

Three

Additional comments:

Three strongly agrees that Ofcom's first priority should be the safe operation of aeronautical radar and we look forward to working with Ofcom on the potential interference issues in the coming months.

We make the following observations in respect of this point:

1. The current information available leaves bidders with a high degree of uncertainty about the impact of the coordination obligations and the emission limits.
2. Depending on the more detailed proposals, limitation on power within 15km of a radar site could require costly site densification and we seek further information on this point at the earliest opportunity to enable us and other potential bidders to plan accurately.
3. In respect of the practical effects of coordination we presume that (rightly) where there is a perceived risk to aeronautical radar the opinion of the radar operator will take precedence over the needs to the mobile network operator. With this in mind - we seek reassurance that there will be an expectation (obligation) on the radar operators to enter such conversations openly and flexibly. If "coordination" means in reality a simple prohibition on the siting of 2.6GHz base stations within 10-15km of a radar site this is going to have a significant effect on the availability of 2.6GHz services nationally and thereby the value of the 2.6GHz spectrum lots.
4. We urge Ofcom to ensure that the plans for radar interference mitigation are made available to stakeholders at the earliest possible opportunity which include clear information on the timing of the regional upgrades to ATC radar sites to enable bidders to properly evaluate spectrum value and plan roll out of 2.6GHz services.

Question 1: Do you have any comment on the proposal to apply the limits defined in Case A of Commission Decision 2010/267/EU for out-of-block emissions from base stations into all frequencies in the range 470 to 790 MHz, as set out in Table 4.4?:

We have no comment on this point.

Question 2: Do you have any comment on the proposal to set an in-block emission limit of 61dBm/(5 MHz) for base stations in the 800 MHz band?:

We have no specific comment provided that emission limits are harmonised at the European level and manufacturers have been properly consulted on the parameters being proposed.

Question 3: Do you agree with the proposed conditions on antenna placement that would permit the use of the alternative block-edge mask for restricted unpaired blocks? If not, please explain your reasoning and your alternative

proposals, bearing in mind the need to remain consistent with the framework provided in Commission Decision 2008/477/EC.:

We agree that the proposed conditions should be consistent with agreed European standards, on the basis that manufacturers have been actively involved in the development of these parameters.

Question 4: Meeting the conditions on the use of the alternative block edge mask for restricted TDD blocks would require certain licensees to share information about the locations of their base stations. Do you agree with this proposed approach?:

We have no comment on this point.

Question 5: We welcome comments on stakeholders' preference for the dedicated or hybrid options for low-power shared access as discussed above.:

Our preference is that low power users are offered, in open auction, the opportunity to acquire a dedicated band of 2x10MHz of 2.6GHz.

The Real Wireless report commissioned by Ofcom clearly identifies the significant potential for interference and the resultant capacity reductions in the event Ofcom chooses the hybrid option. Whilst we note the proposed mitigation measures, experience teaches us that the deployment of such measures can be very challenging in practice.

We contend that the complexities of coordinating the hybrid option means that there would be little demand for such a block and strongly support a more simple approach to ensure valuable spectrum is not wasted unnecessarily.

For the reasons set out in detail in our answer to questions 5.3 and 5.7 of Three's response to the combined auction consultation we strongly believe that lots should not be reserved for low power use. Low power bidders should be free to bid in the open auction with high power users, to ensure that the spectrum is acquired by the party that values it the most.

In our submission we made a number of observations about the issues relating to low power use of the 2.6GHz band, most importantly the uncertainty over the benefits of sub-national services and the current and near term availability of other potentially more suitable (and cost effective) spectrum for such services.

Question 6: We welcome comments on the appropriate frequency placement for low-power spectrum blocks.:

We note the potential for serious interference with low power services from the adjacent TDD band and the need to place low power blocks in the middle of the upper 2.6GHz frequency range.

It is clear that such blocks are highly attractive to all users - and we once again question whether such valuable spectrum is best used for low power services given the other options available for this type of use and the high opportunity cost associated with reserving them for

such services.

Our contention remains that low power operators should be free to bid in open auction for such blocks against high power bidders to ensure that all the spectrum is utilised efficiently.

Question 7: Do you agree with our proposed technical licence conditions for low-power access?:

We have no comment on this point.

Question 8: We welcome comments from stakeholders on the additional restrictions and technical measures we have outlined for the management of interference under the hybrid approach, and the technical licence conditions that would be necessary to implement them.:

Refer to our answers to questions 5 and 6.

Question 9: Do you agree that a Code of Practice on Engineering Coordination, as outlined, is the appropriate approach to manage the coexistence between low-power licensees?:

We have no comment on this point.

Question 10: Do you agree that we should proceed with the approach that terminal stations complying with the relevant technical parameters be exempted from the requirement for individual licensing?:

We agree that this is the correct approach.

We assume that the technical parameters proposed are harmonised across Europe and have been subject to input and scrutiny from relevant manufacturers.