French National Committee for Scientific Radioelectricity

French Section of the International Scientific Radio Union

Activity Report 2000 / 2003

- The full report -
(French)

- Excerpts -

- page 14

Commission E : Noises and electromagnetic interference

Electromagnetic Terrorism is a matter of concern: sources of powerful and compact electromagnetic waves directed towards sensitive facilities, inserting subversive data in equipment, temporary deactivation of the management of sensitive sites. Experiments at the laboratory level demonstrating such risks have been carried out particularly in the United States together with their economic, psychological and media assessment.

CHAIRMAN'S REPORT

- from page 21 -

- Another important point was emphasized in commission E on electromagnetic interference and their influences on electronic equipment. This problem had already been discussed at the conference in Toronto, in the form of electromagnetic terrorism.

Several conferences have dealt with the problem of the influence of electromagnetic waves on very high power electronic equipment and it has been attempted to assess their vulnerability. With the advent of processors using the dimensions of circuits of increasingly small size (currently limited to 0.18 µ m in most sectors), the operating voltages are also reduced. This naturally implies increased sensitivity of electronic equipment to electromagnetic phenomena. This aspect should be taken into account in the design of future computers, with appropriate shielding. The same is true of communications systems, and of consumer electronics public.

ACTIVITY REPORT FOR COMMITTEES

- pages 41 & 42

1 - Synthesis of certain Scientific Facts marking the Commission E at the Maastricht URSI AG-2002

- International contributions

One session involving almost exclusively American and European communications dealt with a topic of concern namely electromagnetic terrorism.

It could be envisaged to produce powerful and compact sources of electromagnetic waves in order to direct them towards sensitive facilities. We are thinking of computers in banks, control devices of nuclear facilities, telecommunications equipment and transportation.

The analyses presented in this session took two types of risks into consideration, the first unlikely but achievable relate to inserting subversive data into equipment, the latter much more likely and easier to implement could cause such incidents as the temporary deactivation of the management of an airport!

These presentations were accompanied by results from experiments often conducted at a laboratory and providing physical evidence of these new threats of which we can still hardly perceive the economic, psychological and media consequences.

In the USA complex devices dedicated to this type of experiences are being installed. We are talking about rooms equipped with the necessary facilities for processing information showing the most vulnerable situations. The goal envisioned concerns as a first step to establish the link(s) between the electromagnetic coupling and the probability of occurrence of erroneous data. We understand that the diversity of these couplings, as well as the complexity of information processing makes this a very difficult task.

It is likely that the society phenomena as we know today will only increase the interest of scientists to protect our sensitive facilities against such new threats.

-- Development of methods and ways to study and protect civilian and military sites against EM attack caused by a lightning strike in the vicinity.