

Title:

Dr

Forename:

Yue

Surname:

Gao

Representing:

Organisation

Organisation (if applicable):

Queen Mary University of London

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:

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.:

Yes. With our involvement in the pilot of the TVWS framework, the measurement results for long distance (e.g. 7Km between King's College London Denmark Hill and Queen Mary University of London at Mile End) low data rate WSD link have shown promising potentials for future Machine-to-Machine (M2M) communications as an enabler for Internet of Things (IoT) applications. The low data rate M2M radio link only requires a fraction of the 8MHz TV band, which results in an extremely low probability of harmful interference to exiting users of the adjacent UHF TV bands. Thus, we believe that the transitional arrangement can

provide opportunities for research and development on MCWSDs and WSDs for M2M/IoT applications.

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?:

The estimated 3 years would be appreciate for MCWSDs to be further developed into fully automated ones. Meanwhile, different applications such as M2M/IoT could be further designed and tested over the TVWS framework.

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?:

A year review followed by another 2 years review might be suitable.

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

From academic research point of view, an non-operational license would be suitable.

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

Yes. As different applications would require different number of slave WSDs, the licensing regime covering both masters and slaves would encourage research and development of the WSDs for wider applications.

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

Before fully automated WSDs to be the licence-exempt, the licensing regime limiting to Type A devices would be a suitable approach.

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, the simpler license process would encourage faster research and development of WSDs.

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

Yes

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

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?:

Yes

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

Yes

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

We would like to have longer non-operational license for academic research purpose so that different experiments and measurements, such as spectrum sensing assisted Geo-location database, geo-location database assisted sensing approach, malicious user detection, etc, could be considered.

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

No

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

No

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.:

For academic research point of review, the MSWSD would be more suitable for research and development into the fully automated ones for different applications.

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?:

With our experience on the antenna design, we strongly believe that the enhanced operation would provide additional capabilities. However, this should be approved with experimental results before its operation.