

**Title:**

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

David Hall Systems Ltd

**Representing:**

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**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?:**

Agree with the proposals subject to the comments on the following questions

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

No comment with the analysis appearing comprehensive.

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

Yes

**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?:**

It appears to be the most appropriate procedures for the bands 2500 ? 2690 MHz and 2010 ? 2025 MHz. It is considered that a different procedure may be more appropriate for the band 2290 ? 2300 MHz but it is difficult to suggest an appropriate method. As the band 2290 ? 2300 MHz is likely to be used for PMSE would an option be to award this band to a spectrum manager who would make annual usage-related payments to Ofcom, the selection process could be based on the projection of the funds payable to Ofcom.

**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?:**

Yes as this will encourage the early availability of additional services and applications together with acting as a catalyst to resolving the outstanding regulatory issues.

**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?:**

This is linked to the previous question and we agree that the spectrum should be awarded within the proposed timescale. The take-up of the spectrum can then be used as a basis for Ofcom's position in dealings with European regulatory fora and should encourage the development of the European regulatory framework.

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

Generally we are in agreement with the license conditions. The reasons for the absence of roll-out obligations are recognized and supported. However it is felt that there should be some condition or incentive to ensure that the spectrum is used though it is difficult to suggest a suitable mechanism and also to define what is meant by 'used'.

**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?:**

This is a difficult question to respond to. There is a need to consider if the knowledge that there is likely to be a number of successful bidders rather than only one successful will have any impact on the value of bids placed during the auction. There is also the need to consider the implications of a bidder being able to obtain additional spectrum by trading after the auction and the implications of this may have on the auction outcome. On balance it is considered that a 'safeguard' cap could have little real impact on amount of spectrum controlled by a single entity. As such it is not appropriate to consider the size of the 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? :**

Yes agree that this is the most efficient means of packaging the spectrum. Where technologies require a wider bandwidth it is a simple process to combine lots to achieve the required bandwidth. However if larger units were used for the spectrum award then this could result in underutilization 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)? :**

We agree that maintaining some flexibility in the relationship between the paired and unpaired spectrum permits a range of a technology options to be implemented. It should also permit an efficient utilization of the spectrum, particularly with the retention of the 120 MHz duplex spacing.

**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? :**

The methodology used indicates that the restricted block and modified second block is required. However there is a need to consider if this is fully consistent with the principles of SUR and are there any alternative means of addressing the issue.

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

Taking all the factors into account it is considered that awarding this spectrum as a single block is the most efficient option. However awarding the spectrum in this manner may impose some constraints on the technologies that can be used within the band.

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

As it is considered that PMSE is the most feasible use then this band should be awarded as a single spectrum block.

**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?:**

It is possible that there could be little interest in the 2290 MHz band which may have an impact on the award of the other bands. It is considered that it may be appropriate to have the award for the 2290 MHz band after the award for the other frequency bands.

This is based on the view that this spectrum band is likely to have a different use, to the other bands, with a resulting lower spectrum value. Thus holding the auction for this band in advance could depress the value of the spectrum in the subsequent auction. However if a different process is used for the award of this 2290 MHz spectrum band then the timing aspects could become less important.

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

The proposals appear to increase the complexity of the process which together with the element of uncertainty might deter some bidders.

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

Subject to the comments given in the response to question 14 regarding the award of this spectrum if an auction process is to be used then a second price sealed bid auction appears appropriate.

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

The application of a Spectrum Mask is a known technique whereas Spectrum Usage Rights is an untried technique so is it appropriate to use SUR for these important spectrum awards. However it is considered that SUR may permit a greater range of possible technologies and cell sizes to be used in the frequency bands so therefore the use of SUR should be supported. It appears that it may be appropriate to develop more specific and binding IILs which could make the use of SUR more acceptable and successful

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

No comment

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

It seems that there have been some modifications to the formulae given in the SUR consultation document. It is difficult to determine the implications of these changes and to confirm some of the assumptions used.

**Question 20: Do you have any comments on the SUR methodology and assumptions**

**detailed in this annex? :**

The main concern with this annex relates to the lack of dependency that can be placed on IILs and we consider that a more reliable indicator should be developed together with having a relevant status.

**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? :**

It is considered that the Ofcom GRMT will produce similar results to Visualyse but if not can the differences be mapped and explained

For paragraph A12.20 it is felt that for the second bullet point the determination of the break point could include building clutter and other factors in addition to simple height.

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

The frequencies quoted in the tables are based on a specific channel plan and there is a need to consider the impact of using different channel plans. Also the number of users per cell is based on a specific technology so there might be a need to consider the impact of using other technologies with differing cell characteristics.

**Comments:**