RSGB response to the paper:

"**Notice of Ofcom's proposal to exempt automotive short-range radar users at 79 GHz from wireless telegraphy licensing.**"

We wish to respond to, and comment on, the paper issued on 9th December, 2004 under the above title.

Section 1, The Summary

[1.1] states that the "Community Decision" will include the band 77, 78, 79 and 80GHz.

It is our understanding that 5GHz of bandwidth are required for this "service" viz. 77, 78, 79, 80 and 81GHz. Point 2.3 in Section 2 (Notice), confirms that the required band is as we understand it.

[1.2] states that this Community Decision "should be implemented by 1 January, 2005", i.e.14 days before closure of Ofcom's Consultation period.

Section 2, Notice

[2.3] states that CEPT identified the 79GHz band as being the most suitable for the purposes of vehicle SRR in 2003, following the EU Mandate on Harmonisation.

This is not correct, since this band was nominated for this purpose in at least 2000, and probably well before this.

[2.7] The RSGB agrees that licensing such devices (of which there may be up to eight, possibly more, *per vehicle*) is impracticable and should, therefore, be de-regulated i.e, exempted from licensing.

However, the second part of this point is manifestly incorrect, as it states that (verbatim), ***"…there presently no other users of this band in the UK currently and there is therefore no current need to impose licensing in order to avoid the effects of harmful interference on other users of that band"***.

This was subsequently modified by a Corrigendum (dated 15 December, 2004) which recognised that there are, indeed, other users of the band by the statement ***"The frequency range 77 - 79 GHz is currently used to a small extent by amateur, amateur satellite, radio astronomy, government and radio determination use".***

It was further stated in the Corrigendum that: "Under an EC mandate the compatibility of automotive short-range radar (SRR) equipment with these services was studied by European Conference of Postal and Telecommunications Administrations (CEPT), resulting in SRR parameters

stated in EC decision 2004/545/EC. ***These sharing studies concluded SRR could co-exist with these services in the 79 GHz frequency band"***.

There is little doubt that SRR will be able to co-exist with existing services since it is, by definition, a short range service. It would appear that the studies did ***not*** determine whether the existing services, ***specifically those using extremely weak signal flux viz. the Amateur Radio Services and the (passive) Radio Astronomy Service,*** will be able to co-exist with SRR in some circumstances and, particularly, in urban locations.

The fact that there are current users of the band suggests that the observation in item 4.22 (below) is also incorrect.

Section 4, Regulatory Impact Assessment

[4.14] "The 79GHz band is currently unencumbered, and as technological developments are still required to facilitate the use of this spectrum, there are unlikely to be any other possible users of this band in the short to medium term".

[4.16] "Firstly, as there are currently no other users of this band, use of this equipment will not create interference to other users (in this band)"

Again these are manifestly incorrect statements, closely related to the mistaken concept given in Section 2, point 2.7, above and subsequently corrected by the Corrigendum.

[4.22] "Finally there is a risk that designating the 79GHz band for use by SRR equipment rather than an alternative band, could hamper the uptake of this equipment. The radar technology required to exploit this band is still under development and it may be a number of years before the SRR equipment which can operate in this band becomes available. In order to enable early adoption of IVS using SRR equipment the EU is proposing to allow limited use of the 24GHz band in the short term. This will allow equipment using the 24GHz band to be installed from 2005 to 2014, up to a maximum of 8.3% of the total vehicle stock. Ofcom is to consult on the use of the 24GHz band by SRR equipment during 2005".

If Ofcom "is to consult during 2005", then this is after installation is started!

Conversely, it can be argued, with equal validity, "interim, short-term use" of the 24GHz band would ***remove or diminish*** the commercial incentive to develop 79GHz equipment. There is known to be at least one manufacturer in the UK aiming to use the 79GHz band for ACC (Adaptive Cruise Control) well within the timescale 2005 – 2014, and in preference to the 24GHz band.
It should be noted that, again, the 24GHz band (actually 21.5 – 26.5GHz) is used by the same four services as those mentioned in the Corrigendum.

The question therefore arises as to what is short term use of the 24GHz band? There are projections by the automobile industry itself that suggest that “short term use of the 24GHz band” will mean that vehicles fitted with such devices will be in use until ***at least*** the year 2020. The problems to the extremely weak signal flux services are the same as in the 79GHz band.

The Amateur and Amateur Satellite Services’ Perspective

1 Both the Amateur and Amateur Satellite Services (recognised internationally by ITU and represented in ITU by the International Amateur Radio Union, IARU) are licensed users of this band (and several other wavebands both lower and higher in frequency than this band).

2 Indeed, the Amateur Services have had access to many of the mm-wavebands since they were first allocated (?) in 1947, at the Atlantic City World Administrative Radio Conference, and have enjoyed Amateur Primary Exclusive status in many of them following WARC 1979, although they are currently, after WRC 2000, Amateur Primary.

3 ***The band is shared with the Radio Location, Space Research and Radio Astronomy Services.***

4 It should be noted that:

4.1 The majority of current amateur activity in the mm-wavebands uses narrowband modes (CW, SSB and NBFM), powers of 0dBW or less, and antenna gains up to 40dB or more.

4.2 Although licensed to use 26dBW, the cost of current technology for higher powers precludes the use of higher powers by amateurs. There is no doubt that amateurs will exploit higher powers when it becomes cost-effective to do so.

4.3 The Amateur Services generally, in using narrowband modes both for transmission and reception, employ extremely stable transmitters and very low noise-threshold receivers (for example1dB or less in the 24GHz band).

4.4 RR footnote 5.149 states that allocations in the 76 – 86GHz band should be made with due consideration for those services which use extremely weak signal-flux. Whilst aimed primarily at the Radio Astronomy Service/Space research, we believe that similar consideration must be given to both Amateur Services, since they, too, employ extremely weak signal-flux levels

4.5 Footnote EU35 states that the band 75.5 – 76GHz remains allocated to the Amateur Services **after** 2006 on a Secondary basis.

5 The current status (after WRC 2000) in the 76 – 81GHz band allocated to the Amateur Services is as follows:

75.500 - 76.000GHz	**Amateur/Amateur Satellite Primary** (until 31Dec 2004). UK usage, centre of activity 75.976GHz Licensed for 26dBW ERP (at antenna)
77.500 – 78.000GHz	**Amateur/Amateur Satellite Primary** (IARU, after 1 January, 2007 recommended "harmonised" centre of activity, 77.5000 – 77.502GHz)
76.000 – 77.500GHz	**Amateur/Amateur Satellite Secondary**
78.000 – 81.000GHz	**Amateur Service <u>only</u>, Secondary**
(78.000 – 79.000GHz	**<u>Not</u> allocated to Amateur Satellite Service**)

Radio Society of Great Britain,

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