RESPONSE TO CONSULTATION:- Managing the spectrum above 275 GHz

Question 1.

The upper frequency limit is of no concern to us, but the allocation of the spectrum from 275 GHz to 3000 GHz for licence-exempt use is of concern.

Question 2.

a) As stated in the consultation document, the development of equipment to function in the frequency range 275 GHz to 3000 GHz is in its infancy. This could change dramatically over the next 10 to 20 years, just as has other electronic / computing equipment. I would suggest that we have very little idea at the present time of the equipment likely to be in use in 20 years time and which could considerably affect the passive services, especially if the equipment is space-born. Likewise, new scientific research over the next 20 years could result in new spectral lines (for example from an amino-acid = living organisms) being discovered outside the bands currently specified in Footnote 5.565. If spectrum is licensed for use, then it would probably be quite easy to re-allocate frequencies so that scientific research could continue. It is unlikely to be easy for licence-exempt equipment already in use.

b) It is extremely important that Equation 1.1 (Section 4.18) does not apply to the bands specified in Footnote 5.565.

c) No ground-based astronomical research is likely to take place in the U.K. at frequencies between 275 GHz & 3000 GHz. However, extremely sensitive equipment is being developed at the various observatories and research establishments in the U.K. to be installed at telescope sites on the tops of high mountains. It is extremely important that this development is not compromised by somebody using licence-exempt equipment in the vicinity of the research establishments and observatories.

d) We do not live in isolation from the rest of Europe, in fact from the rest of the world, especially when one considers space / aircraft communications. The allocation of spectrum between 275 GHz and 3000 GHz and its regulation is being discussed in other E.U. countries and at the I.T.U. The U.K. should not introduce any regulations which are different from those elsewhere in the world. This is particularly important for space use. The U.K. should not be 'jumping the gun'.

e) The consultation refers to a possible use for aircraft to satellite communications i.e. in space. Not only can such communications affect space telescopes, but also ground-based telescopes if the aircraft or satellites are visible to the telescopes. One can envisage aircraft from the U.K. having licence-exempt equipment and transmitting above a radio telescope in another country, which could even be being used by U.K. scientists. Once again, this is probably better controlled if it is not licence-exempt.

f) As indicated in (b) above, no ground-based radio astronomical research is likely to take place in the U.K., but at observatories on a few very high sites, not only in Europe, but also in the rest of the world. Most of these are / will be available for use by U.K. astronomers. It should be possible to protect these sites at all frequencies in the range 275 GHz to 3000 GHz without unduly affecting commercial concerns apart from those in space. There needs to be appropriate regulation for this which needs to agreed worldwide.