OFFICE OF COMMUNICATIONS

WRC-07 agenda item 1.4

Statement

Statement

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Section 1

Executive summary

Summary of conclusions

1.1 The following points highlight Ofcom's main conclusions on candidate bands following a review of the responses to the consultation it published on WRC-07 agenda item 1.4[1] on 27 February 2007:

- Ofcom's preference for the band 470 to 862 MHz is a co-primary mobile allocation in Region 1 in the table of allocations in Article 5 of the Radio Regulations;
- Ofcom supports a co-primary mobile allocation for the sub-band 3400 to 3800 MHz and an identification for IMT coupled with a requirement for an associated Resolution to reflect the need to provide appropriate protection for existing satellite use whilst facilitating access to the band for new use;
- In view of the emerging opposition from various European administrations to the sub-band 3800 to 4200 MHz Ofcom supports a position of no change to the table of allocations;
- For the other candidate bands, we have concluded that there is no need to change the position proposed in the consultation however the UK may wish to consider the merit in signing up to any "no change" proposals developed within Europe.

Background

1.2 Agenda item 1.4 of the World Radiocommunication Conference 2007 (WRC-07) addresses the spectrum requirements for the future development of advanced mobile and nomadic wireless communications systems[2].

1.3 In preparation for WRC-07 the International Telecommunication Union, Radiocommunications sector (ITU-R) has produced a report which estimates that International Mobile Telecommunications (IMT) will require 1280 MHz of spectrum (a figure that includes the 580 MHz already identified for IMT-2000).

1.4 The candidate frequency bands under consideration in the ITU for identification for IMT at WRC-07 are:

[1] http://www.ofcom.org.uk/consult/condocs/wrc07/

[2] Within the International Telecommunication Union these systems are known as International Mobile Telecommunications (IMT), a term which encompasses IMT-2000 (3G systems) and IMT-Advanced (previously known as 'systems beyond IMT 2000')

Table 1. Candidate bands

Candidate band	Anticipated use
410 to 430 MHz	Bands which are attractive for the coverage extension of current IMT-2000 systems
450 to 470 MHz	
470 to 862 MHz	Coverage extension and possibly providing capacity requirements
2300 to 2400 MHz	Bands which are attractive for providing the capacity requirements for IMT-Advanced
2700 to 2900 MHz	
3400 to 3600 MHz	
3600 to 3800 MHz	
3800 to 4200 MHz	
4400 to 4990 MHz	

1.5 On 27 February 2007, Ofcom published a consultation[3] on WRC-07 agenda item 1.4. The consultation set out Ofcom's analysis of the benefit of identifying spectrum for IMT and a proposed position on each on the candidate bands. This took account of the developing position within Europe and proposals were therefore in terms of whether Ofcom should support the development of European Common Proposals (ECPs) covering each of the candidate bands.

1.6 In the consultation, Ofcom proposed

- To adopt a position of support for an ECP on a primary mobile allocation in the band 470 to 862 MHz at WRC-07, linked to a Resolution calling for ITU studies which could lead to an identification for IMT in the band at WRC-11;
- To adopt a position of support for an ECP on a primary mobile allocation and an identification for IMT in the band 3400 to 3800 MHz at WRC-07;
- To adopt a position of support for an ECP opposing any changes in the band 2700 to 2900 MHz; and
- To adopt a neutral position on the remaining candidate bands.

1.7 The consultation closed on 30 March 2007. During the consultation, Ofcom received 31 non-confidential responses and one confidential response.

Overall policy towards WRC Agenda Item 1.4

1.8 Ofcom has concluded that, whilst there was concern from respondees to the consultation on the proposed position on individual candidate bands, there is general support for the objective of having WRC-07 take measures under agenda item 1.4 that ultimately enable the availability of spectrum for a range of applications including IMT.

470 to 862 MHz

1.9 Ofcom remains convinced of the usefulness of this band for mobile applications and plans to explore opportunities for achieving a co-primary mobile allocation in this band at WRC-07. Ofcom's preference for this band is a co-primary mobile allocation

[3] http://www.ofcom.org.uk/consult/condocs/wrc07/

in Region 1 for the whole of the band 470 to 862 MHz in the table of allocations in Article 5 of the Radio Regulations.

1.10 The majority of CEPT countries (but not all) support deferring consideration of this band until the following WRC, provisionally scheduled for March 2011 (WRC-11).

1.11 Ofcom believes that it is necessary to work within CEPT on proposals for alternatives to a “no change” ECP at WRC-07.

3400 to 4200 MHz

1.12 In general Ofcom strongly favours more flexible allocations, including co-primary mobile in this band. This would not prevent continued satellite use of the band. It does not imply that, by dint of the allocation, satellite use would be cleared; it would simply remove regulatory obstacles and increase opportunity for mobile use.

1.13 However, Ofcom recognises that current users of this spectrum have a legitimate interest in ensuring that they can continue to use the band and that the addition of a co-primary allocation and identification for IMT may increase the uncertainly of these existing users. Ofcom believes that it can serve the interests of spectrum users most effectively if it is involved in the development of the ECPs for this band and subsequent negotiations at WRC-07.

1.14 Ofcom therefore recommends support for the development of an ECP for a co-primary allocation to mobile for the sub-band 3400 to 3800 MHz and an identification for IMT coupled with a requirement for an associated Resolution to reflect the need to provide appropriate protection for existing satellite use whilst facilitating access to the band for new use.

1.15 Ofcom has considered the points made on the importance of ensuring continued access to 4 GHz spectrum (known as C-band) for fixed satellite service applications. Ofcom sees little prospect of an ECP being agreed for a co-primary mobile allocation and identification for IMT in the sub-band 3800 to 4200 MHz, as there appears to be a strong consensus in Europe against this. Ofcom does not believe that it would serve the best interests of the UK to pursue an isolated line on this sub-band; the larger incremental benefits will come from action on the sub-band 3400 to 3800 MHz. Additionally, Ofcom believes that the best interests of the fixed satellite community world wide are best served if a position of no change is adopted for the sub-band 3800 to 4200 MHz.

1.16 Ofcom therefore recommends that for the sub-band 3800 to 4200 MHz a position of supporting no change to the table of allocations would be in the best interests of spectrum use in the UK.

2700 to 2900 MHz

1.17 Ofcom is satisfied that its proposal to oppose any changes to this band in the radio regulations is appropriate. It may be noted an ECP opposing changes in this band has already been agreed.

Other candidate bands

1.18 Ofcom proposed a neutral position for the remaining bands. However, CEPT has agreed ECPs proposing no change in these bands. In Ofcom’s view it is important to show united support within Europe on agenda items going in to WRC-07 where we

can. Ofcom therefore recommends that the United Kingdom signs up to the “no change” ECPs for the bands 410 to 430 MHz, 2300 to 2400 MHz and 4400 to 4990 MHz.

1.19 The band 450 to 470 MHz will be discussed again at within CEPT in June and July. Ofcom continues to believe that this is not a priority IMT band for the United Kingdom and therefore does not see a requirement for the UK to actively contribute to that debate.

Section 2

Introduction

2.1 Ofcom has been leading UK preparations for the World Radiocommunication Conference 2007 (WRC-07). On 27 February 2007 Ofcom published a consultation[4] on WRC-07 agenda item 1.4. The consultation closed on 30 March 2007. During the consultation period, Ofcom received 31 non-confidential responses and one confidential response.

2.2 This statement describes Ofcom's analysis of the responses and its conclusions and recommendations for the approach the UK should adopt in international negotiation on this agenda item in preparation for WRC-07. These recommendations have been reviewed and agreed by the Government.

2.3 Since the closure of the consultation, two key international meetings (the ECC PT1 meeting of 11 – 13 April 2007 and the CEPT Conference Preparatory Group (CPG-07) meeting of 16 – 20 April 2007) have been held, with inconclusive results on two of the key candidate bands addressed in the consultation. There has also been discussion on the 470 -862 MHz band at the EU's Radio Spectrum Policy Group meeting on 8 May. Ofcom has taken account of the outcome of those meetings in its recommendation on the line to take on this WRC-07 agenda item.

Background

2.4 Agenda item 1.4 of WRC-07 addresses the spectrum requirements for the future development of advanced mobile and nomadic wireless communications systems[5].

2.5 In preparation for this, Working Party 8F (WP8F) of the International Telecommunication Union, Radiocommunications sector (ITU-R) has produced:

- Report ITU-R M.2078 which estimates that International Mobile Telecommunications (IMT) will require 1280 MHz of spectrum (a figure that includes the 580 MHz already identified for IMT-2000); and
- a list of candidate frequency bands that the WRC-07 could identify to meet this estimated demand.

2.6 The estimate in ITU implies that an additional 700 MHz of spectrum may be required to support IMT-Advanced and IMT-2000 services to be potentially available around 2015.

2.7 The ITU's Radio Regulations contain a Table of Frequency Allocations. These "allocate" services such as Fixed, Mobile, Broadcast and Satellite to particular frequency bands. Some radio services are given a "primary" allocation which gives them a particular status with respect to neighbouring territories. For example, stations of such a service may claim protection from interference from services which have a "secondary" allocation or services operating without an allocation in that frequency band.

[4] http://www.ofcom.org.uk/consult/condocs/wrc07/

[5] Within the International Telecommunication Union these systems are known as International Mobile Telecommunications (IMT), a term which encompasses IMT-2000 (3G systems) and IMT-Advanced (previously known as 'systems beyond IMT 2000')

2.8 The Radio Regulations also "identify" certain frequency bands as being suitable for an application within a broad service allocation – for example IMT-2000. Such an identification does not prevent the use of other applications of the relevant radio service. It gives no elevated status, either with respect to other primary radio services or with respect to other applications within the same radio service and it does not prevent the application from being used in bands other than those with identifications.

2.9 Although identification for an application does not elevate an application's regulatory status, there is merit in this process for particular applications. In the case of mass-market public cellular networks, the frequency bands identified become the bands that administrations around the world are most likely to make available for that application. These are the bands where high volumes of equipment are developed and the benefits of economies of scale flow from this, as well as the benefits of inter-operability within and across different countries.

2.10 Most of the focus of agenda item 1.4 is on selecting frequency bands where WRC-07 could add an identification for IMT in the Radio Regulations. Some of the candidate bands, however, do not have an allocation to the mobile service or only have a secondary allocation. If those bands were to be identified for IMT, then it would be necessary also to add a primary allocation to the mobile service in the Radio Regulations.

2.11 The candidate frequency bands under consideration in the ITU for identification for IMT at WRC-07 are:

Table 2. Candidate bands

Candidate band	Anticipated use
410 to 430 MHz	Bands which are attractive for the coverage extension of current IMT-2000 systems
450 to 470 MHz	
470 to 862 MHz	Coverage extension and possibly providing capacity requirements
2300 to 2400 MHz	Bands which are attractive for providing the capacity requirements for IMT-Advanced
2700 to 2900 MHz	
3400 to 3600 MHz	
3600 to 3800 MHz	
3800 to 4200 MHz	
4400 to 4990 MHz	

Summary of consultation proposals

2.12 The consultation published on 27 February 2007 set out Ofcom's proposals for the positions the UK should take towards agenda item 1.4 and in particular towards the candidate bands currently under consideration. These were:

- to support efforts to keep the IMT-Advanced family as open and flexible as possible;
- to support a non-binding identification of spectrum for IMT but keep this as generic as possible (i.e. for IMT rather than IMT-Advanced);
- to support changing existing identifications from IMT-2000 to IMT to foster greater flexibility in their use;

- to support the development of a European Common Proposal (ECP) for a primary mobile service allocation in the band 470 to 862 MHz at WRC-07 and a Resolution for ITU-R to study the band for an identification for IMT at WRC-11;

- to support the development of an ECP for a co-primary allocation to the mobile service and identification for IMT in the bands 3400 to 3600 MHz and 3600 to 3800 MHz;

- to oppose any change to the allocations or a IMT identification in the band 2700 to 2900 MHz at WRC-07; and

- to adopt a neutral approach to the remaining candidate bands.

2.13 All of these proposed positions should be read in the context of the likely changes to the International Radio Regulations that will result from the conclusions of WRC-07. Such decisions do not necessarily imply changes to regulatory policy in the UK. In the case of Government spectrum holdings, any changes to regulatory policy would need to be consistent with the Government response[6] to the Independent Audit of Spectrum Holdings[7] lead by Professor Martin Cave.

Update on European developments

2.14 The ECC PT1 meeting of 11 – 13 April 2007 developed the text of ECPs for WRC-07 agenda item 1.4.

2.15 ECC PT1 discussed guidance from CPG and proceeded to develop proposals based on no change to the table of allocations for the band 470 to 862 MHz at WRC-07, a new Resolution on studies and an agenda item for WRC-11 to consider the results of those studies.

2.16 ECC PT1 also developed an ECP for the band 3400 to 3800 MHz which proposed adding a primary mobile allocation for ITU Region 1 to the table of allocations and a footnote identifying the band for IMT. A proposal for a WRC-07 Resolution was also included in the ECP highlighting the importance of the existing use of the band and calling for the need to protect this use to be taken into account when making the band available for new use. There was discussion of whether the upper boundary should be 3800 MHz or 4200 MHz and the draft ECP was sent to CEPT Conference Preparatory Group (CPG) with this matter unresolved. ECPs for no change to the table of allocations were forwarded to the CPG for the bands 410 to 430 MHz, 2300 to 2400 MHz, 2700 to 2900 MHz and 4400 to 4990 MHz.

2.17 The CPG-07 meeting of 16 – 20 April 2007 reviewed the ECPs from ECC PT1. It approved the ECPs for no change to the table of allocations for the bands 410 to 430 MHz, 2300 to 2400 MHz, 2700 to 2900 MHz and 4400 to 4990 MHz. The CPG was unable to conclude on the band 470 to 862 MHz and asked ECC PT1 to review the ECP further with the following guidance:

> "In order to investigate the possibilities for broadening the support for an ECP on the candidate band 470 to 862 MHz, ECC PT1 may/should consider, based on contributions, amendments to the

[6] http://www.spectrumaudit.org.uk/pdf/governmentresponse.pdf
[7] http://www.spectrumaudit.org.uk/pdf/20051118%20Final%20Formatted%20v9.pdf

draft ECP as presented in the ECC PT1 Report to CPG. Discussions should be limited to refinement of option B2[8]."

2.18 The CPG was also unable to conclude on the band 3400 to 4200 MHz and asked ECC PT1 to consider the ECP further and focus on the unresolved issues including whether to propose primary mobile across all of the band 3400 to 4200 MHz or to limit proposals for a primary mobile allocation to the sub-band 3400 to 3800 MHz.

[8] "No allocation change at WRC-07. The adoption of a WRC-07 Resolution addressing the issue of the digital dividend together with an associated WRC-11 Agenda Item which would enable the allocation of all or part of the band 470 to 862 MHz for mobile service and identification for IMT as one option among other uses of the digital dividend."

Section 3

Comments on Ofcom's general analysis

Background

3.1 In the consultation, Ofcom set out its rationale for supporting efforts to identify spectrum for IMT. The consultation document discussed a number of issues for consideration, including the policy objectives that would be furthered by taking action on this agenda item and the approach that Ofcom had followed in developing proposals for identification of bands.

3.2 Ofcom asked the following general question

Question 1: Do you agree with Ofcom's analysis of the benefit of identifying spectrum for IMT at WRC-07 and the general consideration that needs to be addressed for each band?

Identification

3.3 Some respondents raised questions about identification of spectrum, and whether it was necessary to go further than a mobile allocation. Some were concerned that an identification of spectrum for IMT was too narrow and argued that Ofcom should seek a broader form of words, such as "broadband wireless including IMT".

3.4 The first two points in the UK line for this agenda item are

- to support efforts to keep the IMT-Advanced family as open and flexible as possible; and
- to support a non-binding identification of spectrum for IMT but keep this as generic as possible (i.e. for IMT rather than IMT-Advanced)

3.5 Bearing this in mind, Ofcom believes that a non-binding identification of spectrum for IMT will not restrict its ability to make spectrum available on a technology and application neutral basis. Additionally, any proposals to make changes to the radio regulations are effectively restricted to the context of the agenda item (i.e. IMT).

Amount of spectrum

3.6 Some respondents pointed out that the ITU-R spectrum estimate report calculated a range of figures depending on the market setting used, and requested that Ofcom base its proposals on the higher market setting.

3.7 Ofcom believes that while the spectrum estimate report was a useful exercise in forecasting future demand, the proposals for particular bands to be identified for IMT need to consider the potential for widespread support, since this will be essential in order for the identification of spectrum to achieve economies of scale.

Ofcom's conclusion

3.8 Ofcom concludes that there is general support for the objective of having WRC-07 take measures that ultimately enable the availability of spectrum for a range of applications including IMT.

3.9 Ofcom's view is that a primary mobile allocation in a frequency band in the Table of Allocations in the Radio Regulations allows nations the freedom to make decisions to license a wider range of applications and services, subject to any requirement to coordinate with other co-primary services in neighbouring countries. However it does not require a nation to license the use of any particular primary service on its territory. This allows nations to take policy decisions on the priority they give to the different services.

Section 4

Views on spectrum at 470 to 862 MHz

Consultation proposals

4.1 In the consultation, Ofcom stated that it believes that the band 470 to 862 MHz is highly suitable for mobile applications but recognised the need for regulatory safeguards to protect the broadcasting use of the band and avoid conflict with the agreements reached at the ITU Regional Radiocommunication Conference in 2006. The consultation further stated that Ofcom believes that WRC-07 is the appropriate time for the change of allocation and that the alternative option of entering WRC-07 with a proposal to put this band on the agenda for WRC-11 would represent a missed opportunity.

4.2 The consultation suggested that this was a key band on which Ofcom would need to express a strong position at ECC PT1 and CPG. Therefore Ofcom proposed to support the development of an ECP for a co-primary mobile service allocation in the band 470 to 862 MHz at WRC-07 and a Resolution for ITU to study the band for an identification for IMT at WRC-11, subject to suitable safeguards to protect the UK's digital television switchover programme.

4.3 On this band the consultation asked

> *Question 2: Do you agree with Ofcom's proposal to seek a primary mobile service allocation in the band 470 to 862 MHz and a Resolution to initiate studies at WRC-07 for an IMT identification at WRC-11?*

Responses

4.4 BT, Inmarsat, Intel Corporation (UK) Ltd, Intelsat, Motorola, O2, Samsung and the WiMAX Forum supported the Ofcom proposals, but with some differences of view about the wording of any identification, as outlined in paragraph 3.3. Ericsson, Intellect, Nokia, Orange and the UMTS Forum were of the view that Ofcom should aim to achieve both a mobile allocation and identification of spectrum in this band for IMT at WRC-07. T-Mobile and Vodafone agreed with the proposal for a mobile allocation at WRC-07 but suggested that the outcome of studies could be addressed by an ITU-R Recommendation, which could be published before WRC-11. CAA and New Skies Networks Ltd had no objection to a mobile allocation but believed that identifying spectrum in this band for IMT was not necessary.

4.5 One industry body (SAP REG) mentioned the need to take the broadcasting satellite allocation at 620 to 790 MHz into account.

4.6 The BBC response, which referred to its contribution on the Digital Dividend Review, drew attention to the potential for interference to receivers of digital terrestrial television from mobile uplinks.

4.7 Ofcom concludes that there is support from the mobile industry for its proposals for this band, though some would like to move faster than Ofcom is proposing. Ofcom recognises the concern from the BBC on potential for interference to receivers of digital terrestrial television and Ofcom would aim for the Resolution to take this coexistence issue into account in studies related to IMT in this band (noting that work on this issue is already underway in Europe in the ECC TG4 group).

4.8 In the European preparations for WRC-07, it has emerged that the majority of countries are opposed to changes to the allocations in this band being made at WRC-07, though it appears that they can accept the possibility of change of allocation at WRC-11. Therefore Ofcom's current assessment is that there is little prospect of an ECP for a primary mobile allocation for all three ITU Regions within the body of the Table of Frequency Allocations in the Radio Regulations.

Ofcom's conclusion

4.9 Ofcom believes that it is necessary to work within CEPT on the text of the Resolution contained in the current draft ECP and to keep open the option of adding a co-primary mobile allocation in some form at WRC-07.

4.10 Ofcom remains convinced of the usefulness of this band for mobile applications and plans to explore opportunities for achieving its goal of a co-primary mobile allocation in this band.

Section 5

Views on spectrum at 3400 to 4200 MHz

Consultation proposals

5.1 In the consultation, Ofcom acknowledged that the sub-band 3400 to 3800 MHz supports high-value incumbent uses, and that band-sharing with a high density mobile service appears difficult. However, Ofcom recognised that the sub-band's capacity characteristics and international support for the sub-band suggest that it should be a priority for upgrading the existing secondary mobile service allocation to make it co-primary with the fixed and fixed-satellite (space-to-Earth) services. Ofcom proposed to support the development of an ECP for a co-primary allocation to the mobile service and identification for IMT in the sub-bands 3400 to 3600 MHz and 3600 to 3800 MHz.

5.2 Ofcom re-iterated that a decision to support such an ECP does not necessarily imply changes to regulatory policy in the UK and in particular any changes to the use of the sub-band 3400 to 3600 MHz would require the agreement of the MOD and be consistent with the Government Response[9] to the Independent Audit of Spectrum Holdings[10] led by Professor Martin Cave.

5.3 On the sub-band 3400 to 3800 MHz the consultation asked

Question 3: Do you agree with Ofcom's proposal to support the development of a European Common Proposal for a co-primary allocation to the mobile (except aeronautical mobile) service and an identification for IMT in the band 3400 to 3800 MHz at WRC-07?

5.4 The widespread opposition to the use of IMT in the sub-band 3800 to 4200 MHz even before the consultation had led Ofcom to conclude that the this sub-band should not be a priority for action at WRC-07. In the consultation, Ofcom proposed to adopt a neutral position regarding support for this candidate band.

5.5 The sub-band 3800 to 4200 MHz was covered by question 5 in the consultation, which asked

Question 5: Do you agree with Ofcom's proposal to adopt a neutral position on whether the remaining bands are supported or opposed as candidates for a mobile allocation and IMT identification?

Satellite industry responses

5.6 Current users of satellite spectrum in the 4 GHz range and those dependent on applications currently provided in 4 GHz spectrum provided a consistent view. The responses from the BBC, Eutelsat, Inmarsat, Intelsat, the Met Office, New Skies Networks Ltd, SAP REG and Schlumberger Oilfield UK plc indicated that they were opposed to new mobile allocations in any part of the band 3400 to 4200 MHz. As a result, satellite users did not agree with Ofcom's proposal to support the ECP currently under development for the sub-band 3400 to 3800 MHz. They also argued

[9] http://www.spectrumaudit.org.uk/pdf/governmentresponse.pdf
[10] http://www.spectrumaudit.org.uk/pdf/20051118%20Final%20Formatted%20v9.pdf

that instead of adopting a neutral line on the sub-band 3800 to 4200 MHz, Ofcom should actively oppose any mobile allocation or IMT identification.

Mobile industry responses

5.7 Responses from the mobile industry were similarly united. The industry pointed out the forecasts for a significant requirement for additional spectrum and argued that this was the only candidate band that could fulfil the spectrum requirement. There was therefore agreement with Ofcom's proposal to support the development of an ECP to add a co-primary mobile allocation and identification for IMT for the sub-band 3400 to 3800 MHz. Ericsson, Nokia, O2, Orange, Samsung, T-Mobile, the UMTS Forum and Vodafone argued that Ofcom should try to achieve a mobile allocation across the whole of the band 3400 to 4200 MHz, instead of adopting a neutral position above 3800 MHz.

Other responses

5.8 The BBC additionally pointed out that the 3.5 GHz spectrum is used for programme making and special events (PMSE), particularly digital radio cameras. The BBC was concerned that supporting an ECP for a co-primary mobile allocation and identification of this spectrum for IMT would add to the uncertainty around the future availability of this band for PMSE.

5.9 The BBC and BT also mentioned that there are fixed link interests in the 3600 to 4200 MHz band.

Ofcom's conclusion

5.10 Ofcom outlined its understanding of the positions of the various spectrum users in the consultation and the responses have confirmed this as accurate. Ofcom recognises that current users of this spectrum have a legitimate interest in ensuring that they can continue to use the band.

5.11 Ofcom has considered the points made on the importance of ensuring continued access to 4 GHz (C-band) spectrum for fixed satellite service applications.

5.12 In general, Ofcom strongly favours more flexible allocations, including co-primary mobile in the band. This would not prevent continued satellite use of the band. It does not imply that, by dint of the allocation, satellite use would be cleared; it would simply remove regulatory obstacles and increase opportunity for mobile use.

5.13 However, Ofcom recognises that there is a need to balance the requirements for continued access to spectrum for the existing users operating within the current allocations and the potential new users that would need regulatory change to facilitate future access. Ofcom also recognises that the addition of a co-primary mobile allocation and identification for IMT across the whole of the band 3400 to 4200 MHz may increase the uncertainty existing users feel about their continued access to the band. Ofcom believes that it can serve the needs of spectrum users most effectively if it is involved in the development of ECPs for the whole of the band 3400 to 4200 MHz and subsequent negotiations at WRC-07.

5.14 Ofcom has concluded that the best interests of the UK would be to support the enabling measure of co-primary mobile allocation and identification for IMT in sub-band 3400 to 3800 MHz, coupled with a Resolution to reflect the need to provide

appropriate protection for existing satellite use of the band whilst facilitating access to the band for new use.

5.15 Ofcom has considered the points made on the importance of ensuring continued access to C-band spectrum for fixed satellite service applications. Ofcom sees little prospect of an ECP being agreed for a co-primary mobile allocation and identification for IMT in the sub-band 3800 to 4200 MHz, as there appears to be a strong consensus in Europe against this. Ofcom does not believe that it would serve the best interests of the UK to pursue an isolated line on this sub-band; the larger incremental benefits will come from action on the sub-band 3400 to 3800 MHz. Additionally, Ofcom believes that the interests of the fixed satellite community world wide are best served if a position of no change is adopted for the sub-band 3800 to 4200 MHz.

5.16 Ofcom therefore recommends that to give greater assurance to the satellite industry it should oppose (rather than remain neutral about) any changes to the Table of Allocations in the sub-band 3800 to 4200 MHz spectrum. This approach would be consistent with the view emerging from CEPT.

5.17 In summary, Ofcom believes that it can serve the interests of spectrum users most effectively if the UK supports:

- the development of the ECP for a co-primary mobile allocation and identification for IMT for the sub-band 3400 to 4200 MHz, particularly including the text of the Resolution; and

- the development of a no-change ECP for the sub-band 3800 to 4200 MHz.

5.18 Ofcom therefore recommends support for the development of an ECP for a co-primary allocation to mobile for the sub-band 3400 to 3800 MHz and an identification for IMT and of a no-change ECP for the sub-band 3800 to 4200 MHz.

Section 6

Views on spectrum at 2700 to 2900 MHz

Consultation proposals

6.1 In the consultation, Ofcom recognised that while the adjacency of this band to the 2500 to 2690 MHz spectrum and its wide bandwidth could be advantageous, substantial international opposition to the use of this band for IMT has emerged in Europe and beyond.

6.2 Given the nature of its present use in the UK for aeronautical radar (civil and military) and meteorological radar, and in view of the significant Government interest in this band, Ofcom proposed to oppose any change to the allocations or an IMT identification in the band 2700 to 2900 MHz at WRC-07.

6.3 On this band the consultation asked:

Question 4: Do you agree with Ofcom's proposal to oppose any change to the allocations or an IMT identification in the band 2700 to 2900 MHz at WRC-07?

Responses

6.4 Ofcom received a range of responses on the band 2700 to 2900 MHz. There was general support for Ofcom's proposal amongst those organisations that currently use this spectrum or depend on applications that use the spectrum. On the other hand there were suggestions that the proximity of this candidate band to existing IMT-2000 spectrum and its size made it a good candidate for IMT. One respondent drew attention to the recommendations of the Independent Audit of Spectrum Holdings and the Government response regarding this band.

Ofcom's conclusion

6.5 Ofcom is not convinced that the merits of size and proximity to other bands outweigh the concerns of the safety services that use this spectrum. Ofcom is similarly unconvinced that implementation of the recommendations of the Independent Audit would be dependent on adding a mobile allocation to the Radio Regulations in this band at this stage. It will be necessary to complete and reach firm conclusions on the results of bandsharing trials in this part of the spectrum before making proposals for changes to the international regulations.

6.6 Ofcom is therefore satisfied that its proposal to oppose any changes to this band in the Radio Regulations is appropriate. It may be noted that the CPG has already agreed the text of an ECP opposing changes in this band.

Section 7

Comments regarding other candidate bands

Consultation proposals

7.1 For the candidate bands 410 to 430 MHz, 450 to 470 MHz, 2300 to 2400 MHz and 4400 to 4990 MHz Ofcom proposed to adopt a neutral position. Ofcom asked the following question to cover these bands:

Question 5: Do you agree with Ofcom's proposal to adopt a neutral position on whether the remaining bands are supported or opposed as candidates for a mobile allocation and IMT identification?

410 to 430 MHz

7.2 Most respondents were content for Ofcom to be neutral on this band but one wanted Ofcom to actively oppose its identification and a second respondent felt that this band should be discouraged.

7.3 CEPT agreed an ECP for no change to this band at the Conference Preparatory Group meeting in April 2007.

450 to 470 MHz

7.4 Most respondents were content for Ofcom to be neutral on this band but one wanted Ofcom to actively oppose its identification. One respondent suggested that, while not actually promoting this band, the UK should be sympathetic to inclusion of this band in any package that meets other UK objectives.

7.5 CEPT has not yet agreed whether to develop an ECP for this band and the April meeting of CPG returned the issue to ECC PT1 for further discussion.

2300 to 2400 MHz

7.6 Few respondents disagreed with Ofcom's proposal for a neutral stance on this band. Some backed the band because of its use in other parts of the world and some opposed it due to the importance of its use for aeronautical telemetry and also because of its use by radio amateurs.

7.7 CEPT agreed a European Common Proposal for no change to this band at the Conference Preparatory Group meeting in April 2007.

4400 to 4990 MHz

7.8 Few respondents disagreed with Ofcom's proposal for a neutral stance on this band. The band was supported for identification by Ericsson, Nokia, Samsung, T-Mobile and UMTS Forum. It was opposed by Motorola and SAP REG, while Vodafone discouraged identification of this band.

7.9 CEPT agreed a European Common Proposal for no change to this band at the Conference Preparatory Group meeting in April 2007.

Ofcom's conclusion

7.10 In Ofcom's view it is important to show united support within Europe on agenda items going in to WRC-07 where we can. Ofcom will therefore recommend that the United Kingdom signs up to the no change ECPs in 410 to 430 MHz, 2300 to 2400 MHz and 4400 to 4990 MHz.

7.11 As noted in paragraph 7.5 the 450 to 470 MHz band will be discussed again at ECC PT1 in June and CEPT CPG in July. Ofcom continues to believe that this is not a priority IMT band for the United Kingdom and therefore does not see a requirement for the UK to actively contribute to that debate. If the discussion results in an ECP on 450 to 470 MHz, Ofcom will make a recommendation to the International Frequency Planning Group on whether the United Kingdom should sign up to it, based on the content and the consideration in paragraph 7.10.

Section 8

Next steps

8.1 The next European preparation meetings that will consider ECPs for the candidate bands (including the bands 470 to 862 MHz and 3400 to 4200 MHz) are the next meetings of ECC PT1 on 27 – 29 June and CPG on 10 – 13 July. The CPG meeting on 10 – 13 July is the last scheduled meeting at which ECPs will be developed by CEPT. If we are to influence the development of the ECPs and in particular make sure that the proposed text of any Resolutions include the elements that are required to facilitate flexibility to introduce new spectrum uses in future while protecting the existing uses of the spectrum, Ofcom will need to play an active part of these meetings and make contributions as required.

8.2 Following the CPG meeting on 10 – 13 July the final text of the ECPs will then be circulated to CEPT administrations for signing.

8.3 The Cabinet Office Committee on UK Spectrum Strategy (UKSSC) will take the final decision on whether the United Kingdom will sign up to each of the European Common Proposals for WRC-07, taking into account the recommendations of its sub-committee the International Frequency Planning Group (IFPG)

Annex 1

Summary of responses

A1.1 Ofcom asked the following questions in the consultation on WRC-07 agenda item 1.4.

Question 1: Do you agree with Ofcom's analysis of the benefit of identifying spectrum for IMT at WRC-07 and the general consideration that needs to be addressed for each band?

Question 2: Do you agree with Ofcom's proposal to seek a primary mobile service allocation in the band 470 to 862 MHz and a Resolution to initiate studies at WRC-07 for an IMT identification at WRC-11?

Question 3: Do you agree with Ofcom's proposal to support the development of a European Common Proposal for a co-primary allocation to the mobile (except aeronautical mobile) service and an identification for IMT in the band 3400 to 3800 MHz at WRC-07?

Question 4: Do you agree with Ofcom's proposal to oppose any change to the allocations or an IMT identification in the band 2700 to 2900 MHz at WRC-07?

Question 5: Do you agree with Ofcom's proposal to adopt a neutral position on whether the remaining bands are supported or opposed as candidates for a mobile allocation and IMT identification?

A1.2 Table 3 summarises the non-confidential responses that Ofcom received.

Table 3. Summary of non-confidential responses to the consultation.

	Question 1 General analysis	Question 2 470 - 862 MHz	Question 3 3400 - 3800 MHz	Question 4 2700 - 2900 MHz	Question 5 Other bands
ABFL Groupe Intellex	Disagreed with identification of spectrum for IMT				
BAE Systems Flight Test Instrumentation (UK)					The protection of 2300 - 2400 MHz for telemetry is vital to flight testing and development programmes

	Question 1 **General analysis**	**Question 2** **470 - 862 MHz**	**Question 3** **3400 - 3800 MHz**	**Question 4** **2700 - 2900 MHz**	**Question 5** **Other bands**
BBC		Position on future allocation of this band is set out in DDR response. Potential for widespread interference to broadcast services, especially where the uplink frequencies are in the broadcast band.	Concerns that supporting an ECP for a co-primary mobile allocation and identification of this spectrum for IMT would add to the uncertainty around the future availability of this band for PMSE. Concerns about implications for fixed links and satellite Earth stations. Believe that sharing between fixed satellite service and IMT may not be possible. Prefer Ofcom to be neutral or oppose	Not convinced that Ofcom's arguments are sufficiently strong to warrant opposition.	Agreed with Ofcom, particularly in 410 - 430 MHz and 450 – 470 MHz

	Question 1 **General analysis**	**Question 2** **470 - 862 MHz**	**Question 3** **3400 - 3800 MHz**	**Question 4** **2700 - 2900 MHz**	**Question 5** **Other bands**
BT	Fixed and mobile allocations are sufficient in the Radio Regulations, without any need for identifications. ITU study groups could produce suitable non-mandatory recommendations. Existing footnotes should be reworded "for IMT" or preferably "for wireless access systems including IMT"	Support Ofcom Two step process appears pragmatic.	Acknowledge mobile allocation would support future flexibility in national spectrum management decisions Concerns over sharing with FS/FSS Would not advocate identifications for IMT	Disagree Would not advocate identification See no reason not to add mobile allocation	Would not advocate identification See no reason not to add mobile allocation in suitable candidate bands in cases where these do not already exist.
Civil Aviation Authority		No objection to allocation at WRC-07 Given the take up and use of 3G and amount of spectrum already allocated for Mobile Phone use, not convinced that additional allocations required at WRC-11	Do not see need for additional allocations of this proportion at this time. Spectrum allocated for 3G has yet to be fully utilised	Support Ofcom Refers to SE34 studies on compatibility with radar.	General concern as to the true nature of the demand leading to the need for additional spectrum

	Question 1 **General analysis**	**Question 2** **470 - 862 MHz**	**Question 3** **3400 - 3800 MHz**	**Question 4** **2700 - 2900 MHz**	**Question 5** **Other bands**
Ericsson	Ericsson disagrees with amount of spectrum sought by Ofcom. Required new spectrum should be based on higher market setting. Ericsson urges Ofcom to strongly press for a solution at WRC-07 which fulfils the estimated spectrum demand of around 1000 MHz.	Agree with primary mobile allocation. Disagree with leaving identification to WRC-11 Should aim for harmonised sub band at least 2x40 MHz identified for IMT at WRC-07	Agree with 3400 – 3800 MHz but total band should be 3400 – 4200 MHz.	Disagree. Band should be allocated to mobile and identified for IMT at WRC-07.	Ofcom should support 2300 - 2400 MHz
Eutelsat	International impact of Ofcom's decision with regard to the identification of spectrum for IMT must also be assessed Expectation that Ofcom will carefully balance the interest of harmonisation for IMT systems and the need for the continuing operations of existing services.		Disagree Detrimental to the existing use of the band by fixed-satellite service earth stations Using this band even in a limited number of countries may impact telecommunications links of a larger number of countries		Suggests Ofcom should oppose 3800 - 4200 MHz

	Question 1 **General analysis**	**Question 2** **470 - 862 MHz**	**Question 3** **3400 - 3800 MHz**	**Question 4** **2700 - 2900 MHz**	**Question 5** **Other bands**
Inmarsat	Questions whether consumer surplus figures from existing cellular networks can be applied to this situation. 3G take up more limited than expected. Future situation for IMT and therefore economic benefit are uncertain. Little support in CEPT for higher frequency bands from 2G/3G operators. Propagation characteristics of each band should be considered in assessing value.	Agree	Disagree - Ofcom should adopt a no change position. Extended C-band use is increasing. This spectrum would overlap all of extended C-band and part of C-band. Most of UK would be in exclusion zone from one or more Earth stations, leaving little area for deployment of IMT. No economic case for mobile in this spectrum and not feasible to migrate existing services to another band.	Disagree Ofcom should support as alternative to 3400 - 3800 GHz	Disagree. For each band Ofcom should decide whether or not it supports the use of the band for IMT and should support an identification ECP or a “No Change” ECP as appropriate. 3800 - 4200 MHz should be "no change"
Intel Corporation (UK) Ltd	Difficulty with use of term "IMT" since it is not a service or application but a limited set of technologies e.g. DVB-H is not part of IMT. Footnote should be broadened to “IMT and Advanced Wireless Services”.	Agree, but studies should be wider than just IMT; they should cover “IMT and Advanced Wireless Services”.			

	Question 1 **General analysis**	**Question 2** **470 - 862 MHz**	**Question 3** **3400 - 3800 MHz**	**Question 4** **2700 - 2900 MHz**	**Question 5** **Other bands**
Intellect	Questions whether Ofcom has fully assessed impact on incumbent services Support changing IMT-2000 to IMT	Support Ofcom Prefers all to be achieved at WRC-07.	Allocation to mobile would be a reasonable objective if band were to be identified for IMT Some members have differing views over suitability for IMT due to existing services.	No view	Ofcom should support either identification or NOC, not be neutral
Intelsat	Agree with early identification of spectrum. Disagree with the consideration of 3400 - 4200 MHz. Ofcom has not adequately consulted satellite industry on potential impact/loss of revenue. Given Ofcom's assessment, band seems unlikely to be accepted globally.	Support Ofcom. Note preference for the band by IMT manufacturers and operators.	Disagree. Identification for IMT would threaten current UK Earth station assets and negatively impact future investment.	No strong opinion.	Ofcom should indicate preference for bands below 1 GHz and if possible a single band in that range.

	Question 1 General analysis	Question 2 470 - 862 MHz	Question 3 3400 - 3800 MHz	Question 4 2700 - 2900 MHz	Question 5 Other bands
MCGA	Use of a safety service should be included in considerations.			Agree with Ofcom	
Met Office			Disagree Met office receives operational data via 3400-3800 MHz band. Although the service is also available at Ku band, C-band is needed to prevent loss of data in heavy rain and for backup. If EUMETCAST moved this service to 3800 - 4200 MHz this would remove the concerns, provided that band was not used for IMT	Agree with Ofcom Met Office expects to operate rain radars in this band in the future where detection of widespread rainfall over the ocean is needed	Ofcom should oppose 3800 - 4200 MHz. Met Office SADIS distributes vital flight safety information in this band to 12 user stations in UK
Ministry of Defence	Analysis should consider current spectrum use by Defence and in the interests of National security.		No further comment beyond response to Question 1.	Agree with Ofcom	No further comment beyond response to Question 1.

	Question 1 **General analysis**	**Question 2** **470 - 862 MHz**	**Question 3** **3400 - 3800 MHz**	**Question 4** **2700 - 2900 MHz**	**Question 5** **Other bands**
Motorola	Prefer emphasis on user benefits	Agree with proposal for co-primary mobile allocation. Also support studies to ascertain whether there is a case for IMT identification. Points out societal advantages of an appropriately sized allocation to public safety users in this band.	Support proposal for co-primary mobile allocation. If BWA (technologies such as WiMAX) are included in IMT, respondent would support IMT identification.	Agree with Ofcom	Disagree Ofcom should oppose 410 - 430 MHz 450 - 470 MHz 4400 - 4990 MHz
NATS				Agree with Ofcom Any proposals for an agenda item or studies for WRC-11 that would (again) consider the band 2700-2900 MHz for IMT should not be supported, were such proposals to be made.	Disagree. In the band 3.8 - 4.2 GHz, NATS has a close interest in the provision of data for and the operation of the SADIS system

	Question 1 **General analysis**	**Question 2** **470 - 862 MHz**	**Question 3** **3400 - 3800 MHz**	**Question 4** **2700 - 2900 MHz**	**Question 5** **Other bands**
New Skies Networks Ltd	Disagree with process of "identification" in Radio Regulations. Identification of bands for particular services should be addressed though ITU-R study group questions. Ofcom's proposals do not go far enough in terms of technology neutrality.	No objection to mobile allocation. No need for band to be identified specifically for IMT.	Strongly disagree. C-band FSS are used throughout the globe for a large number of vital communications and safety-of-life services. Other parts of the world (outside UK) rely on C-band for basic trunking services, tsunami warning systems, distance learning, rural mobile telephony hubs and other vital services. Small IMT cell sizes mean that terrestrial network would require a large amount of infrastructure. Not efficient/optimal to use the spectrum for solely urban areas while blocking out C-band FSS for the whole country.	No objection to primary mobile allocation, but no need for IMT identification.	Disagree. Ofcom should oppose 3800 - 4200 MHz.

	Question 1 **General analysis**	**Question 2** **470 - 862 MHz**	**Question 3** **3400 - 3800 MHz**	**Question 4** **2700 - 2900 MHz**	**Question 5** **Other bands**
Nokia	Nokia supports the spectrum requirement of 1720 MHz for mobile communications by 2020 in Europe. If it is not possible to fulfil all of this estimated spectrum demand of around 1 GHz during WRC-07, additional band identification would be required from WRC-11.	Agree with Ofcom but both allocation on a co-primary basis of the whole 470-862 MHz band and identification of a harmonised sub-band for IMT within UHF TV band should be achieved at WRC-07	Agree with Ofcom but 3800-4200 MHz and other IMT candidate bands should also be identified for IMT at WRC-07	Disagree	An identification of the band 4400-4990 MHz, or parts of it, jointly with the 3400-4200 MHz, would fulfil spectrum requirements for 2015-2020 according to the higher market demand.
O2		Agree with Ofcom	Agree with Ofcom but 3800-4200 MHz and other IMT candidate bands should also be identified for IMT at WRC-07	Agree with Ofcom	Ofcom should seek consensus on European position to allocate/identify 3800 - 4200 MHz
Orange	At least 1 GHz of spectrum will be required by 2020.	Agree with Ofcom but both allocation on a co-primary basis of the whole 470-862 MHz band and identification of a harmonised sub-band at least 100 MHz for IMT within UHF TV band should be achieved at WRC-07	Agree with Ofcom but 3800-4200 MHz and other IMT candidate bands should also be identified for IMT at WRC-07	Disagree. If a primary allocation to mobile is not possible, then appropriate consideration should be given to a secondary allocation to mobile.	Ofcom should support 2300 - 2400 MHz and 3800 - 4200 MHz

	Question 1 General analysis	Question 2 470 - 862 MHz	Question 3 3400 - 3800 MHz	Question 4 2700 - 2900 MHz	Question 5 Other bands
PPL/IR Europe				Agree with Ofcom. Vitally important for this band to be excluded from consideration for any changes.	

	Question 1 **General analysis**	**Question 2** **470 - 862 MHz**	**Question 3** **3400 - 3800 MHz**	**Question 4** **2700 - 2900 MHz**	**Question 5** **Other bands**
RSGB	Useful to identify spectrum needs well in advance to enable long term planning but Ofcom has not explained why IMT deserves such special treatment over existing services/users.	Neutral.	Strongly object to prospect of additional services in 3400 - 3410 MHz that would not be compatible with weak signal Amateur service use. Any position that is adopted should account for incumbent users spectrum requirements, highlight IARU Spectrum Requirement to extend the 3400-3410MHz Amateur Satellite Service allocation to ITU Region 1. Would be prepared to consider greater sharing in the spectrum above 3410 MHz if Amateur and Amateur Satellite Services were given globally harmonised protected allocations in 3400 - 3410 MHz. In the absence of Primary status, respondents request a footnote to facilitate reception of amateur emissions.	Agree with Ofcom.	Disagree Ofcom should oppose 2300 - 2400 MHz, used for amateur narrowband, beacon activity and Amateur TV (in repeater) activity.

	Question 1 **General analysis**	**Question 2** **470 - 862 MHz**	**Question 3** **3400 - 3800 MHz**	**Question 4** **2700 - 2900 MHz**	**Question 5** **Other bands**
Samsung	Agree with Ofcom but further benefits include stabilising regulatory framework and removing uncertainties to foster investment that ultimately benefits consumers. For some bands, difficult to distinguish economic benefits from use of different bands, and cost of transitioning may dominate considerations.	Agree with Ofcom	Agree with Ofcom	Disagree. Not convinced difficulties are more onerous than for 3400 - 4200 MHz, therefore prefer neutral position.	Disagree. Would prefer Ofcom to support mobile allocation and IMT identification in 2300 - 2400 MHz 3800 - 4200 MHz 4400 - 4990 MHz
SAP REG	Where impracticable for two services to share frequency without harmful interference then in practice the band concerned can be used for one or the other service but not both. Identification of a band for use by an application will automatically confer to it a superior allocation status. If world-wide agreement could not be reached it would be inappropriate to identify a band on a Regional,	The band 620 - 790 MHz is allocated to BSS. We would not have any problem with a primary mobile service allocation as proposed by Ofcom, providing the BSS allocation is taken into account along with Method A1 of the CPM Report relating to WRC-07 agenda item 1.11.	Disagree with Ofcom. UK should promote "no change" for 3400 - 4200 MHz. Band is heavily used by FSS. Studies by SAP REG / ESOA / GVF have shown sharing with IMT is impracticable in areas already populated by FSS earth stations (incl large areas of UK and most European countries). Migration of FSS to 11/14 GHz not practicable due to congestion. Entire 3400 - 4200 MHz remains necessary for existing/future FSS. For	Do not disagree with Ofcom but believe the case for no change in the consultation is not convincing.	Disagree. UK should oppose any changes in 3800 - 4200 MHz and 4500 - 4800 MHz.

	Question 1 General analysis	Question 2 470 - 862 MHz	Question 3 3400 - 3800 MHz	Question 4 2700 - 2900 MHz	Question 5 Other bands
	multi-national or national basis. SAP REG questions whether identification of spectrum currently used by satellite is compatible with RSPG aim of balancing flexibility and harmonisation. Analysis should consider amount of money invested by present users of each band and take account of speculative nature of IMT spectrum estimates. The market-led approach fails to recognise that the band 3400-4200 MHz is uniquely available for FSS. The statement that in CEPT "there is general support for an IMT identification at 3400 to 3800 MHz" is misleading.		operational reasons it is necessary to change carrier frequencies within the band from time to time, therefore micro segmentation not possible.		

	Question 1 General analysis	Question 2 470 - 862 MHz	Question 3 3400 - 3800 MHz	Question 4 2700 - 2900 MHz	Question 5 Other bands
Schlumberger Oilfield UK plc	High importance of energy sector to UK, C-band FSS is an important component of its communication systems. £1bn is underestimate of contribution of users of C-band to UK economy.		Strongly oppose Ofcom should oppose any change in 3400 - 3800 MHz. Studies have shows that sharing with IMT is not possible. Moreover, they also suggest that any form of mitigation zone, or any other form of administrative provision, would soon be seen to be unmanageable and unenforceable.		Strongly oppose Ofcom should oppose any change in 3800 - 4200 MHz.
T-Mobile	Strongly agree with need to harmonise spectrum across nations for this kind of service.	Strongly agree. Urgent action needed, primary allocation to mobile should be one of UK/CEPT's top priorities for WRC-07. Resolution should call for Recommendation within 2 years of WRC-07 on harmonised sub band for mobile, including uplinks.	Strongly agree with Ofcom. Band need to go towards meeting estimated spectrum requirement.	Disagree. Band mentioned in Cave review, is also a preferred option of NGMN. Would like to review other possibilities, e.g. secondary mobile allocation or Resolution calling for studies for WRC-11.	Disagree. Would prefer IMT identification in 3800 - 4200 MHz and 4400 - 4990 MHz or other possibilities, e.g. primary mobile allocation or Resolution calling for studies for WRC-11.

	Question 1 **General analysis**	**Question 2** **470 - 862 MHz**	**Question 3** **3400 - 3800 MHz**	**Question 4** **2700 - 2900 MHz**	**Question 5** **Other bands**
UK Broadband	Support Ofcom's proposals for increased flexibility in spectrum management.		Partial support: Support primary mobile in 3400 - 3600 MHz General support for IMT identification Separate consideration of 3600 - 3800 MHz as this is a distinct band with different technical profile.		
UK radar manufacturer and operator	Agree only if safety is included in analysis			Agree with Ofcom	

	Question 1 **General analysis**	**Question 2** **470 - 862 MHz**	**Question 3** **3400 - 3800 MHz**	**Question 4** **2700 - 2900 MHz**	**Question 5** **Other bands**
UMTS Forum	Agree on benefit of identifying spectrum but not amount. UMTS Forum supports the spectrum requirement of 1720 MHz (incl existing IMT-2000 spectrum) for mobile communication in Europe by 2020. If not possible to fulfil estimated requirement at WRC-07, additional identification would be required from WRC-11.	Agree, but both mobile allocation of whole band and identification of sub-band for IMT (around 100 MHz) should be achieved at WRC-07.	Agree but other bands incl 3800 - 4200 MHz should also be allocated/identified. Whole 3400 - 4200 MHz band will be needed to meet demand for mobile in countries with higher market settings. Identification based on higher market setting will avoid national/regional bands, allow flexibility to implement IMT under low market scenario within identified bands and benefit from global economies of scale. Note that 3500 - 4200 MHz already has co-primary allocation to mobile in Regions 2 and 3.	Disagree. Close to existing IMT-2000 bands, some administrations have only limited no. of radars. Should have primary mobile allocation and IMT identification.	Disagree on some bands: 3800 - 4200 MHz: Ofcom should support allocation identification at WRC-07. 4400 - 4990 MHz: Ofcom should support allocation identification at WRC-07.

	Question 1 **General analysis**	**Question 2** **470 - 862 MHz**	**Question 3** **3400 - 3800 MHz**	**Question 4** **2700 - 2900 MHz**	**Question 5** **Other bands**
Vodafone	Agree Policy objectives should be: ● seek maximum flexibility in the use of spectrum ● protect the legitimate needs of incumbent services ● ensure that the outcome of WRC-07 provides the guidance needed for the development of global bandplans	Agree. However not necessary for WRC-11 to be involved. Resolution could be addressed in ITU-R Study Groups.	Agree, but Ofcom should seek a primary mobile allocation for the whole 3400 – 4200MHz frequency band, and address the relative priority for IMT (and other mobile services) and the fixed satellite service though the provisions in a footnote and its associated Resolution, e.g. a Resolution identifying the lower part of the band and giving a preference for FSS in the upper part of the band	Disagree Refers to Cave Audit and Government response. Ofcom should seek a secondary allocation in this band to the Mobile Service at WRC-07.	Ofcom should discourage the identification of frequency bands which are unlikely to be widely available.

	Question 1 **General analysis**	**Question 2** **470 - 862 MHz**	**Question 3** **3400 - 3800 MHz**	**Question 4** **2700 - 2900 MHz**	**Question 5** **Other bands**
WiMAX Forum	Agree. Primary mobile allocation in the Radio Regulations would be of utmost importance to ensure the integrity of a public mobile system deployed in a given frequency band in the UK.	Agree. Adopting a Resolution at WRC-07, to enable studies on whether or not the band should be identified for IMT and other similar applications at WRC-11, provides an appropriate mechanism to assess any potential impact on the GE-06 plan.	Agree on co-primary mobile allocation and (if considered necessary and if clear that WiMAX is included) an identification, but suggest text should be for “IMT and other broadband wireless access systems”. In 3400 - 3600 MHz, various sharing scenarios identified in the consultation document and the future migration of some incumbent services could be considered in the longer term.		Would like Ofcom to consider that WiBro has been deployed in 2300 - 2400 MHz and this technology could have economic benefits for UK.