

**Representing:**

Self

**Organisation (if applicable):**

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

Keep name confidential

**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 am one of the developers of an open source / open hardware platform for Digital TV transmission using SDR techniques based on the use of FPGAs. As the device is designed for use by Radio Amateurs and covers the bands in question and being a practising Radio Amateur I have a vested interest in the continued access to these bands.

**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 am not qualified to answer this question but I would tend to agree.

**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 am aware of.

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

Not that I am aware of.

**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?:**

These frequencies are relatively easy to experiment on without having to spend a fortune on equipment.

The price of both components and SDR development boards for these bands has dropped dramatically.

The availability of test equipment, mainly from the testing of previous generation cellular systems has improved dramatically, without Radio Amateurs a lot of this equipment would end up in landfill.

Removal of these bands at a time when it has never been easier for private individuals to carry out worthwhile experimental work on them would be a serious blow to the self training of Radio Amateurs.

**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?:**

The RSGB's band plans only reflect what has historically happened in the hobby and are out of date before they are even published. So I would not consider them to be a good guide to what actually happens in the real world.

**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?:**

The systems demonstrated in the consultation document do not represent best engineering practice.

They also do not represent the state of the art as far as Amateur Digital TV is concerned. It should be

possible in the not too distant future to use higher order modulation schemes like DVB-S2 and more

efficient video codecs like H.264 and H.265. This will reduce the required bandwidth required for.

The use of pre-distortion techniques will mitigate the spectral regrowth seen in the transmitters

demonstrated as will better synthesisers and bandpass filters on the modulator outputs.

Simply by reducing the drive to the final power amplifiers a much cleaner signal can be produced.

To that end there should be a set of spectral masks created to provide guidance to Amateurs as to the

performance that will be expected of them when operating in these shared bands.

Amateur TV repeaters are an issue of course because they are well sited and operate 24/7. It might well

be necessary to remove repeater outputs on the bands in question and only use them for

inputs.

If there is a technical solution to a problem then the onus should be on the Amateur to use it even if

it incurs extra cost such as the use of electronic beam forming.

**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?:**

No, because there is no definition of onerous and what level of proof will be required to determine whether

interference is being caused by Amateurs or other users? It will be quite likely that Amateurs will be blamed

for everything with little or no proof. Amateurs are in fact the only users of that spectrum that have to hold any

form of qualification to use it.

We already suffer considerable interference from MOD systems and it is more than likely the new users moving

into the band will as well. The main difference is Amateurs have to live with it, I expect the new users will

not put up with it especially if they have had to pay for access to the bands,

If things get really bad then the band should be temporarily withdrawn and access allowed on a NoV

basis. The applications could be vetted by the RSGB first and have to provide some proof of competence that

they can operate on a non interference basis.

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

Not really but being practical I do accept it.

**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?:**

One of the biggest problems is that we as Amateurs do not always know who is operating on what frequency

especially if they are operating duplex. If there was some sort of up to date database especially for one off

'events' it would be much easier to avoid those frequencies. A good example of this was the Olympics.

Apart from providing emission masks and possibly reducing power levels I can't think of much else that can be

done.