



Ms Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th St., SW
Washington DC
United States of America

30 August 2013

Dear Ms Dortch,

Re: FCC Notice of Inquiry – Radiofrequency Exposure Limits (29 March 2013)

The GSM Association (GSMA) is responding to the Federal Communications Commission (FCC) Notice of Inquiry (the ‘Inquiry’) released on 29 March 2013. The GSMA notes the *Report and Order* and the *Further Notice of Proposed Rule Making* released at the same time but does not offer comments on the matters raised in those dockets.

By way of introduction the GSMA¹ represents the interests of mobile operators worldwide. Spanning more than 220 countries, the GSMA unites nearly 800 of the world’s mobile operators with more than 230 companies in the broader mobile ecosystem, including handset makers, software companies, equipment providers and Internet companies, as well as organisations in industry sectors such as financial services, healthcare, media, transport and utilities. The GSMA also produces industry-leading events such as the Mobile World Congress and Mobile Asia Expo.

The GSMA welcomes the initiative of the FCC to review the matters raised in the Inquiry.

The GSMA notes that the FCC² position of ‘*confidence in the current exposure limits*’ is consistent with the conclusions of many other expert reviews³. The GSMA agrees with the FCC⁴ that examination of any potential changes to the exposure limits must be ‘science-based.’

In this submission GSMA recommends that the FCC:

- consider the scientific rationale of the IEEE Committee in C95.1, 2005 and the ICNIRP and examine the present FCC partial body SAR limit to consider alignment with the internationally harmonised value of 2 W/kg measured in 10 g;
- maintain a science based approach to the setting of exposure limits; and
- strongly oppose local siting ordinances that seek to impose unscientific restrictions on the locations for antenna sites.

¹ <http://www.gsma.com/aboutus/>

² Para. 205 of the Inquiry.

³ <http://www.gsma.com/publicpolicy/mobile-and-health/science-overview/reports-and-statements-index>

⁴ Para. 210 of the Inquiry.

International Harmonisation of RF Exposure Standards for Devices

World Health Organization (WHO⁵) in fact sheet 193 says in respect of RF exposure guidelines:

'Radiofrequency exposure limits for mobile phone users are given in terms of Specific Absorption Rate (SAR) – the rate of radiofrequency energy absorption per unit mass of the body. Currently, two international bodies^{1,2} have developed exposure guidelines for workers and for the general public, except patients undergoing medical diagnosis or treatment. These guidelines are based on a detailed assessment of the available scientific evidence.'

The two international exposure guidelines identified in the WHO fact sheet are:

¹*International Commission on Non-Ionizing Radiation Protection (ICNIRP). Statement on the "Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300 GHz)", 2009.*

²*Institute of Electrical and Electronics Engineers (IEEE). IEEE standard for safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 kHz to 300 GHz, IEEE Std C95.1, 2005.*

As the FCC notes at para. 220 the present FCC partial body SAR limit applicable to devices limit is 1.6 W/kg in 1 g whereas both the ICNIRP and IEEE have adopted 2.0 W/kg in 10 g.

The IEEE committee in C.95.1, 2005 at clause C.2.2.2.1 explains that the standard *'...protects against all established adverse health effects from RF exposure to the whole body or to localized areas of the human body.'* One of the changes in C95.1, 2005 was to adopt a partial body SAR limit of 2.0 W/kg in 10 g. IEEE C.95.1,2005 at clause C.2.2.2.1.1 explains that in moving from 1.6 W/kg in 1 g to 2.0 W/kg in 10 g the IEEE committee was changing from the *'dosimetry-based'* rationale of ANSI C95.1-1982 and IEEE C95.1, 1999 to the *'biologically-based rationale'* of ICNIRP for the limit value. The committee also stated that the move achieved harmonisation with the ICNIRP limit values which were adopted by more than 35 countries.

The WHO⁶ recommends adoption of the ICNIRP human exposure guidelines:

'WHO encourages the establishment of exposure limits and other control measures that provide the same or similar level of health protection for all people. It endorses the guidelines of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) and encourages Member States to adopt these international guidelines...'

The International Telecommunications Union (ITU⁷) also recommends adoption of the ICNIRP human exposure guidelines:

⁵ WHO, Electromagnetic fields and public health: mobile phones, Fact sheet N°193, June 2011 available at <http://www.who.int/mediacentre/factsheets/fs193/en/index.html>

⁶ Page 7 in WHO, Framework for developing health-based EMF standards, 2005 available at <http://www.who.int/peh-emf/standards/en/>

⁷ Article 6 on page 6 of ITU, Guidance on complying with limits for human exposure to electromagnetic fields, k.52, December 2004 available at <http://www.itu.int/rec/T-REC-K.52/en>

'In many cases, local or national regulatory agencies or standards bodies promulgate the EMF safety limits. If such limits do not exist, or if they do not cover the frequencies of interest, then ICNIRP limits (Appendix I) should be used.'

The ICNIRP limits are the basis of European Council Recommendation (1999/519/EC)⁸ which specifies electromagnetic field (EMF) exposure limits for the public based on the ICNIRP (1998) guidelines and in particular adopts 2 W/kg in 10 g as the part body SAR limit applicable to mobile devices⁹.

As an international trade association the GSMA generally supports harmonisation of technical standards as providing significant consumer benefits. The GSMA recommends that the FCC consider the scientific rationale of the IEEE Committee in C95.1, 2005 and the ICNIRP and examine the present FCC partial body SAR limit to consider alignment with the internationally harmonised value of 2 W/kg measured in 10 g.

Maintain a Science Based Approach to Setting Exposure Limit Values

Some commentators have suggested that scientific uncertainty warrants application of the 'precautionary principle.' On 25 February 2011 in a reply to European Parliament written question E-000436/2011 the European Commission¹⁰ states:

'The Commission considers that Council Recommendation (1999/519/EC) is in line with the application of the precautionary principle. The Commission is ready to revise or update the recommendation if justified on the basis of the most recent independent scientific assessments.'

As we note above the Council Recommendation (1999/519/EC) is based on the ICNIRP limits. At para. 237 of the Inquiry the FCC notes that some countries have applied 'extra "precautionary" environmental limits for fixed transmitters.' The WHO¹¹ warns against the adoption of arbitrary limit values:

'A principle requirement is that such policies be adopted only under the condition that scientific assessments of risk and science-based exposure limits should not be undermined by the adoption of arbitrary cautionary approaches. That would occur, for example, if limit values were lowered to levels that bear no relationship to the established hazards or have inappropriate arbitrary adjustments to the limit values to account for the extent of scientific uncertainty.'

Where arbitrary limit values have been adopted they have been associated with unintended consequences including negative impacts on the ability to deploy new mobile services¹².

⁸ Council recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz), 1999/519/EC.

⁹ EN 50360:2001 Product standard to demonstrate the compliance of mobile phones with the basic restrictions related to human exposure to electromagnetic fields (300 MHz - 3 GHz).

¹⁰ <http://www.europarl.europa.eu/sides/getAllAnswers.do?reference=E-2011-000436&language=EN>

¹¹ http://www.who.int/docstore/peh-emf/publications/facts_press/EMF-Precaution.htm

¹² Communication of the BIPT Council of 15 February 2013 on the radiation standards in the Brussels Capital Region, 15 February 2013 available at http://www.bipt.be/en/425/ShowDoc/3912/Communications/Communication_of_the_BIPT_Council_of_15_February_2.aspx.

The GSMA recommends that the FCC maintain a science based approach to the setting of exposure limits.

Negative Impact of Unscientific Siting Restrictions

At paras. 238 and 239 the FCC notes that some local efforts have sought to restrict the siting of fixed wireless base stations in particular areas. The GSMA has supported a case study¹³ to investigate the impact of hypothetical buffer zone policies on a metropolitan city, Melbourne (Australia) which uses the ICNIRP limits and which currently has no planning based exclusions. The report presents data on the impact of 100 m, 300 m, 500 m and 1 km hypothetical buffer zones across the whole urban area and two selected suburbs: a built-up inner urban suburb and a lower density outer suburb. The main findings of the analysis include:

- Across the whole metropolitan area, 54% of all existing radio base stations would be impacted by a 500 m exclusion zone around community facilities (schools, pre-school and medical facilities).
- In an inner urban suburb an exclusion zone of 500 m around all community facilities would cover nearly 90% of the total geographic area of the suburb, affecting virtually all-existing antennas sites and making it nearly impossible to improve mobile network services.
- If applied consistently then the converse would also apply affecting the ability to locate new community facilities. If a 500 m exclusion zone was applied across the whole metropolitan area, nearly half (47.8%) of all existing community facilities (pre-schools, primary/secondary schools and medical facilities) would already be located within that exclusion zone. Alternatively, more than 13% of the metropolitan area would be out-of-bounds as a future site for a community facility due to its inclusion within an exclusion zone.

The GSMA recommends that the FCC strongly oppose local siting ordinances that seek to impose unscientific restrictions on the locations for antenna sites.

The GSMA thanks the FCC for the opportunity to provide comment on the subject of the Inquiry and remains ready to provide additional information if required.

Yours faithfully,



Jack Rowley, PhD
Senior Director Research & Sustainability
GSMA

¹³ Impact of exclusion zone policies on siting base stations: Australian case study analysis. Report prepared for GSMA by Evans Planning, in association with Manidis Roberts and Piconet Consulting, August 2012. Available at <http://www.gsma.com/publicpolicy/impact-of-exclusion-zones-policies-on-siting-of-base-stations>