To: U.S. Dept. Health and Human Service Preamble (HHS)

U.S. Federal Communication Commission (FCC)

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INTRODUCTION

Rete 6V/mx6' is a net of Italian registered association such as: CODACONS current in Rome and presents in every Italian region, A.M.I.C.A. in Rome, Medici per l'Ambiente in Genova, Atto Primo: Salute, Ambiente e Cultura, current in San Gimignano (Siena), other associations and individual members.

Rete 6V/mx6' s aim is to reestablish the Regulatory Frame of people exposures to radio-frequencies (RFs), that between 1998 and 2024 protected Italian people from global overexposure to RFs.

It is based on two supports:

1. the exposure limit equal to 6 V/m, for iterated indoor exposures for more than 4 hours;
2. this limit should be respected for every interval of 6 minutes.

Such a frame was attacked under the pressure of the telecommunication oligopoly, present in Italy, in 2012 when a bill stated that the limit had to be respected for every interval of 24 hours, and in 2024 when another bill elevated the upper exposure limit to 15 V/m, for no temporary exposition.

We are conscious that Italian regulatory frame for global exposure yet is one of the better frame in the words, bit the one for partial exposure (mobile phone for the head) is the same of EU, established in 1999, and even 25% less protective, for people, compared to the one adopted in USA in 1997.

The scientific premises of such a regulation matured only in 2018, when the results of two experimental macroassy on lab animals were available, indicating that electromagnetic exposure, at levels that in Italy are forbidden, not in all the Countries in EU can induce cancer in animal models.

Recently the International Commission for Electromagnetic Fields (ICEMS), headquartered in Venice, formulated a frame of restrictions for people exposures to RFs, that based on new evidence arisen from the experimental macro-assay of US NTP and of Institute Ramazzini, in Bologna, provided a consistent frame base both on the Precautionary Principle, valid in EU, and on the Prudent Avoidance and Prudent Use, the cautionary principle USA proposed at the Conference on Environment of Johannesburg.

We know that ICEMS have exposed such a frame to the receivers in address (U.S. HHS and U.S. FCC).

The paper submitted by ICEMS is based on the assumptions that bio-electromagnetic adverse effects for exposed humans exist and that they also appear in the presence of weak electromagnetic fields in the case of iterated and long-term exposures.

Such an assumption is adopted upon the evidence of carcinogenicity of radio-frequencies (RFs) showed in the studies of U.S. NTP of N.I.E.H.S, (Official NTP Technical Report 595/596) and of the Italian B. Ramazzini Institute. (Falcioni L et al. Report of final results regarding brain and heart tumors in Sprague-Dawley rats exposed from prenatal life until natural death to mobile phone radio-frequency field representative of a 1.8 GHz GSM base station environmental emission. Env Res 165:496-503, 2018, https://doi.org/10.1016/j.envres.2018.01.037), both assessed in 2018 . NTP conclusion is that there is *clear evidence* of carcinogenicity , in the animal model (S.D. rodents) due to near field exposures to GSM and CDMA at 1.5, 3.0, 6.0 W/Kg SAR, with statistically significance of the sample exposed to 6.0 W/Kg compared with controls. Ramazzini Institute observed a statistically significative cancer evidence in S.D. rats exposed to 50 V/m in far field.

DISCUSSION

It is obvious that the current limits for NIR, provided by IEEE (std. C95-2 1991-2), both for global and for partial exposure, are now over age. They where deduced from the inability to walk of mice exposed to 100 W/m^2 in HF, assumed as a thermal threshold to humans. More recently the threshold was translated in SAR units and again was adopted as thermal threshold of 4 W/Kg (correspondent to 100 W/m^2 in HF).

The criticism moved against the assessment of the NTP study, the cost of which is officially quantified in 25M$, even from US National Bodies, testifies to a prevalence of power decisions over scientific objectivity. The almost fuzzy statement that the results of the NTP study cannot be taken in any count, since got in animal model, is not shareable, since the previous thermal threshold, on which all the frame of restrictions to RF exposure is based in the std. IEEE C95-2, was got on the behaviour of rodents, while the new evidences are clinical and histological evidences *in corpore vili* of lab animals that are considered a benchmark for human carcinogenicity in all the scientific oncology community. At the same level other criticisms to both NTP amd Ramazzini Institute macro-assay of carcinogenicity.

As when you have an old car that has to be abandoned, it is not sufficient that the car is broken, but it needs that there is available a new well functioning car; in the same way we need a new frame to

deduce limits to RF exposure, being protective with regards to cases of cancer that are ascertained in Courts worldwide in the world and in presence of other atypical syndromes.

To get such limits for RF exposure, we need the full disclosure of the non thermal mechanism of interaction of RFs with living bodies. On the other hand we cannot wait for other cancers, and other morbidities, following cancer or not, while we are waiting for a so important scientific progress.

We need new Interim Limits and Exposure Limits, to be adopted now. Today ICEMS, the International Commission for Electromagnetic Safety , which edited two Monographs on RF bio-interaction (Electromagnetic Biology Medicine, vol 25(4), 2006, and Eur. Journ. Of Cancer Library vol. 5, 2010, download for free at HTTP.//icems.eu/papers.htm) and therefore was indicated by the Parliamentary Assembly of Council of Europe (Resolution April 2nd 2009 n. 1815, Doc 12608 § 44) as the scientific organization that can be consulted by its European Member States to determine risk assessment and management of the electromagnetic hazard; ICEMS has formulated new Interim exposure and dosimetric Limits, maintaining intact the reference framework for deducing limits starting from a threshold of probable damage, by re-determining the threshold as the lowest established adverse effect (LOEL), as prescribed by the WHO protocols.

Except that this LOEL may be recognized, both for whole-body exposures and for head or trunk exposures, both for thermal or non thermal effects of RFs, at the threshold above which schwannoma occurs in laboratory animals (Sprague Dawley rats), respectively in the macro-assay of the Ramazzini Institute (2018) and in that of the US NTP (2017-2018). Once assumed such new threshold, we have to apply a redundancy coefficient - a safety factor - the same today adopted for global exposure: 0.02,. It has to be valid both for global and partial exposure to head and trunk, since it is not believable that head and heart are less delicate than the whole body, mostly to prevent the long-term non thermal effects of RFs, as cancer and as the syndrome EHS, as well.

CONCLUSION

We urge the adoption of new Interim Limits (SAR) and Interim Exposure Limits (in Watt/m^2, V/m, A/m), substituting the old ones, adopted in FCC OET Bulletin 65, May 1997, and in Recommendation 1999/519/CE, July 1999, that only limit thermal effects that are not the emergent electromagnetic risk.

The new threshold, suggested by ICEMS, can quietly replaces the old threshold, only valid for acute thermal effects, based on the disturbance of the behavior of laboratory mice, created in the

third quarter of the last century: threshold from which the exposure limits were deduced by the AICGH, later absorbed by the IEEE which formulated the thermal threshold as dosimetric limits.

The limits proposed by ICEMS should be temporary, pending full clarification by science of the mechanisms and effects of electromagnetic interaction and living organisms.

These new limits, however, are urgent because they serve to prevent the death and illness of so many people around the world, of whom only those who have appealed to the judiciary and won the case have made it to the news: too few for convincing epidemiological statistics, iceberg of a hidden possible cancer incidence increase, and hidden atypical disease as EHS.

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