

The problem which is normally addressed to the subject of the field is a quality transmission of digital signals from a transmitting radio-relay device to a receiving which depends on the impact of environmental effects on the propagation of electromagnetic waves. We would like to point out another (opposite) problem about the telecommunication (wireless) systems influence onto environment.

To that side may be concerns the possible health and environmental impacts of radiofrequency radiation from cellular phone towers and antennas, which represents a risk to the health of people. Can be asks several questions related to the approval process for cellular phone towers and antennas and the possible health and environmental effects related to their use.

Some phenomenological evidence [1] shows that the electromagnetic radiation caused by cellular telecommunications, has now become the worst man-made hazard for all life and the environment. Moreover, the negative effects of this radiation have being shown by scientists as of yet there has been nothing done to protect or make the public aware of the dangerous they are confronted with. At present has been sustained and growing interest in characterizing the net energy impact of information and communication technology (ICT), which results from indirect effects offsetting (or amplifying) the energy directly consumed by ICT equipment. These indirect effects may be either positive or negative, and there is considerable disagreement as to the direction of this sign as well as the effect magnitude.

Uncertainty persists in understanding the net energy effects of ICT. Results of indirect energy effect studies are highly sensitive to scoping decisions and assumptions made by the scientists. Uncertainty increases as the impact scope broadens, due to complex and interconnected effects.

While the overall net effect of ICT is likely to remain unknown, this review suggests several guidelines for improving research quality in this area, including increased data collection, enhancing analytical (physical) modeling studies with sensitivity analysis, greater care in scoping, less confidence in characterizing aggregate impacts, more effort on understanding user behavior, and more contextual integration across the different levels of the effect.

There are some evidencies that electromagnetic radiation emitted from telecommunication towers is causing significant health issues to people living in close proximity to these transmitters. We would raise questions about the objectivity of scientific studies supporting the common position related to the potential health hazards of electromagnetic radiation and about the perceived independence of staff assessing these studies.

Electromagnetic situation indoors in the presence of random inhomogeneities from the point of view of their danger was considered. Using density of the energy as the normalized value for protection of the medical staff from the influence of electromagnetic radiation was discussed.

The question can the telecommunication systems be hazardous to our health in any way still among intriguing and far from resolution. It seems the issue of the impact of electromagnetic radiation on humans and living creatures is and has been controversial since the early days of wireless. Waves, are like any other unknowns, creates fears, which can/cannot be fully real. The true thing is that the impacts on health are not confirmed even to those who know what electromagnetic waves are. Hence, besides certain limited known impacts lots of other impacts remain speculative. Of course, electromagnetic waves comprise a wide range phenomena ranging from the ELF (extra low frequency) in the order to 10s of Hz to broadcasting and microwave frequencies in the order of kHz, MHz and few GHz, which we believe the question meant these frequencies (called the RF-frequencies and Microwaves) where most recent wireless communications occur. Above that there are the higher GHz frequencies (in the order of tens or hundreds of GHz) which will utilized in near future -near field- communications as well). The higher bands of the electromagnetic spectrum include the infra-red, visible light, ultra violet, X and Gamma rays. These have many applications in therapy, military and other applications.

References

1. Environmental Impact of Telecommunication System and Services, 13th Discussion Forum on Life Cycle Assessment, April 25 2001, Swiss Federal Institute of Technology, Lausanne, Switzerland.