



Ofcom Consultation:

Spectrum access for Enhanced Long-Range Navigation (eLoran) systems at 90-110 kHz

Response by the Radio Society of Great Britain

July, 2023

The Radio Society of Great Britain (RSGB, www.rsgb.org) provides this response to the Ofcom eLoran consultation on behalf of its members and the wider UK Amateur Radio community.

Amateur Radio is a science-based technical hobby enjoyed by over three million people worldwide. It is fully recognised by the International Telecommunication Union (ITU) and is listed in the ITU Radio Regulations as the 'Amateur Service' and the 'Amateur Satellite Service'. RSGB is recognised as one of the leading national Amateur Radio organisations.

International amateur service allocations range from 136kHz to over 240GHz. The global ITU-R amateur service allocation at 135.7-137.8kHz is of particular relevance in this case.

Amateur usage is limited by the ITU to 1Watt erp and is inherently a weak signal reception regime that is vulnerable to manmade noise sources and spurious emissions. The very high radiated power and out of band emissions proposed for eLoran is thus of significant concern.

The RSGB is therefore grateful for this opportunity to provide the response overleaf to the Ofcom consultation; and wishes to be kept informed of these developments.

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Consultation Questions & Answers

Question 1: *Do you agree in principle with our proposal to introduce a new licence product to enable authorisation of the use of the 90-110 kHz band for eLoran services?*

We agree in principle, as having such systems formally licensed will aid both transparency and clarify the technical conditions for such use.

This is particularly important given their very high radiated power and (for the first time) a significant number of UK stations, compared to legacy Loran deployments.

Question 2: *Are you aware of any alternative current or future uses for the 90-110 kHz band, including any which might preclude use of these frequencies for eLoran? If so, please provide details.*

No comment on other ITU services, but our volunteers have seen extensive developments in Wireless Power Transfer (WPT), at or near these frequencies and contributed to CEPT studies.

Question 3: *Do you agree with the non-technical conditions we propose to include in the new 90-110 kHz licence? Please set out your reasons and provide any relevant evidence.*

We strongly agree with Ofcom Para-3.8 that such eLoran systems should be on a 'no interference no protection' basis. Further to Ofcom 3.10, we strongly support full publication on the Ofcom website including specific transmission site locations and their radiated power. We also favour a 'use or loose' clause or some other time-related review/expiry period.

In addition, we request there is clear contact information in order to liaise with such licensees. Likewise they should be clearly listed in the downloadable extracts of the Wireless Telegraphy Register (WTR) which is regularly published as Open data on the Ofcom website.

Question 4: *Do you agree with the technical conditions we propose to include in the new 90-110 kHz licence? Please set out your reasons and provide any relevant evidence.*

In the draft licence we are especially concerned with the 'Transmit signal emission profile'. This emission mask is of significant concern. As currently proposed any single transmitter can be 400kW EIRP (56dBW) with 1% of that radiated power (ie 4kW) out-of-band, of which 2kW can directly affect the adjacent 136kHz weak-signal amateur service allocation.

As a functional e-Loran system requires a 'chain' of multiple transmitters with overlapping strong groundwave coverage, this can lead to even higher aggregated interference levels.

We therefore request a tighter emission mask (or notch) to protect other adjacent frequency users above 110kHz, including the sensitive 136kHz amateur service allocation.