

**Title:**

Mr

**Forename:**

Martin

**Surname:**

Hall

**Representing:**

Self

**Organisation (if applicable):**

**What additional details do you want to keep confidential?:**

No

**If you want part of your response kept confidential, which parts?:**

**Ofcom may publish a response summary:**

Yes

**I confirm that I have read the declaration:**

Yes

**Additional comments:**

I have held an Amateur Radio Full Licence (and its predecessor Class B Licence) since approximately 1972.

My interest in amateur radio led me into a career as an engineer and latterly project manager in the field of radio communications and radio-based systems, from which I have only recently retired. I have been a Chartered Engineer since 1976, and am a Member of the Institution of Engineering and Technology. During my time in the profession I was engaged for a time in the design, development, and handover to series production of base station and handset cellular radio products.

During my time as an amateur radio enthusiast I have built transmitting, receiving and accessory equipment for VHF, UHF and microwave bands, and this interest is ongoing. I use the results of my construction activities to support my interest in weak signal communications and propagation over long distances, and have an ongoing update and improvement programme for my VHF/UHF and Microwave systems, working towards EME

capability

Qualifications: BSc (2.1 Physics), MSc (Radar and Radio Communications), ARCS, CEng, MIET.

**Question 1: Do you agree that it is likely that the benefits to UK consumers and citizens will be greater from the MoD's release of spectrum in the 2.3 GHz and 3.4 GHz release bands than from retaining the current amateur use?:**

I favour the principles of good spectrum management, and in view of the increasing demand for use of the RF spectrum for public services, it's difficult to argue for the retention of the release bands as secondary amateur allocations.

**Question 2: Are there current uses in the release bands other than those detailed in RSGB's band plan and discussed in Section 3 of this consultation?:**

Not that I'm aware of.

**Question 3: Are there further consequences of removing the release bands from amateur licences that have not been considered in our analysis?:**

No.

**Question 4: There is an option (although not preferred) to remove access to the adjacent bands, as well as to the release bands. What are the consequences of removing access to the adjacent bands from amateur licences?:**

This part of the spectrum provides a good introduction to microwave techniques and technology for those radio amateurs wishing to extend their technical knowledge towards the higher microwave frequencies; removal of access would potentially reduce the National knowledge base and engineering skills base, at a time when there is a shortage of skilled engineers within UK industry. Complete removal of access would mean that individual amateurs who had invested time, effort and money in building up a station to operate on these bands would find themselves owners of equipment they were unable to use, at significant financial loss.

**Question 5: Are there current uses in the adjacent bands other than those detailed in the RSGB's band plan and discussed in Section 3?:**

Much of the experimental work by active radio amateurs in the 2.3 and 3.4 GHz bands is in the exploration of activities, such as reflections of signals from aircraft and other objects, which currently have no commercially useful benefit. However, experience tells us that what might not be of commercial interest at present may have uses in the future. National security requirements also benefit from the body of informed individuals, and the aggregate results of their endeavours, which come at no cost to the public purse. Advanced projects require international cooperation, and it would be a very severe constraint on this work if it proved impossible to use frequencies designated by International Amateur Radio Union band plans.

For example, within Europe, all 2.3GHz narrowband work is contained within the segment 2319 - 2322MHz, and it is highly desirable that these frequencies are retained.

**Question 6: Are there additional mitigation measures which would provide demonstrable proof that amateurs would not cause interference into LTE in the release bands following the release?:**

Mitigation should occur through proper band planning by the RSGB and special interest groups, such as UK Microwave Group and BATC, in conjunction with the Primary User. There are unlikely to be any insuperable technical problems. With regard to receiver performance of LTE base stations, it is imperative that band-stop filtering be implemented to reject large signals in the adjacent bands; the extra cost to the systems operators would be minimal if considered at the system design stage, and the technical requirements should be written to include this. It is also reasonable to expect amateurs to assist by adding filtering to the output circuitry of the amateur transmitter to minimise energy radiated a few MHz away from the center frequency, and a maximum adjacent channel power could be specified for amateur stations in these bands. Amateurs have the technical skills to implement such solutions.

**Question 7: Do you agree with the proposed process for varying licences following cases of reported interference and our proposal to vary licences should dealing with the number of reported cases become too onerous?:**

I understood that there was already a mechanism in place by which the licence schedule can be individually modified in order to solve specific interference problems, so don't understand why the standard licence needs to be modified. There has already been some discussion within radio amateur organisations such as the UK Microwave Group about the provision of first-line investigation of reported interference to Primary Users. The UKuG has a long history of making professional test equipment available at its meetings to analyse the performance of home-made and commercially available equipment - and, importantly, the expertise exists to carry out difficult performance measurements to known levels of accuracy.

**Question 8: Do you agree with our preferred option?:**

Yes, Ofcom's proposal is acceptable, even if not entirely desirable from an amateur radio standpoint. Continued amateur access to these frequency ranges will support ongoing self-education and experimentation, which has to be to the National good.

**Question 9: Are there additional changes to the Amateur Radio Licence which would assist amateur in lowering the risk of causing harmful interference to new uses?:**

I do not understand why any variation to the current Licence would reduce the risk of causing harmful interference. The Amateur Radio Licence already contains clauses requiring amateurs not to cause undue interference to other services.