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Award of available spectrum: 2500-2690 MHz, 2010-2025 MHz and 2290-2300 MHz

Response to the Ofcom Consultation

Samsung Electronics UK responses:

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?

Samsung Electronics agrees with the Ofcom plans to award licences in these three bands. Samsung Electronics appreciates the efforts made by Ofcom to release this spectrum and is pleased to see such a large quantity of spectrum being made available to the market place.

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

Samsung Electronics believes that Ofcom has carried out a thorough and balanced analysis of the impact to and from the service allocations both within and adjacent to, the bands subject to this award.

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

Samsung Electronics believes that there is most interest in the 2500-2690MHz band for new mobile wireless access services. This frequency range has strong potential for harmonised availability, not only in Europe but also globally. This is clearly an attraction and a major driver to the development of and investment in new services, and subsequent efficient exploitation of these spectrum resources. Although the remaining bands might be considered of less interest from the global perspective, they do offer substantial spectrum resources with the potential to be linked with the 2500-2690MHz range. Therefore Samsung Electronics agrees that Ofcom should authorise the use of all three bands.

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?

Samsung Electronics agrees that awarding the licences by auction is an appropriate mechanism.

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?

Samsung Electronics believes that this award should proceed as soon as practicable.

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?

Samsung Electronics fully supports Ofcom's objectives for holding the award process as soon as practicable before the end of 2007 and can see no reason for further delay.

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

Technology neutrality: Samsung Electronics generally supports the technology neutrality principle being applied to this award procedure.

Tradability: Samsung Electronics believes tradability may be desirable in terms of efficient spectrum re-deployment. However, Samsung has a concern that some award winners may abuse the right to trade by waiting for a future appropriate time to resell the spectrum for a large profit, rather than initiating services in the bands. Consequently, the service commercialization of these bands may be delayed.

Roll-Out obligation: Samsung Electronics strongly believes that a roll-out obligation is necessary (especially for the 2500-2690MHz band).

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?

Samsung Electronics believes the "safeguard" cap is a necessary precaution but has no alternative opinion on the "safeguard" cap size.

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?

Samsung Electronics agrees that there will be demand for both paired and unpaired lots and that the precise demand for each may be difficult to predict before the award. Samsung Electronics strongly agrees that aggregation of blocks is an essential element to obtain the right amount of spectrum to satisfy broadband delivery capacity.

Samsung Electronics strongly supports the Ofcom intention that the award procedure will result in contiguous blocks as far as practicable since this drives towards the most efficient use of the spectrum.

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)?

Samsung Electronics fully supports this approach considering the difficulty of predicting the demand for paired or unpaired spectrum ahead of the award procedure.

Samsung Electronics believes there will be a large and sufficient demand for TDD/unpaired technology to justify this approach.

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?

Samsung Electronics notes the basic conclusions from the studies that indicate a single guard channel requirement between any TDD operation and any adjacent TDD or FDD operation, and supports the Ofcom decision to maximise the spectrum utilisation through the use of restricted blocks at TDD to TDD/FDD UL interfaces rather than imposing unavailable guard channels. Samsung Electronics notes that the restricted block remains useable for low power implementations although there may be some challenges associated with low cost implementation.

Samsung Electronics understands that inter-operator coexistence matters are extremely complex and difficult to solve in a definitive manner without either unnecessarily constraining operations or compromising the efficiency of spectrum deployment. It is difficult to develop any single specific measure that is effective under all deployment scenarios and any studies on this have to make specific assumptions and cannot be absolutely exhaustive.

Samsung Electronics agrees that in many cases the most efficient approach that can also take account of the deployment specifics, involves adjacent operators coordinating their activities. Samsung Electronics is pleased to see this aspect reflected many times in the studies carried out on behalf of Ofcom.

In addition Samsung Electronics believes it should be clear that unpaired spectrum awarded within the 2500-2690MHz range, but ultimately paired with an external band (for example the 2010MHz band or another that is not part of this award), retains its "unpaired" status and associated constraints within the 2.6GHz band.

Samsung Electronics would like to point out that although the technical analysis work has assumed systems operating in 5MHz channels, there are developments that will bring systems occupying 10MHz channels to market.

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

Samsung Electronics agrees that this band should be awarded as a single lot.

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

Samsung Electronics has no opinion to express on this frequency range.

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?

Samsung Electronics agrees that the 2.6GHz and 2010MHz awards can be combined but would prefer to prioritise these bands above the 2290MHz band. Samsung Electronics would be concerned if any 2290MHz band award procedure difficulties delayed the award for the other two bands and particularly the 2.6GHz band.

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

As an equipment supplier Samsung Electronics has not analysed the auction process in fine detail, however Samsung Electronics believes that the auction proposal presented by Ofcom represents a reasonable procedure that will facilitate assignment of a sensible arrangement of frequency blocks.

Question 16: Do you agree with Ofcom proposals to award the 2290 MHz band through a second price sealed bid auction?

Samsung Electronics has no specific position on this matter.

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

Samsung Electronics prefers the emission mask approach.

Samsung Electronics appreciates the principles that Ofcom is introducing through the SUR approach but believes that considerable further work is required in order to understand the viability of this approach. At this time the detailed impact in the regulatory and compliance arenas are not understood by industry. Samsung Electronics would not wish the use of the SUR approach to specifying the technical licensing conditions to lead to delays in finalising the auction.

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

Samsung Electronics is content with the base station and mobile station proposals.

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

Samsung Electronics has expressed a preference for the emission mask approach in Q17 above and has no additional comments on the SUR parameters other than those detailed in the response to Q20 below.

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

Samsung Electronics has expressed a preference for the emission mask approach in Q17 above. Samsung Electronics believes that further work is required in order to understand the viability of this approach and believes this should include wider

consideration amongst the regulatory bodies around Europe to try and develop a consensus view which can be properly embodied into the European regulatory framework.

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?

Samsung Electronics has not developed any specific view on the use of this tool.

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

Samsung Electronics is not sure whether all the technology possibilities have adequately been considered. It is noted that the parameters chosen in Annex 13 for wireless access are focussed in UMTS W-CDMA characteristics that may need validation if used as representative of other technologies like those employing OFDM/OFDMA techniques.