

## Response to Consultation Question from Ulrich Schaetzle:

Question 4.1: Do you agree with our proposal to conduct a market led award through an auction process for licensed use of the 2.3 and 3.4 GHz bands? If not, please provide evidence to counter this proposal.

No

The conditions laid out in the consultation are inadequate to safe guard users of the 2400 and 2483.5 MHz band, these consist of very very large numbers of domestic and commercial uses who will be impacted.

Insufficient consideration has been given to the impact on the disabled and users of medical devices. Whilst welcoming the 10Mhz guard band, reduced power should be implemented in the top 3 channels plus implementation of the reduction in out of band emissions of 15-20 dB as identified in: ***Liaison Statement to ETSI TC ERM on Unwanted emission of mobile terminals in the SRD band 863-870 MHz dated 14 march 2014 and the Input contribution from the administrations of Germany, France, United Kingdom and Sweden to ETSI MSG, ETSI ERM and JWG DD of May 2014.***

Identification of the network software implementations which increase interference should be identified and restrictions placed in the licence conditions

Question 6.3: Do you agree with our assessment of the available options for mitigation of interference to home networks?

No

In the case of ALD equipment used for TV-hearing aid link the link budgets are much smaller, therefore LTE equipment “passing bye” or in adjacent premises are liable to cause interference

Question 6.6: Do you agree with our conclusion that the impact to Wi-Fi is not of a significant nature and therefore no regulatory intervention is necessary? If not, can you provide evidence?

No

In the case of the various forms of ALD this has not yet been tested and any interference into an ALD is “significant” and frightening

Question 7.1: Do you agree that we do not need to perform technical analysis on the applications in the middle of the band as set out in paragraph 7.7?

No, see answer to Question 6.6

Question 7.2: Do you agree with our technical analysis in relation to Bluetooth devices operating in the 2.4 GHz band, and that no additional restrictions are required in order to protect these applications?

No

See answer to Question 6.6

No consideration has been given to medical devices which are in many cases non or with restricted adaptive ability or ALD which often use custom chipsets .

Question 7.5: Do you agree with our technical analysis in relation to radio microphones devices operating in the 2.4 GHz band and that no additional restrictions are required in order to protect these applications?

No

These can also be part of an ALD system and have not yet been tested. Many other radio microphones (non 2.4 base frequencies) use a data link in the 2.4 band to provide battery information and control of receiver and transmitter.

Question 7.6: Do you agree with our technical analysis in relation to short range devices operating in the 2.4 GHz band and that no additional restrictions are required in order to protect these applications?

No

Devices working with ALD or medical systems have not yet been tested; test should replicate the real LTE equipment especially the out of band energy and use multiple handsets.

Question 7.9: Do you agree with our technical analysis in relation to hearing aids and assisted listening devices operating in the 2.4 GHz band and that no additional restrictions are required in order to protect these applications?

No

Further testing and restrictions detailed in question 4.1 are required to provide evidence before additional restrictions are rejected. This equipment often uses custom chipsets which vary from equipment to equipment. Testing should also include the case where R-Lan are in also in use. If as suggested by other testing the lower channels will be unusable the ability of a low power ALD to frequency hop will be compromised.

Hearing aids are vital to the users, and often needed to have the same possibilities in life as normal hearing persons. The section 7.88 states "... Most issues can be solved by careful positioning of these LTE devices or by switching off mobile phones in the classroom ...". We do not agree that this is a viable mitigation, as multiple devices can and will be active and these are not under control from the hearing aid user. Modern communication in classrooms will be needed during classes, and cannot be switched off or relocated.

Data communication in the 2.4GHz band cannot be compared with transmission of low latency audio.

The hearing aids, with a 2.4GHz transceiver, cannot use traditional means of mitigating disturbances such as filters and high dynamic range radios. The hearing aids are ultra small devices with very low battery capacity. Having to implement filters and larger batteries will lead to larger devices, which could lead to hearing impaired persons would choose not to wear their hearing aid in public, were it is most needed.

Question 13.8: Do you agree with our proposed maximum in band power limit for user terminals in the 2.3 GHz band?

No

These should be lower in the top three channels and the restrictions identified in Question 4.1 implemented in any licence conditions.