

European Hearing Instrument Manufacturers Assoc

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 10 MHz 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 on the licence conditions.

Question 4.2: Do you agree that we should not offer arrangements for aggregate bidding for low power use for these release bands? If you believe we should make such arrangements, please provide supporting evidence.:

Question 6.1: Do you have evidence to challenge our methodology and assumptions, which show the number of Wi-Fi routers likely to be affected by LTE interference is low?:

Question 6.2: Do you have evidence to challenge our methodology and assumptions, which show the number of Wi-Fi client devices affected by LTE interference is low?:

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 to hearing aid links the link budgets are much smaller, therefore LTE equipment "passing by" or in adjacent premises are liable to cause interference.

Question 6.4: Do you agree with our assessment of the available options for mitigation of interference to public networks (both indoor and outdoor)?:

Question 6.5: Do you agree with our assessment of the available options for mitigation of interference to Enterprise Networks?:

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 ALDs 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 have in many cases no or restricted adaptive ability, or ALDs which often use custom chipsets .

Question 7.3: Do you agree with our technical analysis in relation to ZigBee devices operating in the 2.4 GHz band and that no additional restrictions are required in order to protect these applications?:

Question 7.4: Do you agree with our technical analysis in relation to video sender devices operating in the 2.4 GHz band and that no additional restrictions are required in order to protect these applications?:

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

Question 7.8: Do you agree with our technical analysis in relation to emergency services use in the 2.4 GHz band and that no additional restrictions are required in order to protect these applications?:

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 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 8.1: Do you agree that the available mitigations address the potential shortfall of spectrum for PMSE at major events and that no additional regulatory intervention is necessary to protect PMSE in frequencies adjacent to the award bands?:

Question 8.2: Do you agree that PMSE should have some continuing access to spectrum in the 3.4 GHz band until new services are rolled out in an area?:

Question 8.3: Which option for the provision of information about the roll-out of new services is most the appropriate? Should the requirement to supply information apply only in designated locations?:

Question 8.4: Do you agree that any continuing access should be limited to five years from the award of new 2.3 and 3.4 GHz licences?:

Question 8.5: Do you agree with our assessment that there is little incremental benefit in on-going PMSE access to the 2.3 GHz award band?:

Question 10.1: Do you agree with our proposal that no coordination procedure is necessary in respect to maritime radar?:

Question 11.1: Do you agree with our proposal to require coordination procedures for the 3.4 GHz band - in order to protect of air traffic control radar - in line with those applied to the 2.6 GHz band?:

Question 12.1: Do you agree that for mobile satellite services operating in the band between 2170 and 2200 MHz, coexistence with LTE operating in the award bands above 2.35 GHz is unlikely to be an interference problem?:

Question 12.2: Do you agree that satellite services operating in the band 2483.5 MHz to 2500 MHz can co-exist with LTE operating in the award bands (i.e. 2350 to 2390 MHz and 3410 to 3590 MHz) and there is unlikely to be an interference problem?:

Question 12.3: Do you agree with that for satellite services operating between 2200 and 2290 MHz, coexistence with LTE operating in the release bands is unlikely to be an interference problem?:

Question 12.4: Do you agree that for amateur satellite services operating between 2400 and 2450 MHz, coexistence with unwanted/out of band emissions of LTE operating in the release bands (the nearest release band is 2350 to 2390 MHz) is unlikely to be a greater problem than the current in-band interference from licence exempt and ISM uses?:

Question 12.5: Do you agree with our preferred option to adopt our proposed mask with informal co-operation on a case-by-case basis if required?:

Question 13.1 Do you agree with our preference not to have a transitional region between blocks for licences in the 2.3 GHz band?:

Question 13.2: Do you agree with our preference not to have a transitional region between blocks for licences in the 3.4 GHz band?:

Question 13.3: Do you agree with our preference to not require synchronisation between different networks in the frequency band?:

Question 13.4: Do you agree with our preference to include both the permissive (unsynchronised) and restrictive (synchronised) masks within the TLCs in the 2.3 GHz band?:

Question 13.5: Do you agree with our preference to include both the permissive (unsynchronised) and restrictive (synchronised) masks within the TLCs in the 3.4 GHz band?:

Question 13.6: Do you agree with our preference to not require synchronisation between different networks in the frequency band?:

Question 13.7: Do you agree with our proposed maximum in band power limit for base stations in the 2.3 GHz band?: