Title:

Mr

Forename:

David

Surname:

Crowe

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:

As a licenced amateur for over 40 years and holding a full licence. With an interest in experimenting in electronics and radio from the age of 12 years, leading me to a carrier in telecommunications. As a professional engineer from the age of 17, covering all aspects from radio interference enforcement, radio planning, system design on all frequencies from 500Khz to 70Ghz and ending up as Head of Operation for one of the largest Telecommunications operators in the Far East (Joint venture with a leading UK Telecommunications Operator). I am a member of the Institute of Electronic Technology, Radio Society of Great Britain and UK Microwave Group.
As a radio amateur and experimenter, I have a particular interest in weak signal propagation properties particularly in frequencies above 1Ghz.

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?:

As a secondary user I can not find ground to object to the release of this spectrum on commercial ground. But if it is to be an economic benefit to the country some form of roll out of the spectrum to less populated areas of the country giving advanced services must be written into the licence with dates of completion. Failure to meet this and the licence should be revoked.

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?:

I am not aware of any that have not already been listed.

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?:

The proposed removal of these bands would create a problem for radio experimenters and amateurs to enter the microwave bands as equipment is relatively easy to develop. Also the propagation characteristics of the bands are different, allowing greater understanding and development of modulation methods. Complete removal of the frequencies would not allow experimenting and the spin off into the commercial industry eg passive radar techniques and week signal processing.
On a personal note the removal of these frequencies would have financially cost to me in excess of £2K, with the equipment not being able to be adapted to other frequencies.
On the 3.4Ghz band with the allocation of only 10Mhz it will be difficult to use modulation method's that require a large bandwidth eg Television and Television repeaters.
For the 2.3Ghz band this allows entry into weak signal methods especially EME and deep space communications.
On Television and the relative high expense (£700) of digital encoders, some form of transition from analogue to digital encoding should be considered or only the few will carry on with these techniques. Leading to a degradation in the development of equipment and methods.

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?:

As a professional engineer many amateur are also professionals in their carriers. It is important to note that the original purposes of amateur experimenting and licencing set up by the Government of the day was to develop self directed research and continuing education to support industry and the country. This is still important into today's economic climate to have a national group of people with these practical understanding and practical experience in

these techniques and phenomena.
As already stated the 3.4Ghz band has some interesting propagation properties to experiment with. To this end it gives an opening on how the higher bands work and makes the band of considerable interest for experimental activates and personal development.
It should also be noted for some propagation experiments International coordination is required. This can be seen in EME work were if the 2.319-2.322Ghz bands were removed this work could not continue. Therefore it is highly desirable that this part of the spectrum should be 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?:

As a member of Bolton Wireless Club, we promote the use of the microwave bands. We have a number of members that are active on 2.3 and 3.4Ghz allocations. To support them we hold regular Wednesday workshops to develop equipment and check the performance and characteristics. In addition to this members have the opportunity to attend the UK Microwave Roundtables to get their equipment checked and swop ideas. Also they can get support from the UK Microwave Groups regional technical liaison members to test their equipment. I believe that with this in place amateurs should have clean transmissions within the spectrum. On the spectrum good frequency planning will also mitigate interference issues that could be caused. I should be noted that it has also been stated that in parts of the country there will be interference to terrestrial digital TV will be caused and free filters will be issued. On the LTE equipment the receive side should have adequate frequency rejection to stop desensing from adjacent carriers. As industry adopts least cost engineering techniques, good front end design should be used or additional band pass filters should be added at the point of installation. This will reduce the cost to the operator in retrofit work at a latter date. Also as other Primary users will also be moved from the release bands into reduced frequency allocation, the possibility of adjacent channel interference could be increased as well.

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?:

The present licencing conditions would appear to have the correct methods to deal with stations that appear to be causing interference to others. As an ex radio interference enforcement officer, I have found that the present methods to deal with interferers to be more than adequate.
I would recommend that the RSGB co-ordinate with OFCOM to deal with interference issues, with the support of the UK Microwave group and supporting regional representatives. It should be noted that many of these people are professional engineers in their own right and are very experienced.
This can be seen from the experience of the Olympic Games were the Amateur Radio community fully co-operated with OFCOM in the spectrum sharing and management over the period. At a resent OFCOM presentation no case of an amateur station interfering with the Olympic Games could be sighted.

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

The preferred option outlined by OFCOM is a good compromise in the present commercial environment. But it will place restriction on some frequencies in the modulation methods that can be used and experimenting. This will reduce the self education and experimentation. As already pointed out this was the main aim for the Government of the Day to promote this for the good of the country and its people.

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?:

The restrictions and terms within the Amateur Licence are adequate to deal with undue interference to other services. It is difficult to see why changes need to be made to reduce the risk of causing harmful interference.