Title:

Ms

Forename:

Karen

Surname:

Wrege

Name and title under which you would like this response to appear:

Wrege Associates

Representing:

Self

Organisation (if applicable):

Email:

kwrege@gmail.com

What do you want Ofcom to keep confidential?:

Keep nothing confidential

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

Ofcom should only publish this response after the consultation has ended:

You may publish my response on receipt

Question 1: Do you agree with these proposals for the awards of the three bands or have any other comments on the contents of this document?:

Question 2: Do you agree with the analysis in section 5 or have any comments on adjacent interference issues?:

Question 3: Do you agree that Ofcom should authorise use of the spectrum bands 2500-2690 MHz, 2010-2025 MHz and 2290-2300 MHz?:

Question 4: Do you agree that awarding licences by auction would be the appropriate mechanism for authorising use of the spectrum bands 2500-2690 MHz, 2010-2025 MHz and 2290-2300 MHz?:

Question 5: Do you agree that it is likely to be in the interests of citizens and consumers to proceed with the award of the 2.6 GHz and 2010 MHz bands as soon as practicable, rather than to delay the award pending reduction in uncertainty relating to other bands?:

Question 6: Do you agree Ofcom should aim to award the bands 2500-2690 MHz, 2010-2025 MHz and 2290-2302 MHz by the end of 2007, while keeping the position on the 2.6 GHz and 2010 MHz bands under review in the light of possible developments in European regulatory fora?:

Question 7: Do you agree with Ofcom?s proposals for licence conditions (technology neutrality, tradability, conditions of tenure and absence of roll-out obligations)?:

Question 8: Do you have views on whether or not there should be a ?safeguard? cap on the amount of spectrum that any one bidder could win in an award for the 2.6 GHz bands and, if so, do you have a view on whether 90 MHz would be an appropriate size for a safeguard cap?:

Question 9: Do you agree with Ofcom?s proposal to package spectrum as lots of 2 x 5 MHz for paired use and 5 MHz lots for unpaired spectrum and to allow the aggregation of lots by bidders? :

Question 10: Do you agree with Ofcom?s proposed approach to allowing the respective amounts of paired to unpaired spectrum for the band 2500-2690 MHz to be varied (maintaining the 120 MHz duplex spacing and allowing additional unpaired spectrum, if needed, at the top end of the band)? :

Question 11: Do you agree with Ofcom?s proposals for a 5 MHz restricted block between FDD and TDD neighbours and between TDD and TDD neighbours and with a modified out-of-band base station mask for second adjacent 5 MHz blocks? :

Question 12: Do you agree with Ofcom?s proposals to award the 2010 MHz band as a single 15 MHz lot?:

Question 13: Do you agree with Ofcom?s proposals to award the 2290 MHz band as a single 10 MHz lot?:

Question 14: Do you agree with Ofcom?s proposals to combine the award of the 2.6 GHz and 2010 MHz bands and to hold the award of the 2290 MHz band separately and in advance?:

No. Based on my experience, if there are any potential complementarities and/or substitutability with the 2.6 GHz or 2010 MHz bands, it would be unwise to auction the bands in separate auctions.

Question 15: Do you agree with Ofcom?s proposals for a two-stage auction design for the 2.6 GHz and 2010 MHz bands?:

I share Ofcom?s view that there are many benefits of a combinatorial clock mechanism for auctioning spectrum, especially where the lots being offered are strong complements.

I also agree that the SMRA auction format works well with substitutable lots, but there can be difficulties associated with aggregation and exposure and introducing mitigating factors such as withdrawals introduce their own complexities and risks. While the SMRPB auction format can facilitate aggregation, it also introduces complexity for both bidders and the auctioneer.

With regard to simplicity, my experience has convinced me that combinatorial clock auctions are indeed simple when compared to SMRA and SMRPB auctions. Pricing is especially clear and straightforward and does not involve complex optimizations. Solving a combinatorial winner determination problem only in a best and final stage simplifies computation and speeds the auction. Also, bidding on quantities of lots rather than specific frequency channels recognizes the substitutability of the lots and the common price aspect can speed the auction considerably.

The strict activity rule will force bidders to focus on desired lots and speed the auction. Allowing bidders to submit ?best and final? offers during the clock auction will allow bidders to express their preferences more fully.

While auction transparency has benefits, it must also be weighed against encouraging or allowing for strategic behavior. Indeed in many of the FCC auctions, bid signaling, price manipulation, retaliatory bidding and eligibility parking have been used as strategic tactics by bidders. It is also well documented that strategic demand reduction has been used in SMRA auctions in the US and other countries using this auction design.

If at the end of the clock auction, demand has reduced to exactly match supply then the bids made in the final round of the clock stage would be the winning bids and the bidders that made them would be the winning bidder. If there are unsold lots, the best and final offers stage would begin. In this stage, the price to be paid by each individual winning bidder would be according to a ?second price? rule. While I agree with Ofcom that in an ascending clock auction the final prices are the final clock prices and in a sealed bid, the final prices should follow a ?second price? rule, I am concerned about the incongruence of these two pricing rules within the same auction. Bidders may have an incentive to strategically manipulate their bids to increase the likelihood of the best and final stage.

I would advise Ofcom to publish the specific algorithms for the ?best and final? and ?final assignment stages?. I would also recommend having a second, shadow solver to ensure that both optimizers result in identical allocations. The last thing that Ofcom needs is to be accused of solving the allocation problem for valuable spectrum licenses in a ?black box? that no one can replicate.

Question 16: Do you agree with Ofcom proposals to award the 2290 MHz band

through a second price sealed bid auction?:

No. It seems unlikely that there will be low demand for the 2290 MHz band that would warrant the use of a single round sealed bid for the award. In my experience, a multiple round auction is the preferred method for spectrum auctions in cases where there is sufficient demand because it allows bidders the benefit of price discovery information.

Question 17: Do you have a preference for either of the two approaches to specifying technical licence conditions? :

Question 18: Do you have any comments on the transmitter spectrum masks defined below? :

Question 19: Do you have any comments on the SUR parameters defined below? :

Question 20: Do you have any comments on the SUR methodology and assumptions detailed in this annex? :

Question 21: Do you have any comments on the use of the Visualyse tool as described, on the assumptions or the propagation model proposed in this annex? :

Question 22: Do you have any comments on the assumptions detailed in this annex?:

Comments: