



Ofcom

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**Response of Skype Communications sarl to Ofcom's consultation document:
*"Consultation on assessment of future mobile competition and proposals for the
award of 800 MHz and 2.6 GHz spectrum and related issues"*.**

Skype Communications sarl (hereafter 'Skype' www.skype.com) is a Luxembourg-based provider of peer-to-peer software applications which enable Skype users to communicate with other Skype users, and enabling, optionally and where possible, certain forms of communication with the subscribers of electronic communications networks and services.


Please find hereby Skype's brief response to Ofcom's consultation.

A. General Remarks

Skype welcomes the opportunity to comment on Ofcom's "*Consultation on assessment of future mobile competition and proposals for the award of 800 MHz and 2.6 GHz spectrum and related issues*".

Skype supports Ofcom's intention to take steps towards the opening and allocation of the 800 MHz band and 2500-2690 MHz band for electronic communications services (as part of a larger programme of opening other – including lower – frequency bands, for any type of usage).

Skype believes that the 800 MHz and 2500-2690 MHz spectrum should be allocated as soon as possible – generally on a UK-wide basis, although explicitly also enabling smaller-scale use – to support the rapidly growing demand for mobile broadband Internet access (as well as broadband *Internet* access in temporarily non-mobile or permanently non-mobile situations). Allocation procedures should be designed to ultimately achieve *market-based outcomes* promoting increased competition at all



levels of the value-chain (i.e. from the physical layer all the way up to Internet applications), *increased innovation* (including Internet-level innovation which does not require anyone's prior permission ('innovation without permission') and *user choice*, including for mobile broadband Internet access (users being each of individual citizen, businesses and the public sector, and – importantly – enabling any one of these to be both a consumer and a producer of any Internet content, applications and services).

Skype submits that making available *unrestricted* broadband *Internet* access – including unrestricted *mobile/wireless* Internet access – to as many UK citizens as possible, and to as many locations as possible, is an imperative to achieve socio-economic benefits including economic growth. Indeed, the use and distribution of all Internet content, applications and services is a major enabler of social and economic interaction, diffusion of information (including public sector information/interaction) and tools which are productivity-enhancing.


Skype expresses its concern that the proposals put forward by Ofcom entail serious risks. Key risks are that Ofcom's approach would: (i) broadly entrench the status-quo on the UK market, or even entrench regression therefrom, and (ii) fail to deliver the anticipated socio-economic benefits (those articulated by Ofcom, as well as those articulated by ourselves), for the following reasons:

1. Access to the Internet (not only 'higher quality data services') is key for the achievement of socio-economic benefits

Ofcom fails to consider user demand for mobile/wireless broadband *Internet* access (as opposed to 'higher quality data services' – which is the terminology systematically used by Ofcom), and fails to consider whether current supply conditions meet, and whether anticipated future supply conditions would meet, demand for *unrestricted* mobile/wireless broadband *Internet* access, as opposed to other data services provided by network operators.

Skype wishes to stress that it is not the mere availability of 'higher quality data services' as such, but rather the availability of *unrestricted* access to the *Internet* (enabling both access to, and the distribution of, Internet content, applications and services, i.e. including the any-to-any nature (any website, any application, any service) of the Internet), which is necessary to deliver key socio-economic benefits going forward. We refer in this context to a keynote address delivered by David S. Isenberg in April 2009, entitled "*Broadband without Internet ain't worth squat*"¹.

¹ <http://www.isen.com/blog/2009/04/broadband-without-internet-ain-worth.html>

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2. Current UK supply conditions frequently restrict choice for mobile/wireless Internet access

Current supply conditions in the UK are such that most mobile service retailers restrict usage of a large tract of the Internet, such as video, audio, VoIP, or instant messaging. Such restrictions are expressed through contractual clauses, specific surcharges for specific usage, and possibly through technical restrictions.²

As a result, today, UK citizens, businesses and public administrations only have the choice between 1 or perhaps 2 providers of *unrestricted* mobile/wireless access to the *Internet*.

3. Reliance on a ‘maverick’, in the light of Ofcom proposals, does not guarantee the achievement of socio-economic benefits


H3G is described as a ‘maverick’ in EC competition law parlance. Although H3G has, for many years, been the least restrictive provider of mobile/wireless data services in the UK (in terms of data allowances and in terms of the types of usage permitted), and although H3G (according to Ofcom’s own statistics at paragraph 4.17 of Annex 6, and despite having a right-of-user over only 9% of the spectrum available for 3G) carries 50% of all UK mobile data traffic, and although we understand that H3G offers competitive retail offers for voice, SMS and data, H3G has not been able to attract a large number of users.

This begs the question as to whether other factors impede take-up of the ‘maverick’s’ services, and whether reliance on the existence a single ‘maverick’ today is appropriate to preserve competition going forward and to achieve socio-economic benefits in the long run. It also begs the question as to whether Ofcom’s proposals are sufficient to enable the existing ‘maverick’ to retain its ‘maverick’ positioning over the period of validity of the 800 MHz and 2500-2600 MHz spectrum licences.

4. Geographic coverage limitations exacerbate the problem of limited choice for unrestricted mobile/wireless Internet access

In the geographic areas of the UK where mobile coverage is limited (not to mention absent), unrestricted mobile/wireless access to the Internet is often

² For details, please refer to Skype’s response to Ofcom’s 2010 consultation on ‘traffic management and net neutrality’ - <http://stakeholders.ofcom.org.uk/binaries/consultations/net-neutrality/responses/Skype.pdf>



unavailable, given that the providers present in those areas often do not provide unrestricted mobile/wireless access to the Internet.

Ofcom's approach to 'voice not-spots' (also addressed by Question 6.4 and Ofcom's reference to separate initiatives) surprises us, as it broadly proposes a focus on voice, broadly accepts the status-quo, and it is difficult to see how Ofcom's approach will enable the situation in remote areas to be improved, thereby potentially leaving large parts of the UK population in a chronic situation of digital divide, and hence at a serious socio-economic disadvantage.

Enabling *unrestricted* mobile/wireless *Internet* access (which enables voice) is an imperative also in the geographic areas where coverage is currently limited.

Skype expresses its surprise that the proposals put forward by Ofcom do not even refer to the decision of the FCC³ in the United States to attach openness conditions to a key sub 1 GHz spectrum block (22 MHz "C Block" - 746–757 MHz and 776–787 MHz), or to the 2009 consultation on high speed mobile of the French ARCEP⁴, which explicitly asked for input on risks relating to restrictive behaviour/closed networks. Skype responded to ARCEP's consultation, and Skype's points (submitted to ARCEP in English) are reflected extensively in ARCEP's consultation report of January 2010⁵.

On the basis of the above, Skype asks Ofcom to:

1. Confirm an approach which guarantees the existence of at least 4 credible "national wholesalers", augmented by assurance that each of these "national wholesalers" will benefit from a minimum of 2x15 MHz sub 1 GHz spectrum each (as opposed to the 2x5 MHz minimum put forward by Ofcom), irrespective of their holdings of supra 1 GHz spectrum.


A 2x15 MHz sub 1 GHz minimum is essential to avoid maintaining a structural spectrum deficit for the existing 'maverick' (which otherwise may not be able to sustain its chosen positioning) and is essential to attract any new entrant.

2. Put in place spectrum licence conditions ensuring that each "national wholesaler" having access to sub 1 GHz radio spectrum is subject to a 'live access obligation' (as opposed to a 'dormant access obligation') to provide *wholesale* national roaming and MVNO access to any interested party (not just to other spectrum

³ http://en.wikipedia.org/wiki/United_States_2008_wireless_spectrum_auction

⁴ http://www.arcep.fr/uploads/tx_gspublication/consult-thtdebit-mobile-050309.pdf

⁵ http://www.arcep.fr/uploads/tx_gspublication/synt-thtdebit-mobile-150110.pdf



holders) in a manner which enables such interested parties to provide (among others) retail *unrestricted* mobile/wireless *Internet* access.

The '*live access obligation*' is essential to ensure that *unrestricted* mobile/wireless *Internet* access is effectively available *at all* in the UK for the period of validity of the spectrum licences.

In case Ofcom were to decide against imposing such spectrum licence conditions, Skype asks Ofcom to put in place equivalent spectrum licence conditions at least on the most attractive of the 800 MHz spectrum lots (and if possible also on the holders of 900 MHz spectrum).

3. Require all holders of sub 1 GHz radio spectrum to provide *retail unrestricted* mobile/wireless *Internet* access.

The '*retail obligation*' is essential to ensure that *unrestricted* mobile/wireless *Internet* access is effectively available *on a genuinely competitive basis* in the UK for the period of validity of the spectrum licences.

4. Revise its approach to geographical coverage, at the very least to ensure that this approach is not limited to 'voice non-spots', but instead takes into account citizens', businesses', and public administrations' critical needs for unrestricted access to the Internet (which enables voice).

The Internet is an essential vector for citizen freedom of speech and participation, and is an essential vector for socio-economic benefits even in the most rural and remote areas, notably to retain existing activity and develop new socio-economic activity in those areas. Therefore, Government policy and regulatory decision-making should provide for unrestricted Internet access, anywhere in the UK.

5. Take a radically different approach on 2500-2690 MHz shared use, in a manner which does not restrict the number of users of this spectrum (see our responses to consultation questions in Section B. below).

The unrestricted shared use of 2500-2690 MHz spectrum is essential to provide continued stimulus for innovation and competition, experimentation with, and commercial implementation of, new models of non-exclusive spectrum usage based on evolving technological capabilities. This is without prejudice to enabling use of 'white spaces' in 470-790 MHz, opening further bands (low and higher) for unlicensed usage, etc.



B. Answers to Consultation Questions

Question 4.1: What use, if any, would you make of the top 2x10 MHz of the 800 MHz band in the second half of 2012 if it were available for use? What would be the benefits for citizen and consumers of such availability?

No comment.

This question concerns co-existence with PSME for a short period from 1 July 2012 until 31 December 2012.

Question 4.2: If we were to offer shared access low-power licences in some way, do you have any comments on the appropriate technical licence conditions which would apply for the different options?

We have severe doubts on Ofcom's proposed approach to shared use of spectrum

Ofcom's proposed overall approach regarding 2500-2690 MHz shared use, which we address here immediately (even though we understand that Q4.2 is focused on technical licence conditions), appears to us as being seriously flawed.


Ofcom's proposed approach seems to imply including a predefined (= limited/capped) (aggregated) number of sharing users (including smaller sub-national RAN operators) within a major spectrum auction, with no guarantees of sharing users securing the right to use shared radio spectrum.

We understand that Ofcom's proposals would limit shared use to a particular block ('Block D'), and that the outcome of the auction could range from 0 shared users, to 7-10 specifically identified shared users, if Ofcom's proposals on 'Block D' yield one of Ofcom's projected outcomes.

Our comments are as follows:

First of all, we see no intrinsic reason as to why shared use should be limited to a specific number of shared users (be they specifically identified or not). On the contrary, shared use should, in our view, not be limited to a specific number of users, other than by objective technical requirements to ensure satisfactory operation inside the relevant spectrum block.

We note in this context that the research commissioned by Ofcom from Real Wireless (Ofcom Project MC/073, which was published as part of this consultation) does NOT support Ofcom's approach to limit the number of shared access users. In fact the Real



Wireless report, in its executive summary (reproduced here) and in more detail at pages 29/30, specifically states (our emphasis added) that:


“Technically, there is no specific limit on the number of operators that could be licensed to use the shared access channel. Interference mitigation techniques need to operate successfully given the limiting case of an adjacent cell from another operator and this will occur even with two operators in the band. From a technical viewpoint, we see no reason why 7 overlapping networks in a 2x10MHz channel and 14 overlapping networks in a 2x20MHz channel could not be accommodated assuming that overlap of common control channels is the limiting factor and frequency partitioning is applied. This does not necessarily translate to a limit on the number of licensees as not all operators will deploy in the same areas and operators may find other solutions such as conditional roaming. Therefore the decision as to the number of licensees in the band is more of a policy decision based, for example, on the number of operators it would be practical to expect to work cooperatively to produce a code of practice.”

Regardless of Real Wireless’ findings, we advocate that reserving a block dedicated to shared use outside the auction procedure makes much more sense, notably to ensure that the block will not be controlled/affected by the large spectrum holders, and will be fully available to support a wide range of innovative usage cases.

We doubt that shared use within such a dedicated block would require power output limits as stringent as to require low-power use in all circumstances. Indeed, usage is likely to be dispersed on the UK territory, and higher power usage may not cause interference concerns in many cases.

We also believe that technology solutions (including geographic location databases, spectrum sensing features in equipment, etc.) are at or nearing sufficient maturity today, and will certainly be mature in the coming years, to adequately manage interference concerns among a wide range of users/equipment suppliers (and software suppliers for software-defined equipment) prepared to commit jointly to agreed interference management principles within particular spectrum bands (including at the border with individually licensed spectrum in the 2500-2690 MHz spectrum band).

On the basis of the above, we request a change in Ofcom’s position, enabling: (i) the issuance of a general authorisation on ‘Block D’ usage, subject to interference conditions to be agreed (and periodically updated) by the users of the relevant spectrum, (ii) the issuance of a general authorisation on shared use of further blocks between individual licensees in the 2500-2690 MHz bands and general authorisation users, subject to conditions on mutual interference management to be agreed (and periodically updated) by the users of the relevant spectrum blocks, and (iii) residual



Ofcom intervention powers, especially to address any anticompetitive behaviour and any cases of genuinely proven harmful interference.


We add that: (i) as long as the 2010-2025 MHz block remains unused/unsold, and (ii) should the block at 2570-2620 MHz remain unsold at auction or remain largely unused within 18 months after being sold at auction, the principles outlined above, i.e. general authorisation for shared use subject to conditions on mutual interference management to be agreed (and periodically updated) by the users of the relevant spectrum blocks, should be applied by Ofcom to these blocks as well.

Finally, we comment that Ofcom's proposals relating to shared-use/low power use (note that we deliberately did not refer to low-power use in our comments above, given that we think that Ofcom's proposals are too restrictive) seem to be strongly influenced by the UK's approach to the DECT-DCS1800 guard band, which was auctioned in the UK. The fact is that whilst that auction raised revenue from an identified number of licensees (which seems to influence Ofcom's reasoning on shared use licensees for the 2500-2690 MHz band), commercial deployment remains very limited in the UK, and is probably limited to +/-3 of the licensees. By contrast, in The Netherlands, the DECT-DCS1800 guard band has been made available to any user, subject to a simple notification requirement, and has been put into effective use by a wide variety of users (estimated to +/- 1000 deployments). The Netherlands Government has recently formally proposed⁶ to double the available band from 1782.5-1785 MHz to 1780-1785 MHz and to abandon the notification requirement. Evidence from The Netherlands indicates that the UK should at least give serious consideration to adopting a far more flexible approach to shared spectrum usage, and should not assume that 7-10 specifically identified licensees (bidding in an auction) represents the only way of assigning relevant spectrum. Note in this context that consultants to The Netherlands government on the DECT-DCS1800 guard band also referred to enabling 2500-2690 MHz options for shared spectrum to enable alternative mobile broadband solutions.

Question 5.1: Do you agree that national wholesalers need a reasonable overall portfolio of spectrum to be credible providers of higher quality data services? In particular, do you agree that national wholesalers need some sub-1 GHz in order credibly to be able to offer higher quality data services? Please state the reasons for your views.

We agree.

⁶ <http://www.rijksoverheid.nl/onderwerpen/frequentiebeleid/documenten-en-publicaties/besluiten/2011/05/10/ontwerpbesluit-tussentijdse-nfp-wijziging-in-verband-met-implementatie-strategische-nota-mobiele-communicatie.html>



We urge Ofcom in addition to adopt a decision which provides for a 2x15 MHz sub 1 GHz minimum for each of the “national wholesalers”.

Such a minimum is essential to avoid maintaining a structural spectrum deficit for the existing ‘maverick’ (which otherwise may not be able to sustain its chosen positioning) and is essential to attract any new entrant. In Section A. above, we have indicated our reasons for our views on this matter, including the need to ensure not only ‘higher quality data services’, but also to ensure the making available of wholesale offers (national roaming and MVNO access) to any interested party (not just to other spectrum holders) in a manner which enables interested parties to provide (among others) retail *unrestricted* mobile/wireless *Internet* access.

We also wish to comment that at paragraph 5.16, Ofcom speculates on the type of offers that may appear, but that the offers considered by Ofcom singularly fail to include Internet access (i.e. unrestricted mobile/wireless Internet access). As we have expressed in Section A. above, Ofcom should ensure, for citizen and socio-economic benefits to materialise, that *unrestricted* mobile/wireless *Internet* access is provided *at all*, and that such provision is *subject to competition*.


Question 5.2: Do you agree there is a material risk of a significant reduction in the competitive pressures, at least to provide higher quality data services, in retail and wholesale markets without measures in the auction to promote competition? Please state the reasons for your views.

We strongly agree.

A combination of outdoor + indoor mobile/wireless Internet access penetration is key, which justifies specific measures to prevent a significant risk of reduction in the competitive pressures at both the wholesale level and the retail level.

We urge Ofcom to adopt a decision which not only preserves/promotes competition for ‘higher quality data services’ in retail and wholesale markets, but that Ofcom also implements measures to provide for:

- a) a ‘live access obligation’ (as opposed to a ‘dormant access obligation’) to provide *wholesale* national roaming and MVNO access to any interested party (not just to other spectrum holders) in a manner which enables interested parties to provide (among others) retail *unrestricted* mobile/wireless *Internet* access.
- b) a ‘retail obligation’ to ensure that unrestricted mobile/wireless Internet access is effectively available on a genuinely competitive basis in the UK for the period of validity of the spectrum licences.



Such a ‘live access obligation’ and such a ‘retail obligation’ are essential to ensure that mobile/wireless Internet access is available *at all* (including in remote/rural areas) and that there will be *competition* between providers in delivering unrestricted mobile/wireless Internet access.

Question 5.3: Do you agree there is a risk of potentially beneficial sub-national RAN uses not developing without measures to promote competition? Please state the reasons for your views.

We agree.

Sub-national RAN deployments should be enabled and supported, however large or small (including as small as any end-user (citizen, business, public administration) deploying its own RAN independently of any large network operator). This is especially important to ensuring the availability of unrestricted mobile/wireless Internet access, including in currently underserved areas. Indeed, ensuring availability of unrestricted mobile/wireless Internet access is key, as we have indicated in Section A. above.


For our reasoning on this matter, please refer to our response to question 4.2, in which we stated that we see no intrinsic reason as to why shared use of spectrum should be limited to a specific number of shared users (be they specifically identified or not). On the contrary, shared use should, in our view, not be limited to a specific number of users, other than by objective technical requirements to ensure satisfactory operation inside the relevant spectrum block. This includes specialised operators choosing to focus on sub-national RAN deployment.

Question 5.4: Do you agree with the analysis that at least four competitors are necessary to promote competition?

Question 5.5: Do you agree that the specific measures we propose to take to ensure there are at least four holders of such spectrum portfolios are appropriate and proportionate?

Response to Q5.4: We agree.

Ofcom’s analysis is correct: an approach which guarantees the existence of at least 4 credible “national wholesalers” is necessary to promote competition. However, Ofcom also needs to ask itself what kind of competition it is seeking to achieve. Please refer to Section A. above, in which we indicate that widespread and competitive availability of unrestricted mobile/wireless access to the Internet should



be the relevant criterion, as opposed to the ‘higher quality data services’ criterion put forward by Ofcom.

Response to Q5.5: We disagree.

We believe that Ofcom’s proposed measures are insufficient. A minimum of 2x15 MHz sub 1 GHz spectrum guaranteed for each “national wholesaler” (as opposed to the 2x5 MHz minimum put forward by Ofcom), irrespective of their holdings of supra 1 GHz spectrum, is necessary to ensure that at least four holders of relevant spectrum portfolios are enabled to compete effectively on wholesale and retail markets, including for the provision of unrestricted mobile/wireless Internet access.

To be more specific: we do not agree with Ofcom’s proposed ‘spectrum floor’ (which contains several scenarios) given that it contains sub 1 GHz scenarios which we do not believe would ensure sufficient competition. 2x15 MHz sub 1 GHz spectrum available to each of the “national wholesalers” should be a minimum, irrespective of other spectrum holdings.


Question 5.6: Given the measures we propose to take to ensure four holders of spectrum portfolios sufficient credibly to provide higher speed data services, do you agree that it would not be appropriate or proportionate to introduce a regulated access condition into the mobile spectrum licences to be awarded in the combined award?

We disagree.

First of all (as expressed in Section A. above) we do not agree that ‘higher speed data services’ as mentioned in Q5.6 (or ‘higher quality data services’ as is the terminology used elsewhere in Ofcom’s consultation document) is the correct criterion. Such a criterion could lead to a market outcome wherein unrestricted (mobile/wireless) access to the Internet is negated, i.e. where only part of the Internet is made available for users (as is unfortunately the case today for most mobile users in the UK).

We urge Ofcom to adopt a decision which not only preserves/promotes competition for ‘higher quality/speed data services’ in retail and wholesale markets, but that Ofcom also implements measures to provide for a ‘live access obligation’ (as opposed to a ‘dormant access obligation’) to provide *wholesale* national roaming and MVNO access to any interested party (not just other spectrum holders) in a manner which enables such interested party to provide (among others) retail *unrestricted* mobile/wireless *Internet* access.

Such a ‘live access obligation’ (and a ‘retail obligation’ as well) are essential to ensure that mobile/wireless Internet access is available *at all* (including in



remote/rural areas) and that there will be *competition* between providers in delivering unrestricted mobile/wireless Internet access.

Question 5.7: Do you consider that we should take measures to design the auction to assist low-power shared use of 2.6 GHz? If so, what specific measures do you consider we should take?

We believe that Ofcom is misguided in proposing to include shared use of spectrum in the 2500-2690 MHz band in the spectrum auction for that band.


We advocate the designation of a relevant band (for example ‘Block D’) for shared use completely outside the auction process, to be subject to a general authorisation, i.e. not subject to the measures proposed by Ofcom on what it calls ‘low-power shared use’).

Please refer to our detailed comments on Question 4.2 above, in which we addressed the substantive aspects of shared such of spectrum in the 2500-2690 MHz spectrum band, including as regards power output.

In summary, we request a change in Ofcom’s position, enabling: (i) the issuance of a general authorisation on ‘Block D’ usage, subject to interference conditions to be agreed (and periodically updated) by the users of the relevant spectrum, (ii) the issuance of a general authorisation on shared use of further blocks between individual licensees in the 2500-2690 MHz bands and general authorisation users, subject to conditions on mutual interference management to be agreed (and periodically updated) by the users of the relevant spectrum blocks, and (iii) residual Ofcom intervention powers, especially to address any anticompetitive or otherwise discriminatory and harmful behaviour and any cases of genuinely proven harmful interference.

For the avoidance of doubt, we also reiterate here that the research commissioned by Ofcom from Real Wireless (Ofcom Project MC/073, which was published as part of this consultation) does NOT support Ofcom’s approach to limit the number of shared access users.

On the basis of the above, we also challenge Ofcom’s paragraph 5.122. Ofcom’s proposals, as presented in the consultation document, do NOT provide equality of opportunity, and should be modified to ensure that all competitors, and all users, do not face barriers in pursuing unrestricted Internet access.



Question 6.1: Do you have any comments on the proposal to include in one of the 800 MHz licences an obligation to serve by the end of 2017 an area in which 95% of the UK population lives, while providing a sustained downlink speed of 2Mbps with a 90% probability of indoor reception? Do you think there is another way of specifying a coverage obligation that would be preferable?

Whilst we welcome Ofcom's attempts to increase coverage obligations, and we recognise that taking coverage from 90% to 95% (not to mention to near 100%) represents a major challenge, we do have ideas for a preferable approach to increasing in coverage.

As we have stated in Section A. above, we suggest an obligation whereby ALL 800 MHz licensees (and if possible ALL 900 MHz licensees) are subjected to a national roaming obligation (towards each-other and towards any third parties). This requirement, if well designed (also including a more ambitious coverage/indoor reception obligation on ALL sub 1 GHz operators as opposed to a single operator as Ofcom puts forward) would enable a form of 'swapping for coverage', whereby operators would likely 'swap coverage' ("I cover this area, you cover that area, we swap, and we both meet our obligations").

Overall, imposing a national roaming requirement combined with a more ambitious coverage requirement on ALL sub 1 GHz operators should, if well-designed, yield economies of co-ordination, beneficial to users, and likely to the operators as well, as they would serve users which would otherwise remain un/underserved.


Question 6.2: We would welcome views and evidence on the costs and benefits of imposing an additional coverage obligation focussed on particular geographical areas, and if such an obligation were to be imposed what might be the appropriate specification of geographic areas?

No comment.

Please refer to our comments and suggestions on Question 6.1.

Question 6.3: Do you have any comments or evidence on whether an additional obligation should be imposed to require coverage on specific roads?

No comment (although in many EU Member States, road coverage was specified in GSM and UMTS licences, and could conceivably be included in UK 800 MHz spectrum licences).



Question 6.4: Do you have any comments on our proposal not to use the combined award to address existing not-spots?

Ofcom's approach to 'voice not-spots' surprises us, as it broadly proposes a focus on voice, broadly accepts the status-quo, and it is difficult to see how Ofcom's approach will enable the situation in remote areas to be improved.

Enabling unrestricted mobile/wireless Internet access (which enables voice) is an imperative also in the geographic areas where coverage is currently limited.

Ofcom/UK Government/local authorities should explore mechanisms (e.g. PPP- or publicly-funded fibre/radio backhaul) for (new) base station deployments to ensure that any public funding is directed towards future-proof backhaul, enabling unrestricted mobile/wireless Internet access (which enables voice).

Question 6.5: Do you have any comments on our proposal not to impose 'use it or sell it' obligations but to consider including an additional power to revoke during the initial term of the licences?

We are very sceptical on this Ofcom proposal.


Technology development over the next 10-15-20 years may well justify substantial reconsideration of all radio spectrum policy, based on silicon and software development enabling far more efficient use, far better interference management, etc.

Ofcom's proposals entail a risk of entrenching incumbent interests, which could prevent legitimate reconsideration. This is especially the case where radio spectrum remains unused.

On the basis of the above, we strongly urge Ofcom to reconsider, and in fact include in any spectrum licence, an additional power to revoke especially unused spectrum (in space/time) during the initial term of any licence.

Question 7.1: Do you have any comments on the proposals relating to the duration of the initial licence period, our rights to revoke the licence during this period, the charging of licence fees after the end of the initial period and our additional revocation powers following the initial period?

We disagree with these proposals, especially inasmuch as they enable spectrum allocation which is essentially indefinite in time.



These proposals (and the UK's already implemented decisions relating to the 2.1 GHz band) entail serious risks of entrenching a particular industry model (and indeed a specific market structure – including specific market participants which benefit from having entered the market in the past).

Indefinite spectrum licences (extended to existing spectrum licence holders) seem difficult to reconcile with the EU regulatory framework. Furthermore, it seems highly unwise for the UK authorities to confirm/extend indefinite spectrum licences at a time when advances in silicon-based signal processing are beginning to enable software-defined and cognitive radio technologies, which can operate across (and aggregate/bond) a wide range of frequency spectrum, and which can deal much more efficiently/intelligently with potential interference, etc.

The potential of the technologies identified above is great, but it is also clear that ALL sub 1 GHz bands in particular will continue to represent a 'sweet-spot', together with large swathes of spectrum ranging from 1710 MHz (lower edge of DCS1800) up to 2690 MHz (top edge of the 2500-2690 MHz band), for providing broadband Internet access to support capacity needs.


On the basis of the above, we believe that it would be far more prudent for the UK authorities/Ofcom, to restrict the duration of all exclusive spectrum licences to 15 or 20 years as an absolute maximum. Any procedure thereafter should not be designated as a 'reassignment' (Ofcom's terminology in this consultation) but as a full and unrestricted assignment.

Question 7.2: Do you have any comments on the proposal to amend the spectrum Trading Regulations to apply to the auctioned licences in the 800 MHz and 2.6 GHz bands, to include a competition check before we consent to a spectrum trade of mobile spectrum and not to allow transfers that would increase the number of 2.6 GHz low-power licensees?

We agree.

A competition check is essential. The competition check should include verification as to whether unrestricted access to the Internet is available and competition for mobile/wireless access to the Internet is maintained.

As to the 2.6 GHz shared spectrum, we fail to see on which grounds Ofcom would justify limiting any *increase* of the number of licensees, including as part of any trading regime. Ofcom seems to be intent on organising a 'market structure' for a specific number of 'low-power' licensees. We fail to see which public interest or overall welfare interest is being pursued by Ofcom in putting forward these policies.



Question 7.3: We welcome views on the merits of the proposed approach to information provision; in particular concerning the type of information that may be helpful and any impacts that publication of information might have both on licence holders and the wider spectrum market.

We agree with Ofcom's proposals, which are in fact quite modest. They should presumably be seen in the light of Ofcom's other statutory information gathering powers.

Question 8.1: Do you agree with the way in which we are taking account of the main factors relevant to spectrum packaging and why?

Question 8.2: Are there other factors that we should consider to develop our approach to packaging? If so which ones and why?

Question 8.3: Do you agree with our packaging proposals for the 800 MHz band? Please give reasons for your answer.

Question 8.4: Do you agree with our proposal not to allow relinquishment of 900 MHz spectrum and why? Do you have any other comments regarding our packaging proposals for the 900 MHz band?

Question 8.5: Do you agree with our proposal not to allow relinquishment of 1800 MHz spectrum and why? Do you have any other comments regarding our packaging proposals for the 1800 MHz band?


No comment, although we believe that it would be far more prudent for the UK authorities/Ofcom to restrict the duration of ALL exclusive spectrum licences to 15 or 20 years as an absolute maximum. Any procedure thereafter should not be designated as a 'reassignment' (Ofcom's terminology in this consultation) but as a full and unrestricted assignment.

Question 8.6: Do you agree with our proposal not to make provisions to include 2.1 GHz spectrum in this auction and why?

We agree. The 2.1 GHz licence term has not expired.

Question 8.7: Which aspects of our packaging proposals for the 2.6 GHz band do you agree with and why?

We disagree with Ofcom's proposals relating to shared use.



Please refer to our extensive responses to Q4.2 and Q5.7 above in particular.

Question 8.8: Do you agree with our proposed approach for eligibility points and why?

No comment, although we observe that reference to the 2500-2690 MHz auction in The Netherlands was omitted by Ofcom.

Question 8.9: Which approach to reserve prices do you think would be most appropriate to secure optimal spectrum use in the interests of citizens and consumers, and why?

No comment, although we reiterate our arguments above to the effect that a block of 2500-2690 MHz spectrum should be excluded from the auction, and that principles on shared use should also be applied on licensed bands.

Question 9.1: Do you agree with our proposals for the auction design and why?

Question 9.2: Do you have any comments on the proposed auction rules as explained in section 9, Annex 9 and Annex 10?

Question 9.3: Do you have any comments on how we should approach the payment of deposits and licence fees?


We agree with Option 3: spectrum should be reserved to ensure at least 4 “national wholesalers”, subject to the additional conditions we have outlined in Section A. above.

Question 10.1: Do you have any comments on our proposal to use 800 MHz price information as derived from the auction to estimate the full market value of 900 MHz spectrum?

Question 10.2: Do you have any comments on our proposal to use an average of 800 MHz and 2.6 GHz price information as derived from the auction to estimate the full market value of 1800 MHz spectrum?

Question 10.3: Do you have any comments on the proposed approach to convert lump sum amounts into annual payment?

No comment, although we do wish to express our concern that Ofcom’s proposals may well entrench the current market structure. This market structure has delivered only 1 or perhaps 2 providers of unrestricted mobile/wireless access to the Internet,



and only in the areas where multiple network operators are present. If Ofcom's proposals are adopted unchanged, there is a great likelihood that they will not enable to meet the expected socio-economic benefits from spectrum allocation.

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More generally, we also wish to comment that Annex 6, paragraphs 6.52 to 6.55, entitled 'Broader social value' singularly fail to consider the wider benefits of unrestricted mobile broadband Internet access, and that Ofcom should fundamentally revise its approach to the objectives it is pursuing in making available frequency spectrum.

As we have stated in Section A. above: Internet access (not only 'higher quality data services') is key for the achievement of socio-economic benefits, and 'higher quality data services' alone are not likely to deliver the benefits expected by Ofcom. Therefore Ofcom needs to enhance its proposed measures, along the lines of Skype's advocacy in this response to Ofcom's consultation.

Should you require any additional information with regard to the contents of this response, please do not hesitate to contact us. We would be happy to engage with you to discuss in more depth the points raised here.

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Yours faithfully,

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