#### **Organisation** (if applicable):

David Hall Systems Ltd

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

Question 1: Do you agree that meeting the future growth in demand for mobile broadband capacity will deliver significant benefits to citizens and consumers?:

We consider that meeting the future demand for mobile broadband capacity will deliver significant benefits. However based on our studies we consider that the Real Wireless medium growth trend is the more realistic growth projection and the strategy should be based on meeting this capacity rather than the Real Wireless high growth trend.

Question 2: Do you agree that additional harmonised mobile broadband spectrum will play an important role in meeting the future growth in demand for mobile broadband capacity? What are your views on the overall quantity of harmonised spectrum that will be required to meet future demand? How does this compare with the expected increase in spectrum for mobile use discussed in this section?:

We consider that additional harmonized dedicated spectrum allocations are only part of the solution. Below 1 GHz techniques such as cognitive radio and dynamic spectrum access may provide additional spectrum availability without the requirement for a specific allocation. There is also the complex timetable for migration to newer technology that makes more efficient use of technology and we consider that this migration could be quicker than predicted with a consequential impact on the amount of spectrum required. There is also the difficulty of determining what frequency range is required with some sources predicting that spectrum below 1 GHz is required whereas other sources predict that spectrum above 1 GHz will be required. Our interpretation is that spectrum will be required above 1 GHz though currently it is difficult to determine the approximate amount required.

Question 3: Do you agree that additional harmonised spectrum provided by the 700 MHz band could play an important role in meeting the future growth in mobile broadband capacity?:

The 700 MHz band could play a role in meeting future growth in required mobile broadband capacity. However from our analysis the benefits will be mainly in suburban areas.

Question 4: Do you agree that the value of the role played by the 700 MHz band in meeting the future growth in mobile broadband capacity would be greater if it becomes available before other capacity enhancing techniques have been exhausted at existing mobile sites?:

We agree that there are benefits in making this spectrum available at an early date.

### Question 5: What timing of 700MHz release would maximise the benefits associated with its use for mobile broadband?:

This spectrum should not be released too soon after the auction for the 800 MHz and 2.6 GHz spectrum but within this constraint it should be released as early as possible.

## Question 6: Do you agree that DTT will continue to play an important role in providing universal low cost access to PSB content over at least the next decade?:

We consider that DTT has an important role to play for the foreseeable future and will be particularly important for those who do not wish to commit to a subscription service. It is also significant that for the main TV set DTT and satellite are a more significant means of connectivity than cable giving the impression that spectrum based systems are the peoples' preferred means of access. It might be appropriate to investigate the reasons for this preference.

## Question 7: Do you agree that, absent major changes in available spectrum, DTT would continue to remain attractive to viewers and deliver important benefits to citizens and consumers over at least the next decade?:

Given the established broadcasting eco-system and the support for a subscription free service DTT will continue to deliver significant benefits to citizens and consumers.

Question 8: What are your views on the future technical evolution of the DTT platform? Are there other relevant factors affecting future DTT spectrum requirements that we should consider as we develop an approach to secure benefits from UHF band IV and V over the long term?:

We consider that an evolutionary approach is the most appropriate rather than moving to non-compatible technologies for the next generation DTT platform. There is also a need to better understand the demand for HD services which could have a significant impact on the DTT platform requirements.

Question 9: Do you agree that a longer term approach to secure benefits from UHF band IV and V should consider how to safeguard benefits delivered by the DTT platform?:

In view of the benefits to citizens and consumers arising from the DTT platform and the increasing demand for spectrum there is a need to ensure that the DTT benefits are safeguarded.

Question 10: Are there other material factors affecting the future requirements of PMSE that we should consider as we develop an approach to secure long term benefits from UHF band IV and V?:

No comment

Question 11: Are there other material factors affecting the future requirements of Local TV that we should consider as we develop an approach to secure long term benefits from UHF band IV and V?:

Based on various factors we consider that there will be little demand for local TV.

Question 12: Are there other material factors affecting the future requirements of WSD applications that we should consider as we develop an approach to secure long term benefits from UHF band IV and V?:

WSD applications are likely to become increasingly important in future and there is a need to ensure that no decisions are taken which may impede the development of WSDs.

Question 13: Aside from WSDs, are there other innovative ways in which to use UHF bands IV and V to deliver services and, therefore, material benefits to users:

No decisions should be taken which may impede research into, or the application of, other innovative uses of this spectrum.

Question 14: Are there other material factors affecting the future requirements of emergency services applications that we should be aware of as we develop an approach to secure long term benefits from UHF band IV and V?:

No comment

Question 15: Do you agree that the approach that is most likely to secure significant benefits from UHF band IV and V over the long term is one that enables the release of the 700 MHz band for mobile broadband whilst also ensuring the role of the DTT platform is safeguarded?:

We agree that this is the most appropriate approach.

Question 16: Do you believe there is a material risk that the DTT platform will have insufficient spectrum to continue to deliver important benefits

### (including providing universal low cost access to PSB content) if is the 600MHz band is not used for DTT after change of use of the 700 MHz band? :

There is a risk that there will be insufficient spectrum available. However the risk factor is based on a number of complex issues making it difficult to currently quantify the risk.

# Question 17: Do you believe that using the 600 MHz band for DTT after clearing the 700 MHz band would reduce the risk that DTT platform will not be able to continue to provide important citizen and consumer benefits?:

We consider that use of the 600 MHz band would reduce the risks though further modeling is required to determine the level of risk reduction. However at this stage such modeling might be difficult.

Question 18: Do you agree that the future benefits for citizens and consumers of enabling the release of the 700 MHz band whilst maintaining the role of DTT are likely to outweigh the loss in benefits of the 600 MHz band not being able to be used for other services in the long term?:

At this stage we consider that the benefits resulting from the release of the 700 MHz band are likely to be greater than the benefits lost by using the 600 MHz band in this way.

Question 19: Have we identified correctly the possible short-term uses of the 600 MHz spectrum? Are there other short-term uses we should consider?:

The list of possible uses appears comprehensive.

Question 20: Which option(s) for releasing 600 MHz in the short term would maximise its value whilst supporting our proposed longer term objectives?:

We consider that WSD applications would create the greatest benefits though PMSE usage will result in significant benefits and an innovation reserve would also create benefits. We do not consider that the other applications would create long term benefits.

Question 21: Do you agree that the wider impacts of a future clearance of the 700MHz band could be managed to prevent them having a detrimental impact on consumers and the services operating in this band?:

We believe that many aspects of the change of use of the 700 MHz can be managed though we have some concerns regarding the ITU part of the process and consider that this is a risk element.

Question 22: Do you agree that the approach set out in this consultation is likely to secure significant benefits for citizens and consumers over the long term?:

We agree that this appears to a valid approach for delivering significant benefits and it appears that the maximum possible benefits could be achievable.

### Question 23: Have we correctly identified the main areas of future work that could follow this consultation process subject to its outcome? :

The issues that have been identified are all important areas though we consider that should be an additional item of ensuring that the needs of citizens and consumers are met.

#### **Additional comments:**