Inmarsat Response to Ofcom's Consultation on "Implementation of measures to require compliance with international guidelines for limiting exposure to electromagnetic fields (EMF)"

13 November 2020

1. Introduction

Inmarsat is pleased to respond to Ofcom's consultation on "Implementation of measures to require compliance with international guidelines for limiting exposure to electromagnetic fields (EMF)".

As was stated in our response to the consultation on measures to require compliance with international guidelines for limiting exposure to EMF in June 2020, Inmarsat already requires that the earth stations in its networks meet certain requirements to ensure safe operation concerning human exposure to EMF globally. This requirement is achieved through our own internal standards and by references to standards developed by external bodies. Therefore, we well come these implementation measures as they formalise and create clarity on the requirements of limits of human exposure to EMF.

Inmarsat is a licensee in the UK regarding ground stations used by the EAN, while some other Inmarsat devices used in the UK are not licensed to Inmarsat, but are included in the ship or aircraft radio licence for maritime and aviation terminals respectively.

Inmarsat land mobile terminals operate under licence exemption regulations and we understand that there will be a similar approach for licensed and licence-exempt terminals, which will require amending licence exemption regulations on a case-by-case basis in the future to include an EMF-related condition. We welcome that proposed revisions to licence exemption regulations will be subject to further consultation.

2. Answers to questions

Question 1: Please provide feedback on the additions, amendments and clarifications we have made to the wording of the licence condition to implement our decisions on the scope of the licence condition in our October 2020 Statement, giving reasons for your response.

Inmarsat agrees with the additions, amendments, and welcomes the clarifications.

Question 2: Please provide feedback on the additions and clarifications to our 'Guidance on EMF Compliance and Enforcement', giving reasons for your response.

Inmarsat is satisfied with the additions and clarifications and welcomes the explanation as to how to demonstrate compliance in situations where the radio equipment is not at a permanent fixed location.

Question 3: Please provide feedback on the trial version of our EMF calculator, giving reasons for your response.

Inmarsat generally agrees with making an EMF calculator available on your website and the explanation how it can be used to demonstrate compliance. Inmarsat would like to stress the need for the EMF calculator to include clearly the assumptions that the calculator makes in the deriving the separation distance to meet the EMF exposure limits.

We have one detailed comment on the EMF calculator as provided. The table below is included in the EMF calculator in the worksheet "Annex". Looking at this table, one might take the value of 2.250 W/m^2 power density as the limit that applies for the whole frequency range of 400-2000 MHz. However, the applicable value is given by f/200 and hence the value of 2.250 W/m^2 power density is only applicable for the operating frequency of 450 MHz; which is the default operating frequency parameter used in the EMF calculator in the worksheet "Ofcom calculator ICNIRP 1998". To avoid potential confusion we suggest adding a note to clarify that power density limit for the frequency range of 400-2000 MHz is given by f/200 and the value of 2.250 W/m^2 power density corresponds to operating frequency of 450 MHz . The same applies to the E-field and H-field limits for the 400-2000 MHz frequency range.

Reference levels for general public exposure to time-varying electric and magnetic fields*

Frequency range index	Min frequency *MHz*	Max frequency *MHz*	E-field strength *V/m*	H-field strength *A/m*	Power density *W/m^2*
0	0.1	0.15	87.000	5.000	-
1	0.15	1	87.000	0.002	-
2	1	10	4.101	0.002	-
3	10	400	28.000	0.073	2.000
4	400	2000	29.168	0.078	2.250
5	2000	300000	61.000	0.160	10.000

*Table 7. from The ICNIRP 1998 Guidelines available at https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf