Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title: Low power licence-exemption limits above 10GHz

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Name Dr H Smith / Dr P Thomasson Signed (if hard copy)

We make the following responses to the consultation questions (numbered as indicated in the consultation document):

Q1: No. We add the following comments:

a) The table in section 4.8 of the consultation document states clearly that a conclusion of earlier work evaluating UWB in the bands between 3-10GHz was that for radio astronomy: "There is a potential for interference from UWB devices some distance away". We strongly believe that this statement also applies above 10GHz, regardless of the additional margins mentioned in the consultation document, and that further analysis is needed.

Since the early 1990's there has been in place an internationally drawn up and agreed set of practical protection criteria for radio astronomical measurements that most administrations respect - Recommendation ITU-R RA.769. Consideration of the levels detailed in ITU-R RA.769 versus the proposed permitted power levels for UWB devices indicates that there is likely to be interference to radio astronomical observations from even a single device some distance away from an observatory site, let alone an aggregate of interference from several such devices in that area.

We also believe that the issue of aggregation of interference needs further study and a better understanding of how to model the numbers of interferers in any particular area (and their locations) is required.

b) The RAS in the UK already has experience of licence exempt devices and to date these have not been effectively controlled, which has resulted in the band in question being unavailable to observers. [This issue has been discussed with OFCOM] We believe that the UWB devices under consideration in this consultation will under normal operation offer the potential for interference to the RAS. Additionally, we suggest that the restrictions to operation mentioned, such as no fixed use out of doors and in vehicles, will be difficult, if not impossible to implement in practice, resulting in potentially higher levels of interference.

c) The issue of UWB devices and potential interference with the RAS is an ongoing topic of work within the radio astronomy community in the UK, Europe and further afield. We believe that the eventual results of this international effort should be carefully considered by OFCOM. The issues clearly need further analysis and discussion before any decisions are made.

Q2: No comment

Q3: No comment

Q4: No comment

Q5: No. We draw attention to our response to Q1 and add:

We strongly object to any changes in licensing or legislation that would allow a class of device to exist that in certain circumstances could create permissible levels of interference at RAS sites that exceed the internationally agreed thresholds in ITU-R RA.769.

Radio astronomical receiving systems are not general communications devices with commercial levels of performance. The RAS employs high gain antennas or antenna arrays in combination with extremely sensitive, state of the art low-noise receivers and complex observing techniques, for the purpose of detecting and studying extremely faint signals from cosmic radio sources. The sensitivities of such receiving systems are improving continually and protection from interference for the RAS must not be degraded.

The consultation document itself acknowledges the conclusion that at lower frequencies there is a potential for interference from UWB devices some distance away from RAS sites. We believe that this also applies above 10GHz with the licence-exemption limits proposed and therefore cannot agree with the limits as set out in the consultation document.