

**Title:**

Mr

**Forename:**

J. P.

**Surname:**

Gilliver

**Representing:**

Self

**Organisation (if applicable):**

**Email:**

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

No

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

None

**Ofcom may publish a response summary:**

Yes

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

Yes

**Additional comments:**

Section 3.7, third bullet point: "Once a master WSD has selected a particular database it will report information to the database about its location and its technical characteristics" - add "and those of the slave WSDs it controls".

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If the purpose of the experiment is to bring the benefits of WS operation earlier than would otherwise be possible, but still to encourage development of fully-compliant equipment, consideration should be given to whether such licenses should be issued at all to prototype equipment which does not yet fully meet the full standard, or only to existing commercial products.

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See also the earlier parts of my answer to Q15.

**Question 1: Do you agree with our assessment of the likely costs and benefits of our proposal to license MCWSDs as a transitional arrangement? Please provide any available evidence to support your response.:**

Broadly, yes.

**Question 2: If you agree that Ofcom should allow MCWSDs to operate in the UHF TV band within the TVWS framework, how long do you believe that the licensing regime would need to be in place?:**

Your estimate of three years seems valid: given that the framework has been released for a short time, then 2017-12-31 would seem an appropriate endpoint (or 2018-6-30 if this initial process takes longer than anticipated).

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It would also seem appropriate to limit licences issued less than one renewal period before that date to have that as an end date, rather than to extend beyond it.

**Question 3: If you agree that Ofcom should allow MCWSDs to operate in the UHF TV band within the TVWS framework, when do you believe it would be appropriate to conduct a review to assess whether there is an ongoing need to license MCWSDs?:**

Somewhere between 2016-7-1 and 2016-12-31.

**Question 4: Do you agree with the proposed terms of the draft licence as set out in Annex 5 and as discussed below?:**

The restrictions on Ofcom's power to revoke in section 4 are far too onerous - and the mention of a five year period in 4f somewhat clashes with the proposed three year duration of the entire experiment!

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(Section 7: "there under" should be "thereunder".)

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Schedule 1, 5 b) v): no maximum has been specified for the location uncertainty.

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Schedule 2, 2: replace "airborne" with "in motion". [I see no reason for MCWSDs to be used while in motion: it was my understanding that all WSD operation will be between immobile devices. This is not to say they cannot be \_moved\_, just not while operating.]

**Question 5: Do you think it would be beneficial for the licensing regime for MCWSDs to cover both masters and slaves?:**

See under "additional products" above: I do not know whether existing commercial products include both categories.

**Question 6: Do you agree that our licensing regime should only apply to type A devices? :**

Yes. Furthermore, there may be mileage in requiring that a device, if moved, is not activated at the new location until confirmation (possibly automatic, e. g. email response) has been received from Ofcom of the notification of the new location.

**Question 7: Do you agree with our approach to allow a number of MCWSDs under the control of a single licensee to be subject to a single licence?:**

Yes and no. Yes to “a number”, as expressed in the question - i.e. each licence should cover up to a maximum number (to be determined); no to “any number”, which 5.17 presents as the only alternative. Any one operator could operate more than the maximum number, by paying for another licence: this would make Ofcom's licence income more linked to the number of devices and thus regulatory burden, without requiring one licence per device.

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Also, given that the expectation is that licence-exempt devices are expected soon, I see no reason not to set an upper limit to the total number of (licenced rather than licence-exempt) devices, contrary to the suggestion in 5.19 (of no upper limit).

**Question 8: Do you agree that the proposal for specific licence terms will mitigate the risks posed by the use of MCWSDs?:**

Looks a good start.

**Question 9: Do you consider the proposed licence terms are appropriate and proportionate?:**

Within the bounds of a time-limited trial (whose purpose is I imagine mainly to examine real-use matters such as propagation, interference, traffic flow, etc., rather than to develop compliant and thus licence-exempt devices), and with the caveats already expressed in other answers, yes.

**Question 10: Do you have any comments on our proposal to require applicants for licences to deploy MCWSDs to supply details of their QA process on application?:**

No (other than that it sounds a sensible requirement).

**Question 11: Do you agree with the proposed technical conditions of the draft licence?:**

In the specific matter of allowing the parameters to reach the database either directly from the device or from the operator of the device (e. g. via a webform), yes. (The positioning of question 11 implies that that is what it refers to, but the question itself could be more broadly interpreted.)

**Question 12: Do you have any comments on the proposed duration for this licence?:**

Assuming you mean “no end date” as in 5.4.1, then this seems contrary to the anticipated three years (or possibly less) for compliant (and thus licence-exempt) equipment to become available. Thus, there seems no point in having no end date: even more, the lack of an end date might disincentivise the development of compliant equipment, especially if the field becomes dominated by operators using MCWSDs.

**Question 13: Do you have any comments on our proposed licence fee of £1,500:**

I am assuming your calculations, based on experience, are correct. Given my response to Q7 (i.e. not one licence for an unlimited number of MCWSDs), it might have to be lower (though I appreciate this would not be pro-rata, as not all the administrative costs would drop accordingly). I would also anticipate that potential licencees would expect the fee to be lower for part-year licences (see my answer to Q2), in a similar way to TV licences for those over 74 (though not necessarily on a linear-to-zero slope given the different administrative costs: maybe linear-to-half).

**Question 14: Do you have any comments on our proposed five year minimum notice period for revocation for spectrum management reasons?:**

See my answers to Q11 and Q2. (Basically, if compliant - and thus licence-exempt - equipment is anticipated in three years if not sooner, then a revocation period of five years is inappropriate/ irrelevant.)

**Question 15: Do you believe there is likely to be an ongoing need for white space devices that allow some level of manual configuration? Please give reasons for your answer.:**

I have been assuming that virtually the entire reason for the (proposed) introduction of the MCWSD licence class has been the desire for development of WS usage, in areas such as traffic levels, monitoring, and other practical matters, which is at present hindered by the absence of any suitable licence-exempt equipment. I have been assuming that the purpose of the (proposed) introduction has not been to encourage the development of such licence-exempt devices, which development should be proceeding anyway, but only a pragmatic action to allow the use of WSD in the meantime.

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I can see that there is likely to be a need, in the longer term, for a licence for MC devices, to aid in (perhaps further) development of such devices; this would be much more in the nature of an experimental licence, not dissimilar to the notices of variation sometimes assigned to radio amateurs for certain experimental purposes. This would be a very different licence product to that which I presume is being considered here, which would mostly be for “fit and forget” type use of devices for use where licence-exempt devices will eventually be used, for the purposes of network development and similar matters.

**Question 16: Do you believe there is merit in exploring allowing enhanced operation through a licensing regime in the future and if so what additional capabilities should be allowed?:**

Yes, but with extreme caution.

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Something that should be considered in the development of the \_general\_ WSD database system should be future flexibility: it should be possible to in the future add extra parameters to the database system (such as directionality, and other parameters which cannot be anticipated until real-world WS use experience has been gathered), while retaining backwards compatibility with existing equipment (presumably assuming a default value for such additional parameters - none in the case of directionality, for example). Designing the database in this manner \_may\_ obviate the need for an “enhanced mode”, i.e. two levels of general licencing (one licence-exempt and one licenced), though the need for the “experimental” type of licence (see my answer to Q15) would remain. [\_If\_ there are found to be \_significantly\_ greater administrative (e. g. interference control) aspects to some parameters, then yes, there probably \_would\_ be scope for such a licence class, but the extra costs would have to be significant to justify the additional administration involved in adding a class.]