



**Vodafone Response to Ofcom Consultation:**

**Preparations for the World Radiocommunication Conference 2015  
(WRC-15)**

## **SUMMARY**

Vodafone welcomes the opportunity to comment on Ofcom's consultation on the UK preparations for WRC-15. Access to appropriate radio spectrum is vital to providing the mobile communications services demanded by UK citizen consumers. To be beneficial, spectrum needs to be internationally harmonised, so the role of the ITU is key, and World Radiocommunication Conferences are pivotal to decision making.

As Ofcom will be aware, Vodafone has been active in influencing positions to be taken into WRC-15, and the policies adopted by the UK are important as Vodafone is headquartered in the UK.

In this response, we provide feedback on those questions of relevance to Vodafone. We also make observations on the process adopted by Ofcom in preparation for WRC-15.

## **ANSWERS TO QUESTIONS**

### **COMMENTS ON PROPOSED POSITIONS**

#### **General comments**

Many of the questions in this consultation ask whether Ofcom should support or oppose a particular position. In considering this, there are three issues to be addressed, which in some cases need to be answered separately:

- Should the UK support the development by CEPT of a European Common Proposal expressing this view?
- If a European Common Proposal is developed that expresses a different view, should the UK decline to sign it or oppose it?
- What action should the UK take at WRC-15 if it does not support a European Common Proposals, and a proposal is made to WRC-15 by another regional group or country that is in line with the UK internal view?

Vodafone's answers to the questions build upon this theme.

This consultation provides an opportunity for stakeholders to comment on a snapshot of these strategic aspects as of June 2014. However, as can be seen from the comments to some of the questions in this response, the situation has already moved on.

Vodafone has provided responses only to those questions impacting upon our business.

*Question 1: Do you have any comments on the mechanism for UK preparation for WRC-15 and the role of Ofcom in this process?*

Ofcom is an active participant in European and international preparations for WRC-15, and some of its staff have rightly been recognised by being given leadership positions in CEPT and ITU. However, somehow, the whole seems to be less than the sum of the parts.

Vodafone regrets the decision by Ofcom to close the membership of IFPG to only Government and public bodies. As a result, there is no forum for stakeholders to discuss the strategic aspects of preparation for WRCs<sup>1</sup> and prioritisation. IFPG Working Group D (which addresses the agenda items most relevant to Vodafone) is effective in preparing for individual meetings, but it lacks strategic guidance and coordination.

The current policy for participation in the UK delegation for international meetings disadvantages UK stakeholders, compared with those in many other countries. A stakeholder needs to be a member of the UK delegation for a meeting in order to comment on (or, indeed, see) the UK brief for a meeting or propose a UK contribution. The stakeholder cannot then make its own contributions to the meeting, even on issues on which Ofcom does not have an interest.

Ofcom seems to be reluctant for stakeholders to play active roles in the WRC preparation process (and, indeed, international meetings in general). One reason appears to be that the UK head of delegation at meetings does not have an effective means of discipline or sanction. Ofcom might therefore consider developing an Undertaking, which individuals would be expected to sign before being accepted onto a UK delegation.

*Question 3: Do you agree with Ofcom's general approach on WRC-15 agenda item 1.1?*

Ofcom's general approach on WRC-15 agenda item 1.1 should be based on its Statements on the Spectrum Management Strategy<sup>2</sup> and Mobile Data Strategy<sup>3</sup>. Both of these documents envisage a substantial growth in demand by citizens and consumers for mobile data, which can be partly met by developments in technology and network architecture. Additional spectrum is also likely to be part of the solution, but the amount needed will depend on the trends of these factors.

This is captured very well in paragraphs 2.10 – 2.12 of the Mobile Data Strategy:

*"The existing opportunities for expanding capacity may mean that only modest additional changes in spectrum use become necessary over the coming 10-15 years. However, given the high degree of uncertainty in long term demand forecasts, and the potential for disruptive innovations to create a step change in demand, it is also possible that more extensive changes could be needed."*

<sup>1</sup> ISSB is not a substitute, because it is an after-the-event briefing meeting.

<sup>2</sup> "Spectrum management strategy - Ofcom's strategic direction and priorities for managing spectrum over the next 10 years" <http://stakeholders.ofcom.org.uk/consultations/spectrum-management-strategy/statement/>

<sup>3</sup> "Mobile Data Strategy" <http://stakeholders.ofcom.org.uk/binaries/consultations/mobile-data-strategy/statement/statement.pdf>

*If it were possible to respond very quickly to changing spectrum demands, then it might be possible to consider these issues nearer the time. However major changes in spectrum use can take many years to bring about for a number of reasons.*

*Therefore, given the potential importance of the mobile data challenge and the long lead times associated with major changes in spectrum use, the aim of our mobile data strategy is to prepare for future increases in the use of mobile data services while taking account of other users of spectrum.”*

Ofcom's approach on WRC-15 agenda item 1.1 therefore needs the flexibility to prepare for this potential step change in demand, while also not impacting other users of spectrum unless necessary. This consultation asks a number of binary questions on whether stakeholders support (or not) a particular frequency band, and therefore does not address this need for flexibility. This is not Ofcom's fault, because the questions in the consultation reflect the thinking in the CEPT preparations for WRC-15.

This thinking needs to be changed if Ofcom is to meet its objectives. On the present course, WRC-15 is likely to result in only around 40MHz of extra spectrum for mobile broadband in Europe, which would only be sufficient for the lowest estimates of future traffic growth. This change of thinking needs to happen at a strategic level; we would therefore propose that Ofcom should:

- 1) Raise this issue in RSPG, for its work on Preparation of Common Policy Objectives for WRC-15.
- 2) Develop a tentative roadmap for possible future spectrum releases and the technology to utilise them, for a range of future demand for mobile broadband spectrum.

*Question 4: In view of the recent developments on the 1 492 - 1 518 MHz and 5 925 - 6 425 MHz bands, what are your views on the potential identification of these bands for IMT and/or RLAN and on the mobile data applications that could make use of them? How do you believe the sharing with the fixed service and the fixed satellite services could be managed at the national level?*

### **Comments on the whole of the 1 427 - 1 518 MHz band**

Vodafone believes the UK should support the identification of the 1 427 - 1 518 MHz band by WRC-15 (this band already has a co-primary mobile allocation). This would provide 80MHz of mobile spectrum suitable for supplementary downlink, with guardbands of 5MHz below and 6MHz above<sup>4</sup>.

### **Comments on 1 492 - 1 518 MHz**

Vodafone noted in its response to the Mobile Data Strategy consultation that this band is used far less in other European countries than in the UK, which makes it a good candidate for European harmonisation. We suggested that Ofcom should investigate the possibility of consolidating the existing use in the upper 2x6MHz, which would not be used for mobile broadband – and we would be interested to hear how these investigations have progressed.

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<sup>4</sup> See Vodafone's response to Q11 of the Mobile Data Strategy for discussion of the potential of this band for IMT.

The deployment of IMT downlink in the this band, with a 6MHz guard band below 1518MHz, would not increase the impact of interference to MSS compared to the current usage by fixed links<sup>5</sup>. Therefore, coexistence between IMT and MSS need not be a consideration in Ofcom's decision on the potential identification of this band for IMT.

### **Comments on 5 925 - 6 425 MHz**

The technical studies for coexistence with FSS earth-to-space in the final Chairman's report of JTG 4-5-6-7 (Studies 3 and 4 in Annex 19 of JTG 4-5-6-7/715-E) conclude that the base station power would need to be limited to only 10dBm EIRP - 15dBm EIRP with base station deployment is limited to indoors. An identification for IMT with this power limit would be of very little value.

This situation would be worse than useless, because this spectrum would still be counted in any estimation of future spectrum requirements. We therefore believe that Ofcom should not support the identification of this band for IMT, unless there is a European Common Proposal with significantly higher power limits, supported by robust technical studies.

This band already has a mobile allocation, so no action is needed by WRC-15 for it to be used for RLANs.

*Question 5: For the band 1 427 – 1 452 MHz, do you agree that it is right to support the further consideration of the band, recognising the Ministry of Defence interest?*

Vodafone agrees that this band should be considered further, with a view to the UK being able to support its identification for IMT by WRC-15.

We note from the Mobile Data Strategy consultation that the MOD uses this band far less than the 1375-1400MHz band with which it is paired for fixed links, and it has already advertised shared access to it.

*Question 6: For the band 1 452 – 1 492 MHz, which is already subject to a harmonisation measure within CEPT, do you agree that this band be supported for an IMT identification at WRC-15?*

Yes.

This band already has a global mobile allocation and is licensed in UK on a basis that allows mobile use. Therefore, there is a firm justification for UK to support an IMT identification at WRC-15.

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<sup>5</sup> The technical analysis supporting this conclusion is contained in a contribution by Vodafone to IFPG Working Group D; IFPG WGD (14) 059 'Coexistence between IMT and MSS at 1518 MHz'

*Question 7: Recognising the UK plans to release spectrum in the 3 400 – 3 600 MHz band, coupled with the binding European Commission Decision (for electronic communications services) in the bands 3 400 – 3 600 MHz and 3 600 – 3800 MHz, do you agree that these bands should be supported for both a co-primary mobile allocation and IMT identification?*

Yes.

A co-primary mobile allocation in the Table of Allocations and an IMT identification would provide recognition in the Radio regulations for the current situation in UK and EU, which would promote global harmonisation. At present, the allocations are made through a complex set of national footnotes, which exclude some countries in which Vodafone has an interest.

*Question 8: Noting that there are a number of countries that strongly oppose the inclusions of the 3 800 – 4 200 MHz band, do you agree that we should support the longer term consideration of this band for potential mobile broadband use?*

Vodafone agrees that Ofcom should support the longer term consideration of this band for potential mobile broadband use. It should therefore ensure that this band falls within the scope of a proposed agenda item for WRC-19.

Vodafone is a provider of VSAT services in C-Band, and therefore recognises the need for continuing FSS operations in this band. We expect that mobile operators would use this band for small cells, in conjunction with wide-area coverage in lower frequency bands; this usage would substantially improve co-existence with FSS earth stations. We therefore suggest that Ofcom considers ways to provide guidance to Administrations on the recommended usage of this band for mobile services without needing formal regulatory measures in the Radio Regulations.

*Question 9: Noting that there is currently limited international support for a co-primary mobile allocation in the band 2 700 – 2 900 MHz, do you think that we should continue to support this band at WRC-15?*

Vodafone recognises that there has been, so far, limited international support for this band in CEPT or from the other countries most active in preparations for WRC-15. However, these are generally the countries that use this spectrum most heavily for radar. Given the outcome of the CPG PTG meeting in September 2014, there is very little possibility of a European Common Proposal for a mobile allocation in this band at WRC-15.

However, in many countries, there is little or no use of this band for radar. It is therefore likely that there will be proposals to WRC-15 for this band – perhaps by countries that have difficulties in making the 3.4 - 3.8 GHz band available for mobile. The UK therefore needs to be ready to support proposals that might be made to WRC-15 for this frequency band.

*Question 10: Do you agree that the 5 350 – 5 470 MHz and 5 725 – 5 925 MHz bands could provide important additional capacity for Wi-Fi and similar systems? If so, and noting the need to protect both earth observation satellites and radar systems, do you agree that sharing solutions should be considered at WRC-15?*

This question has been partly overtaken by events. At the final meeting of JTG 4-5-6-7, there was agreement that no decision could be taken by WRC-15 on these bands<sup>6</sup>; it was accepted that further studies would be needed to prepare for a decision by WRC-18/19. The UK needs to ensure that this topic is included on the agenda for WRC-18/19, and should support these studies.

*Question 11: Do you agree that we should oppose a co-primary mobile allocation at WRC-15 for the band 470 – 694 MHz?*

Vodafone believes that the UK should support a secondary mobile allocation at WRC-15 for the band 470 – 694 MHz, and we agree with the statement on this basis.

We recognise the expectation of Ofcom “that Digital Terrestrial Television (DTT) will remain important for many years in the UK” (para 4.7). However, the timing for action by a WRC is related to the date at which demand for spectrum for DTT has reduced sufficiently to make a licence award for mobile spectrum below 694MHz feasible, **not** the date at which DTT is switched off completely.

In its Statement on the Mobile Data Strategy, Ofcom describes the 470 – 694 MHz band as ‘medium priority’. Figures 11-14 of the Mobile Data Strategy consultation document show the ‘medium priority’ bands starting to be used in around 2025 and being fully used by 2030; five years seems a reasonable period to bring a new band fully into use.

The more recent ‘Consultation on future use of the 700 MHz band’<sup>7</sup> (published on 28 May 2014) confirms the view that the role of DTT will start to tail off around 2025 (i.e. more than a decade into the future), with a final switch-off possible around 2030:

*“we believe DTT is likely to retain a central role over the next decade, with a full switch to alternative technologies such as IPTV not appearing feasible until at least 2030.”*

The WRC-15 consultation document states:

*“our UHF Strategy Statement ... forms the basis of our position for international engagement”.*

The Mobile Data Strategy did not consider the impact of AIP on demand for spectrum for DTT. The planned introduction of AIP for DTT in 2020 is almost certain to reduce the demand for spectrum for DTT and bring forward the date at which spectrum can be released for mobile use; as we point out in our response to Ofcom’s consultation on its 700MHz cost benefit analysis<sup>8</sup>:

*“Ofcom has signalled that from 2020 DTT will be subject to AIP, and that the likely fee absent 700MHz clearance will be of the order of £40M/yr/multiplex. Faced with an*

<sup>6</sup> There was agreement that only “method A” – i.e. no change to the Radio Regulations – should be applied to these bands.

<sup>7</sup> Consultation on future use of the 700 MHz band - Cost-benefit analysis of changing its use to mobile services <http://stakeholders.ofcom.org.uk/binaries/consultations/700MHz/summary/main.pdf>

<sup>8</sup> “Vodafone Response to Ofcom Consultation: Consultation on future use of the 700 MHz band -Cost-benefit analysis of changing its use to mobile services”  
<http://stakeholders.ofcom.org.uk/binaries/consultations/700MHz/responses/Vodafone.pdf>

*additional cost of almost £300M/yr, it is inconceivable that the television industry would not take a long hard look as to whether current usage could be justified, indeed if that process did not occur, it would be evidence that AIP as a concept was failing.”*

Even if Ofcom concludes that 700MHz should indeed be utilised for mobile broadband, the likely fee will be £10M/yr/multiplex – a significant sum of money.

The ITU World Radiocommunication Conferences (WRCs) following WRC-15 will probably take place in 2019 and 2022/23. These are only six years and two years respectively before it is envisaged that the medium priority bands would first be used. It takes a number of years following a decision by a WRC before the spectrum can be released and brought into use for mobile broadband. A WRC in 2022/23 is too late for this to happen much before 2030.<sup>9</sup>

Vodafone therefore believes that action needs to be taken at WRC-15, to prepare for the timeline envisaged by Ofcom for possible release of spectrum in the 470 – 694 MHz frequency range for mobile use. We recognise that there is unlikely to be much support for a primary mobile allocation for Region 1 at WRC-15; we therefore suggest that Ofcom needs to support at least a secondary mobile allocation at WRC-15. If this allocation cannot be achieved at WRC-15, this frequency range needs to be included on the agenda for WRC-19 – see our response to question 42.

#### The Date of Switch-off of DTT

The WRC-15 consultation document incorrectly bases its analysis on the date of switch-off for DTT (final bullet of para. 4.7). We therefore comment on the conclusions, although they are not relevant for the decisions to be made for WRC-15.

The consultation document highlights the barriers associated with alternate broadcast delivery platform as an important factor in this date, and refers to its discussion document ‘The Future of Free to View’ for a more detailed explanation<sup>10</sup>. In this document Ofcom said:

*“In addition, we consider that the on-going importance of DTT and barriers associated to IPTV availability and take-up could make a DTT switch-off unlikely until at least 2030.”*

Vodafone can accept this statement from Ofcom, given its current view on the benefit of the DTT platform and its thinking on the development of IPTV. However, the WRC-15 consultation uses a different wording, without any explanation for the difference:

*“In addition, we consider that barriers associated with alternate broadcast delivery platforms such as satellite and Internet Protocol Television (IPTV) make a DTT switch-off scenario **credible only after 2030**”*  
(Vodafone emphasis)

Such an unequivocal stance is not a sensible position for Ofcom to take:

- a major factor in the timing is under Ofcom’s control – its view on the ‘protection’ of the DTT platform.
- IPTV is still at an early stage, and there is inherently uncertainty in the extent to which the barriers will still remain more than a decade in the future.

Vodafone therefore urges Ofcom to be consistent in its language on this topic.

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<sup>9</sup> See the Vodafone responses to questions 11 and 12 of the Mobile Data Strategy consultation, <http://stakeholders.ofcom.org.uk/binaries/consultations/mobile-data-strategy/responses/Vodafone.pdf>.

<sup>10</sup> See the Impact Assessment section of this response for a discussion of the status of this discussion document.



*Question 12: Do you agree that the UK should continue to support harmonisation of 694 - 790 MHz for mobile broadband and an out-of-band emission limit for protection of DTT reception in an ITU-R Recommendation, alongside an acknowledgement that 694 MHz should be the lower frequency boundary for the band?*

Vodafone welcomes the proactive role of Ofcom within CEPT in development a preferred bandplan and an appropriate out-of-band emission (OOBE) limit for protection of DTT reception, which will be included in an ECC Decision.

The OOBE limit has already been incorporated into the 3GPP specification for LTE terminals (TS 36.101), and by the time that the 700MHz band becomes available in the UK, all terminals on sale or in use will meet this limit. This limit will be incorporated into Harmonised standard EN 301 908 and into ITU-R Recommendation M.1579 when they revised. Therefore, there is no need from a UK or EU perspective for a dedicated ITU-R Recommendation on this OOBE limit.

The last meeting of the ITU-R group JTG 4-5-6-7 was not able to reach consensus on the wording of a dedicated Recommendation on this issue. we do not believe that it would be productive for Ofcom to continue to play an active role in the development of this Recommendation but, if a consensus emerges, it should support the approval.

*Question 13: Do you agree that any harmonisation measures for PPDR use should be sufficiently flexible to enable PPDR agencies to choose the most appropriate spectrum solutions nationally?*

Yes.

*Question 35: Do you have any view on the need, or otherwise, for additional international regulatory measures to support the use of earth stations for aeronautical and meteorological communications in the 3.4 – 4.2 GHz band?*

Vodafone agrees with Ofcom that this is a national matter that does not require any measures in the Radio Regulations. These satellite services are only used in a small number of locations in a country, which are readily identifiable. It is therefore not clear why special regulatory measures are needed to remind Administrations to apply the existing coordination procedures to these locations.

If regulatory measures are to be developed, then a Recommendation would be more appropriate than a Resolution. It should highlight that these aeronautical and meteorological communications use only small portions of the 3.4 – 4.2 GHz band, and any spectrum management measures only need to be applied to these frequencies.

*Question 36: Do you agree that the UK should not support any change to the fixed and mobile definitions under Agenda Item 9.1.6?*

Yes.

We recognise that the range of applications operating under the fixed and mobile services has evolved substantially. However, it does not follow that the existing broad definitions of these services are no longer fit for purpose.

If the definitions of these services were revised, then any allocation or compatibility study based on the previous definition might be called into question. This risk would massively outweigh any potential benefit from any change to the definitions. This is a clear case of “*If it ain't broke, don't fix it*”.

*Question 41: Do you have any comments concerning the standing agenda items?*

WRC-15 agenda item 4 is:

“in accordance with Resolution 95 (Rev. WRC-07), to review the resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation”.

The Radio Regulations include several Recommendations addressing identification of frequency bands for IMT, resulting from WARC 92, WRC-2000, WRC-07 and WRC-12. It has been suggested that these could be merged, because their intent and wording are somewhat similar. However, the differences in wording are, in many cases, the result of deliberate decisions in the WRCs where they were developed. Trying to modify or combine these Recommendations at WRC-15 could re-open these decisions. Resolution 232 (WRC-12) clearly needs to be updated, but modifications to the other Resolutions should be kept to the bare minimum. This is another case of “*If it ain't broke, don't fix it*”.

*Question 42: Do you have any comments regarding UK positions for future WRC agenda items?*

As discussed in responses to other questions, there are at least five frequency ranges for which the implementation of current Ofcom positions and views on mobile and IMT may require action at a future conference:

- 470 – 694 MHz
- 2.7 – 2.9 GHz
- 3.8 – 4.2 GHz
- 5 350 – 5 470 MHz and 5 725 – 5 925 MHz
- mm-wave bands, or ‘bands above 6GHz’

It is unlikely that a WRC would agree to include five agenda items for IMT and mobile on the agenda of the next Conference, so the scope of any proposed agenda item needs to be broad enough to cover more than one band. For this reason, we suggest that the working title for the initial proposal made by UK is changed from ‘above 6GHz’ to ‘in higher frequency bands’.<sup>11</sup>

Following the experience of JTG 4-5-6-7, it will be important to provide as much focus as possible in the agenda item on candidate bands for consideration.

The ITU-R Group Working Party 5D (WP5D) intends to call for proposals from standardisation bodies for technologies for “IMT beyond 2020” that would be deployed in bands above 6GHz. It is important that this process does not pre-empt the decisions of WRC-19, in terms of the frequency ranges or bandwidths; Ofcom therefore needs to ensure that this is reflected in the timeline for this process that is currently being developed in WP5D.

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<sup>11</sup> For more explanation, see the Vodafone contribution to IFPG WGD; IFPG WGD (14) 062, The title of the proposed agenda item for WRC-19

*Question 43: Are there any other possible agenda items you wish to see addressed by future WRCs?*

No.

*Question 44: Are there particular frequency bands, above 6 GHz, that should be considered for technical study in relation to the potential future agenda item addressing IMT use?*

Between 20GHz and 55GHz, a more than 20GHz of bandwidth is already allocated to mobile. 83% of this has a co-primary allocation to the fixed service; a substantial part of this is used for mobile backhaul, and the growth in mobile broadband will increase the demand for spectrum for backhaul. 43% of the mobile spectrum has a co-primary allocation to the Fixed Satellite Service and 15% has a co-primary allocation to passive services.

It will be desirable to identify spectrum for IMT that does not have any of these co-primary allocations. The one sizeable band that fulfils this criterion is 43.5 – 47GHz. According to the UK FAT, this band is divided between civil and military use, but it is unclear if either part is widely used.

Vodafone therefore suggests that Ofcom considers the potential of this band for IMT.

## **COMMENTS ON PRIORITISATION**

*Question 2: Do you agree with the prioritisation of the agenda items, as shown in Annex 6, and if not why?*

Vodafone generally supports the prioritisation of agenda items in Annex 6, with the following qualifications:

1.3 The objective described in question 14 hardly merits a high priority, though avoiding other possible outcomes might do.

1.14 Given the strong position previously taken by UK on this issue, this agenda item probably has to be high priority. However, it should also be a high priority to bring this issue to a close, as discussed below.

2, 4, 9.1.6 Depending on contributions from other Administrations, these agenda items may need to be elevated to high priority, and resources need to be available for this eventuality.

We also note that the UK holds the position of CEPT coordinator for agenda items 1.2, 1.3, 1.14, 1.15, 7, 9.1.7 and 10. These agenda items will therefore inevitably be a high priority in terms of allocation of resources by Ofcom, even though some of them are a medium priority for UK in terms of outcome.

One important activity of WRCs falls outside the agenda – the Editorial Committee, whose role is to ensure the alignment of the texts in the six working languages of the ITU. The UK is, by tradition, a member of this committee as representative of the English language. Vodafone encourages Ofcom to continue in to participate in this important ‘backroom’ activity. However, the role of the English language representative is different to the other five languages, because the WRC documentation is originally written in English.

Occasionally, the Editorial Committee needs to modify the English wording, because it cannot be translated into another language. The role of the English language representative is to ensure that the meaning is not changed as a result. Therefore, the role is primarily technical, and the linguistic skills needed are in English, not a foreign language.

*Question 29: Do you agree that the UK should support maintaining UTC as currently defined (i.e. with the inclusion of leap seconds) and that the UK should support further study around the concept of dissemination of two reference time scales?*

Given the past strong position of UK on this issue, it is *fait accompli* that UK has to continue to support maintaining UTC at WRC-15. However, this should not be to the detriment of UK positions on issues of real importance to UK citizens or industry, and the issue should be brought to closure at WRC015, one way or the other.

## **NO COMMENT**

Vodafone does not wish to offer comments on the following questions:

*Question 14: Do you have any comments on the potential use by the amateur service in the 5 250 to 5 450 kHz band?*

*Question 15: Do you agree that if any allocations to the fixed satellite service in the 10-17 GHz range impose undue constraints on existing services then further studies on the demand and justification for use of the spectrum would need to be carried out?*

*Question 16: Do you agree that the UK should support retaining the recognition for aeronautical radionavigation use, but equally support reviewing the limits associated with the FSS with a view to facilitating better use by the FSS?*

*Question 17: Do you agree that the UK should support new primary allocations for the fixed-satellite service in the 7/8 GHz bands, with the proposed restrictions?*

*Question 18: Do you agree that the UK should not support new allocations for the mobile satellite service in 22-26 GHz as they are not justified and that the focus should instead be upon the continued protection of the incumbent services?*

*Question 19: What are your views on the use of FSS spectrum allocations for UAS, recognising the shared regulatory responsibility and the safety considerations for the control of unmanned aircraft?*

*Question 20: Do you have any view on the need, or otherwise, to modify the restrictions that relate to the operation of ESVs in the bands 5 925 – 6 425 MHz and 14-14.5 GHz?*

*Question 21: What are your views on a potential new allocation to the maritime mobile satellite service, recognising the UK interest in the other services that make use of the bands under consideration?*

*Question 22: Do you agree that the UK should not support a proposal for additional UHF spectrum for maritime on-board communications and that narrower channels will help to increase capacity?*

*Question 23: What are your views on any necessary regulatory provisions for AIS in the bands already identified for maritime use?*

*Question 24: Where the appropriate radio regulatory provisions are established for use in existing aviation related bands, do you agree that the UK should support regulatory conditions for the accommodation of WAIC applications?*

*Question 25: Do you agree that the UK should support a generic radiolocation allocation in the 77.5-78 GHz band, where appropriate technical conditions are established?*

*Question 26: Do you agree that the UK should support an allocation across the 7 190 – 7 250 MHz band, dependent upon the outcome of technical studies?*

*Question 27: Do you agree that it is right to wait for the relevant sharing studies to mature before coming to a final position on the potential for additional allocations to the earth exploration-satellite (active) service in the 8/9/10 GHz band?*

*Question 28: Do you agree that the UK should support the CEPT position that removes the distance limitation on space vehicles communicating with orbiting manned space vehicles, whilst retaining the pfd limit to protect terrestrial services?*

*Question 30: Do you have any comments on the UK approach and positions on the elements of Agenda Item 7?*

*Question 31: Do you agree that any potential regulatory constraints need to be fair and proportionate on both the Cospas-Sarsat operation and users in the adjacent band?*

*Question 32: Do you have any comments on Agenda Item 9.1.2 concerning reduction of the satellite co-ordination arc?*

*Question 33: Do you agree that the UK should oppose any proposal that aims at changing the provisions of the Radio Regulations in a way that gives inherent priority (i.e. coordination priority) to certain satellite systems over any other satellite system?*

*Question 34: Do you have any comments on Agenda Item 9.1.4 relating to updating the RR for out of date or redundant material?*

*Question 37: Do you have any views on the CEPT position that no further work is required in respect of spectrum management guidelines for emergency and disaster relief radiocommunications?*

*Question 38: Do you agree that no specific measures need to be introduced for nano and pico-satellites and that the current approach to their regulation is sufficient?*

*Question 39: Do you agree that the UK should support the recent regulatory developments with respect to ESOMP operation, while continuing to monitor developments?*

*Question 40: Do you have any comments on Agenda Item 9.3 considering Resolution 80?*

## **IMPACT ASSESSMENT**

Vodafone notes the statement in Annex 5 of the consultation document that “there is not sufficient information available to conduct a full impact assessment at this time”. However, we also note that various previous consultations contained impact assessments which relate to topics considered in the present consultation.

The Ofcom Mobile Data Strategy consultation addressed WRC-15 agenda item 1.1 and did include an impact assessment (paragraph 2.8):

*“The analysis presented in this document constitutes an impact assessment (especially in Sections 3, 5, 6 and 7) as defined in section 7 of the Communications Act 2003.”*

The impact assessment in that consultation is also valid for the present consultation. Vodafone’s response to the Mobile Data Strategy consultation constituted representations on that impact assessment in accordance with Section 7 (7) a) and b) of the Communications Act 2003, and should also be considered as representations in accordance with that Act for the present consultation.

The Ofcom consultation on ‘Future use of the 700 MHz band’ (published on 28 May 2014) contains the following statements:

*“The analysis presented in this document constitutes an impact assessment as defined in section 7 of the Communications Act 2003.” (para 3.13)*

*“In addition, we include a number of annexes which provide further detail of our approach to the cost-benefit analysis and implications of a 700 MHz change of use. To develop our proposals, we also used analysis from a number of reports, most of them prepared by independent consultants. Annex 16 provides a list of these reports.” (para 2.22)*

*“We consider the long term future of the DTT platform in our discussion document on the Future of Free to View TV published on the same day as this consultation.” (para A5.17)*

Therefore, the Ofcom report on ‘Future of Free to View TV’ forms part of the impact assessment for the ‘Future use of the 700 MHz band’ consultation.

The Ofcom consultation on 'Securing long term benefits from scarce spectrum resources: A strategy for UHF bands IV and V' (published on 29 March 2012) also constitutes an impact assessment:

*"The analysis presented in the whole of this document represents an impact assessment, as defined in section 7 of the 2003 Act."*

The parts of this response that refer to the Ofcom consultations on the Mobile Data Strategy', Future use of the 700 MHz band (including the Future of Free to View TV discussion document) and Strategy for UHF bands IV and V therefore constitute representations on these impact assessments in accordance with Section 7 (7) a) and b) of the Communications Act 2003.