



Spectrum Trading and Wireless Telegraphy Register Regulations

Statement

Issued: 2 December 2004

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Section 1

Summary

- 1.1 This document addresses comments raised in response to the notice of Ofcom's proposals to make Spectrum Trading Regulations and Register Regulations, published 29 September 2004.
- 1.2 This document does not contain any new policy proposals. However, it does aim to provide clarity in relation to a number of points highlighted by respondents. This includes answering questions on the circumstances in which a trade can be authorised and Ofcom's reasons for giving, or not giving, consent to a trade. It also explains how guidance notes will be issued to provide more detail on the process set out in the regulations. In addition, the document provides further background on the scope of the information to be included on the registers which will be published on Ofcom's website. Finally, it comments on points made in relation to the Regulatory Impact Assessments (RIAs) which accompanied the draft regulations.
- 1.3 Most of the points raised by respondents, which are addressed in this document, have not resulted directly in any amendment being made to the regulations. However, where any such amendment has been made, this is explained. The amended draft spectrum trading and register regulations are included at Annex 1 and Annex 2 respectively to this document. The final RIAs are included at Annexes 3 and 4.
- 1.4 It is expected that the regulations will enter into force on 23 December 2004 from which time licensees in the relevant licence classes will be entitled to trade.

Section 2

Background

- 2.1 In August 2004, Ofcom published a statement on Spectrum Trading¹ which explained that trading would be introduced in the UK through a phased approach, starting from the end of 2004. The statement set out the licence classes that will be included in the first phase of trading and explained the types of transfer that will be permitted for each of these classes. The statement also described the process that should be followed to enact a trade and set out the reasons why Ofcom may refuse to consent to a trade. In addition, the statement explained the steps that Ofcom will take to facilitate the trading process, including publication of relevant information in a wireless telegraphy register and modification of certain licences.
- 2.2 In order to legalise spectrum trading, Ofcom must make regulations under the powers conferred by section 168 of the Communications Act 2003 (the "Act"). In addition, in order to establish and maintain the wireless telegraphy register, Ofcom must make regulations under section 170 of the Act. Ofcom issued a statutory notice of our proposals to make these regulations on 29 September 2004² and invited comments by 1 November 2004.
- 2.3 In the notice, Ofcom set out the general effect of the proposed Trading Regulations and proposed Register Regulations. We explained the types of transfer that would be permitted, the circumstances under which trades will not be authorised and described the transfer process as set out in the regulations. We also explained the specific information that Ofcom intends to publish in the Register of Licences. Finally, the notice also included two Regulatory Impact Assessments: one each for the Trading Regulations and the Register Regulations.
- 2.4 Ofcom received 12 responses to the notice of proposals to make regulations and the points raised by respondents have been considered by Ofcom. Where appropriate, the regulations have been amended to take account of these comments. This document set outs the main comments raised by respondents and explains Ofcom's response to each of these points.
- 2.5 A copy of the amended draft Spectrum Trading Regulations is enclosed at Annex 1, while the amended draft Spectrum Register Regulations is at Annex 2. In addition, the Regulatory Impact Assessments for both regulations are enclosed at Annex 3 and Annex 4 respectively. It is expected that the regulations will enter into force on 23 December 2004.

¹ http://www.ofcom.org.uk/consultations/past/spec_trad/statement/

² http://www.ofcom.org.uk/consultations/past/spt_wtr/2spt_wtr/?a=87101

Section 3

Comments on the Trading Regulations

Introduction

3.1 This section identifies points raised by respondents to the consultation on the Trading Regulations and sets out Ofcom's response to these points. It does not seek to explain how the regulations will work as this was done in the trading statement published on 6 August 2004 and, more specifically, in the consultation on the draft regulations published on 29 September 2004. This section does however explain where any changes have been made to the regulations as a result of the comments received.

Giving consent to a trade

3.2 Some respondents proposed that Ofcom should commit to an obligation to consider comments received from third parties before we give (or refuse) consent to a trade. Ofcom has already explained that we do not intend to carry out formal consultation prior to consenting to a trade as we consider that this would unnecessarily slow down the trading process and reduce the benefits available from trading. Further, it is not clear to Ofcom that we have power to include such an obligation in the regulations themselves.

3.3 Ofcom has clearly set out in the regulations the factors that Ofcom will take into account in determining whether or not to consent to a trade (regulation 9). Ofcom explained in the statement on spectrum trading that it was our intention to limit the reasons as to which we would not consent to a trade to the minimum necessary.

3.4 Ofcom believes that the reasons why a trade may not receive consent, as set out in the regulations, are quite clear. Nonetheless, Ofcom understands that third parties may wish to comment on proposed trades once they have been notified on the register. Third parties are welcome to submit such comments and Ofcom will take into account any information supplied by third parties, which is relevant to the matters set out in the trading regulations, in reaching our decision. This will not constitute a formal consultation but will provide a mechanism through which third parties can make relevant comments. Ofcom will explain in guidance notes how any such comments should be submitted.

3.5 It was suggested by one respondent that Ofcom should extend the list of reasons under which we will not consent to a trade to prevent anyone found guilty of offences under the WT Act from engaging in a trade. Ofcom does not consider that such a condition is necessary. We have included a condition (regulation 9d) requiring that the transferee is able to meet any criteria relating to the persons to whom a wireless telegraphy licence of the class being transferred may be granted. This means that the criteria for obtaining a licence through trading are the same as those for obtaining a licence direct from Ofcom. In any case, where a criminal offence would be taken into account by Ofcom when granting a licence, it will also be a matter which can be taken into account for the purposes of consenting to a transfer.

3.6 It was also suggested that Ofcom should have an obligation to take account of the impact on consumers that are using the spectrum which is subject to the trade. The concern seems to be that a new licensee may choose not to support certain existing equipment, thus potentially disadvantaging consumers that may have purchased equipment which subsequently becomes redundant.

- 3.7 In reality, this type of situation could arise now. It does not require a spectrum trade for a licensee to decide that it is no longer economically worthwhile to support particular equipment or a particular customer service. Indeed the aim of spectrum trading, when combined with liberalisation, is to allow market forces to promote the most efficient use of spectrum. This could potentially mean that some less popular services cease to be supplied but should result in innovation, more choice and cheaper prices for more popular services. Thus, Ofcom believes that spectrum trading and liberalisation will deliver benefits to the vast majority of consumers. We will monitor the development of the market to check this is the case and will act quickly to review our approach in the unlikely event that it is not.
- 3.8 A key issue in relation to the introduction of spectrum trading is the need to ensure that it does not result in competition being distorted. Ofcom issued a separate consultation on this point to ensure it was given full and proper consideration, especially on whether an ex ante competition check should be included as part of the trading process. As a result of this consultation, Ofcom concluded that it was sufficient to rely on existing legislation (primarily the Competition Act 1998) to deal with any distortion of competition that may arise and that consequently no new competition check need be included as part of the trading process³.

Authorisation of a trade

- 3.9 There was less comment from respondents concerning the circumstances in which a transfer is not authorised, as set out in regulation 7. However, one point that was raised concerned why Ofcom would not authorise a trade when a future fee instalment was still to be paid.
- 3.10 As set out in Ofcom's Statement on Spectrum Trading, Ofcom decided that the transfer of rights and obligation under a licence should not trigger payment to Ofcom of additional licence fees nor repayment to a transferor of any fees already paid. As a consequence of that Ofcom must ensure that all fees which are owing to it have been paid in full before a transfer takes place. This will be the case for licence fees paid to Ofcom when they fall due as a lump sum at the start of the year (or other licensing period) or (where the option is permitted by applicable legislation) in instalments. The rights transferred under a licence will include the transferor's rights which arise from having paid the licence fee. A transferor will be free to take into account licence fees which have been paid by the transferor when agreeing the consideration for any transfer with the transferee. Indeed, Ofcom believes that such an approach will be less administratively burdensome for both Ofcom and licensees than having to calculate, repay and charge new fees at the time of a transfer.
- 3.11 A more specific point, raised by a couple of respondents, was that Ofcom should make it clear that regulation 7(f) should explicitly refer to the reasons given in regulation 9 which explain why consent may not be given. Ofcom agrees with this point and has amended regulation 7(f) to refer to regulation 8(3)(a) which in turn refers to regulation 9.

Directions by Ofcom

- 3.12 Regulation 10 explains that Ofcom can give consent to a trade subject to certain conditions being met. One respondent suggested that this regulation should make it clear that any such conditions, issued by Ofcom as part of a

³ <http://www.ofcom.org.uk/consultations/past/sec/statement/>

consent, may be ongoing. However, this is not the case. Ofcom is unable to impose forward looking conditions through a Direction and instead would need to impose such obligations through a licence condition. For this reason, the regulations do not refer to ongoing conditions in regulation 10.

Definition of 'concurrent' holder

- 3.13 A question was raised by one respondent as to whether the definition of 'concurrent licence holder' was circular. Ofcom has carefully considered these arguments but remains of the view that the definition given in regulation 4 is consistent with the wording used in the Act. We have considered other forms of wording suggested by respondents but do not consider these to have any advantage over Ofcom's definition.

Structure of the regulations

- 3.14 There was a proposal, from at least one respondent, that the regulations could have been structured differently. Ofcom accepts that there is more than one way of drafting the regulations and that others may consider alternative approaches better. However, Ofcom believes that the regulations as currently drafted are clear and consequently we do not consider it would be desirable to consider alternative structures at this late juncture.

Timing constraints

- 3.15 Ofcom has explained in previous documents that we will publish targets which Ofcom will aim to meet in deciding whether or not to consent to a trade. These targets will be issued in guidance notes and will provide the industry with an expectation as to the maximum amount of time the trading process is likely to take.

Use of guidance notes

- 3.16 At least one respondent raised a concern that guidance notes can be amended relatively easily. Instead, they proposed that Ofcom should set out more details, such as timescales, in regulations as these were much more rigid and, they believed, provided more certainty. However, other respondents disagreed and emphasised the importance of Ofcom being able to learn from experience and revise the approach to trading as necessary. These respondents seemed to consider that the balance Ofcom had developed between regulations and guidelines was about right.
- 3.17 A question was raised as to whether Ofcom would consult on the guidance notes prior to them being finalised. Ofcom does not consider that such consultation is necessary as the guidance notes will largely reflect policy that has already been consulted upon. Nonetheless, we anticipate that the guidance notes will be an evolving document which may need to be amended as our experience of trading develops. As such, we will consider comments at any time on the guidance notes and will work with the industry to ensure that they are kept up-to-date and are as useful and relevant as possible.

Reviewing the regulations

- 3.18 It was suggested that Ofcom should commit to reviewing the regulations, as well as presumably the guidance notes, to a published timescale. Ofcom does not believe this is necessary. The regulations have been subject to extensive consultation and reflect our best view, at the current time, as to the optimal approach to the development of an effective trading market.
- 3.19 We have explained above that Ofcom is prepared to adapt our approach as necessary as our experience of trading develops. However, it is not clear

when such changes will be necessary and consequently we do not consider it would be helpful to commit to a timetable for a review at this early stage. Further, Ofcom has already explained that in 2005, and in subsequent years, we intend to extend the scope of trading to new licence classes as well as expanding the types of trade permitted. In order to do this, Ofcom is required to consult on changes to the Trading Regulations and we will give stakeholders the opportunity to comment on aspects of the existing regulations at the same time.

Trading of spectrum used by the Emergency Services

- 3.20 There has been some concern that the introduction of spectrum trading will lead to a reduction in the amount of spectrum available for use by the emergency services. Ofcom does not believe that there is any risk of such a situation arising as no spectrum user will be forced to trade and consequently there is no reason to believe that any user will have access to any less spectrum than they currently have. In fact spectrum trading will simply give spectrum users the new opportunity to buy additional spectrum where required and sell spectrum which they do not need.
- 3.21 Nonetheless, Ofcom is keen to provide assurance that spectrum trading will not lead to an unacceptable degradation in the quality of spectrum used by the Emergency Services. To achieve this, Ofcom will draw up a list, in co-ordination with the Public Safety Spectrum Policy Group (PSSPG) of spectrum which is assigned for emergency use by the Emergency Services. Ofcom will keep the PSSPG apprised of relevant spectrum trades as they are notified to Ofcom.

Section 4

Comments on the Register Regulations

Introduction

- 4.1 This section identifies points raised by respondents to the consultation on the Register Regulations and sets out Ofcom's response to these points. It does not seek to explain how the regulations will work as this was done in the Trading Statement published on 6 August 2004 and, more specifically, in the consultation on the draft regulations published on 29 September 2004.

Scope of information

- 4.2 Respondents had differing views as to the amount of information that should be available on the register. On the one hand, some respondents suggested that, for trading to be successful, it was essential that the register contained as much information as possible. On the other, some respondents raised concerns over the security implications of publishing potentially sensitive information and urged Ofcom to demonstrate caution in terms of what is made available.
- 4.3 Much has already been written on the scope of information to be available on both the trading register and the register of licences. In developing our proposals, Ofcom has been very aware of the need to balance demand for more information with the need not to disclose security or commercially sensitive information. Ofcom has taken close account of the views of stakeholders in developing this policy and believes that our approach represents the optimal balance between these two contrasting positions.

Accuracy of information

- 4.4 Some concern was also raised about Ofcom's proposals to include a 'health warning' on the database which, it was suggested, will limit the usefulness of the information the database contains. The decision to include a 'health warning' represents a balance between the need to publish information quickly whilst also trying to ensure accuracy. Clearly, Ofcom will do as much as we can to try to ensure the information on the registers is accurate, but it is simply not feasible for us to provide guarantees to this effect.
- 4.5 Ofcom has previously explained that, to facilitate the trading process, Ofcom will be willing to assist in the due diligence process. Ofcom will publish, in its guidance note on spectrum trading, a checklist of matters on which it will be willing to advise potential licensees interested in acquiring a licence. In all cases, Ofcom will only disclose this information after first obtaining the agreement of the current licensee.

Ownership rights

- 4.6 Some concern was raised as to the status of information on the register and whether it might somehow act to create new 'ownership' rights. Ofcom confirms that the register will not create any new rights as these will be set out, as has always been the case, in the licence. As explained above, Ofcom will be willing to provide assistance through the due diligence process to provide information about licensed rights to potential purchasers should the licensee consent to us doing so.

- 4.7 Clearly, however, Ofcom may not be aware of agreements which a licensee may have entered into with third parties falling outside the scope of the licence. It is for the parties concerned to consider the implications that any such agreements may have on any proposed trade.

Helpline

- 4.8 Ofcom explained in previous documents that, in the fixed links class, certain detailed geographic information would be withheld from the register due to concerns over the security implications of making such information publicly available on a wide scale. We have further explained that, in order to facilitate trading in fixed links, Ofcom proposes to establish a helpline facility which will enable interested parties to find out details about fixed links they are interested in trading.
- 4.9 Some respondents to the consultation questioned how this helpline would work in practice and whether Ofcom would seek agreement from the licensee before supplying geographic information to third parties contacting the helpline.
- 4.10 Ofcom has discussed this issue with the industry through the fixed link consultative committee (FWILP). This committee agreed that the information given out over the helpline would be limited in scope, covering just the user and link reference, but that no consent would be sought before this information was disclosed to helpline users. More details about the data available through the helpline will be set out in the guidance note on spectrum trading.

Identities recorded on the database

- 4.11 Some respondents raised a question as to how the identity of a user would be recorded on the registers. In all cases, the name that appears on the licence is the one that will be recorded on the register. This means that if the licence is issued in the name of a subsidiary of a larger company, it will be the subsidiary that appears on the register.
- 4.12 This also means that third parties, such as agents, cannot appear on the register on behalf of a licensee unless they themselves are the named licence holder (as may be the case with some spectrum management organisations). However, licensees will, if they so wish, be able to provide the contact details of their agent or broker on the register who can thus act on their behalf in relation to all enquiries concerning the licence.

Period information remains on the web site

- 4.13 One question was raised as to the period of time that information about specific trades would be publicly available. Ofcom explained in the statement on spectrum trading that, once a transfer has been completed, information required by regulation 8(6) to be published will remain on the register for one year. Of course, the new licence holding will be reflected on the wireless telegraphy register.

Name of the register

- 4.14 Finally, there were some views from respondents as to what the spectrum register should be called. Ofcom has designed a new section of the Ofcom web site, accessible from the Ofcom home page which contains all the information relating to spectrum trading and liberalisation. Ofcom is currently deciding on a name for this area of the web site.

Section 5

The Regulatory Impact Assessments

Introduction

- 5.1 In addition to the points raised by respondents in relation to the regulations, a couple of comments were also received relating to the Regulatory Impact Assessments (RIAs) which accompanied the regulations. These comments are addressed below.

Measurement of changes in welfare

- 5.2 One respondent to the consultation disputed the way changes in welfare were measured in the RIAs. Specifically, they questioned whether it was appropriate to use the difference between the valuations of the buyer and seller in a trade as a measure of the change in welfare. Ofcom accepts that the change in welfare resulting from a spectrum trade is strictly speaking the sum of the changes in producer and consumer benefits. Moreover, the change in producer benefits includes both service providers and equipment manufacturers. However, Ofcom believes that, for reasons described below, it was appropriate to use the change in value between the buyer and the seller as a proxy for the change in welfare.
- 5.3 First consider simple transfers of spectrum with no associated change of use. If competition is not distorted, an efficient trade between service providers will lead to an increase in producer benefits. Absent there being an impact on competition, consumers will not be worse off. Since the market is competitive then it should be impossible for the acquirer of the spectrum to raise prices (or reduce quality), and they may be able to reduce prices (or improve quality), for example because they are more efficient than other suppliers. Consumers may even be better off, if the buyer is a more efficient supplier than the seller and passes on reductions in price to the consumer.
- 5.4 If the source of the efficiency gain is lower cost equipment, then some of the increase in downstream producer (service provider) or consumer benefits may be at the expense of a reduction in upstream producer (e.g. manufacturer) benefits. Nonetheless, if the total costs of supply are reduced then total welfare must still increase. The only scenario in which a reduction in upstream surplus might lead to a reduction in total benefits is where the upstream benefit is being kept artificially high through the exercise of market power (by the upstream supplier). In this case it may be possible, in the short term, for inefficient suppliers in the upstream market to capture market share through spectrum trading, but Ofcom does not believe that this would persist in the long term – there would be every incentive for the efficient suppliers to reduce their prices, to maintain their position in the upstream market (thereby maintaining or increasing total welfare, albeit at the expense of a transfer to downstream markets or end consumers).
- 5.5 Therefore, for simple transfers of spectrum Ofcom believes that its estimation of the benefits of spectrum trading is sound and may even be an underestimate.

- 5.6 Second consider a trade associated with a change of use of the spectrum (where spectrum is liberalised). Assuming that the relevant downstream markets are competitive and the trade is made on a rational basis, the value of the spectrum in the new use should be higher than in the old. This could mean that either:
- output is the same but that overall costs are lower - e.g. costs fall for the buyer more than they increase for the seller.
 - output is higher - e.g. the seller's output falls but by less than the buyer's increases.
- 5.7 Once again, absent any impact on competition, if output is the same and costs lower then, consumers will not be worse off and producer benefits will increase.
- 5.8 It is possible that the seller may reduce its output after a trade, although Ofcom believes this will seldom happen because other inputs will usually be substituted for spectrum. In the event that the seller does reduce output, then even though the producer benefits increase, consumer benefits may fall due to differences in the demand curves for the buyer and seller products. It is possible in this situation that consumer benefits fall by more than producer benefits rise. Ofcom believes that this situation is unlikely to happen often as it depends on a particular combination of factors which are likely to occur only rarely. Therefore Ofcom does not accept that our method for estimating the benefits of spectrum trading is inappropriate, even when change of use is considered. Moreover Ofcom reiterates our belief that changes in competition will have the greatest impact on consumer benefits as a result of spectrum trading; an outline estimate of these benefits was given in the RIAs.

Impact on end users

- 5.9 Another response claimed that the RIAs did not take adequate account of the impact on end-users. Ofcom accepts that in the event that a provider exits the market after selling their holding of spectrum, some end-users may be affected, particularly if their equipment is no longer supported. However, providing markets are competitive, and that the trade does not distort competition, welfare will not decrease. There may be transfers between different groups of consumers, and this may have wider equity implications, but overall welfare will not decrease.
- 5.10 However, discontinuation of service as a direct result of a spectrum trade is likely to be rare. For example, a service may have become commercially unviable anyway, or there may be other providers of similar services. It is important that any transition in these cases is handled as smoothly as possible, but this is not strictly a matter for an RIA. Ofcom believes that overwhelmingly, end-users will benefit from trading through its impact on competition and innovation.
- 5.11 Clearly our conclusions are to some extent dependent on the successful maintenance of competition following the introduction of spectrum trading. Ofcom consulted specifically on this topic earlier this year. Following that consultation, Ofcom concluded that sufficient controls were already in place to protect competition⁴. We therefore do not consider it necessary for us to

⁴ <http://www.ofcom.org.uk/consultations/past/sec/statement/>

consider any reduction in consumer welfare that might arise if competition were compromised in our overall RIA for spectrum trading.

- 5.12 Finally, note that, in order to be consistent with the valuations in the Spectrum Pricing Consultation⁵, some of the licence values in the RIA have been amended and this has had a minor impact on the overall benefits and costs. This does not however affect any of the conclusions in the RIA. The final versions of the RIAs are attached at Annexes 3 and 4.

Measuring the impact of trading

- 5.13 A question was also raised as to the appropriateness of the indicators that Ofcom proposed to use in the RIAs to monitor the success of spectrum trading. One respondent suggested that alternative measures, such as the amount of spectrum being used, may be preferable. Others suggested that Ofcom should not at this stage attempt to pre-determine how to measure success as they considered that the best approach may only become clear over time.
- 5.14 Ofcom fully agrees that it is important to retain a degree of flexibility in our approach to monitoring the success (or otherwise) of spectrum trading. In the RIAs, potential measurement criteria were listed, but the lists were not intended to be exhaustive. We agree that increased spectrum use as a result of spectrum trading would be a good sign. However, such increased use is only of value if it brings welfare gains, hence our preference for looking at economic rather than technical measures of gain.

⁵ http://www.ofcom.org.uk/consultations/current/spec_pricing/

Annex 1**Draft Spectrum Trading Regulations**

S T A T U T O R Y I N S T R U M E N T S

2004 No. XXXX**ELECTRONIC COMMUNICATIONS****The Wireless Telegraphy (Spectrum Trading) Regulations 2004**

Made - - - - *30th November 2004*

Coming into force - - *23rd December 2004*

Whereas the Office of Communications (“OFCOM”) have given notice of their proposal to make these Regulations in accordance with section 403(4)(a) of the Communications Act 2003⁽⁶⁾ (“the 2003 Act”) and published notice of their proposal in accordance with section 403(4)(b) of the 2003 Act and have considered the representations made to them before the time specified in the notice:

Now, therefore, OFCOM, in exercise of the powers conferred upon them by section 168(1) and (3) and section 403(7) of the 2003 Act hereby make the following Regulations:

Citation, commencement and extent

1. These Regulations may be cited as the Wireless Telegraphy (Spectrum Trading) Regulations 2004 and shall come into force on 23rd December 2004.

2. These Regulations shall not extend to the Bailiwick of Guernsey.

Interpretation

3. In these Regulations “concurrent holders” means persons who concurrently hold the rights and obligations under a wireless telegraphy licence by virtue of a transfer authorised by these Regulations which has that effect.

Transfer of all of the rights and obligations arising by virtue of a wireless telegraphy licence

4.—(1) Subject to regulation 7, a transfer by the holder of a wireless telegraphy licence to which this paragraph applies of all of the rights and obligations arising by virtue of that wireless telegraphy licence is authorised if it satisfies one of the two conditions set out in paragraph (2).

(2) Those conditions are —

(a) that the rights and obligations of the person making the transfer become rights and obligations of the transferee to the exclusion of the person making the transfer;

⁽⁶⁾ 2003 c. 21

- (b) that the transferred rights and obligations become rights and obligations of the transferee while continuing, concurrently, to be rights and obligations of the person making the transfer.

5. Paragraph (1) of regulation 4 shall apply to wireless telegraphy licences within the licence classes specified in Column 1 of each Part of the Schedule which apply to a station or apparatus operating within any of the frequency bands specified in Column 2 of the same Part.

Partial transfer of rights and obligations arising by virtue of a wireless telegraphy licence

6. Subject to regulation 7, transfers satisfying one of the two conditions set out in regulation 4(2) are also authorised where the transfer is of —

- (a) all of the rights arising by virtue of a wireless telegraphy licence which relate to —
- (i) whole frequency channels under one of the licences of a class specified in Column 1 of Part 1 or Column 1 of Part 6 of the Schedule which apply to a station or apparatus operating within any of the frequency bands specified in Column 2 of the same Part;
 - (ii) part frequency channels which have in each case a bandwidth of 12.5 kHz or a multiple thereof and the same start or end frequency limit as a licensed frequency channel under one of the licences of a class specified in Column 1 of Part 1 or Column 1 of Part 6 of the Schedule which apply to a station or apparatus operating within any of the frequency bands specified in Column 2 of the same Part;
 - (iii) whole wireless telegraphy links designed for use between two fixed points under one of the licences of a class specified in Column 1 of Part 5 of the Schedule which apply to a station or apparatus operating within any of the frequency bands specified in Column 2 of that Part;
 - (iv) a part of the range of frequencies under one of the licences of a class specified in Column 1 of Part 2 or Column 1 of Part 4 of the Schedule which apply to a station or apparatus operating within any of the frequency bands specified in Column 2 of the same Part;
 - (v) a geographical area being part of the total geographical area in which the holder is authorised to establish, install and use radio transmitting and receiving stations or apparatus under one of the licences specified in Column 1 of Part 2 or Column 1 of Part 4 of the Schedule which apply to a station or apparatus operating within any of the frequency bands specified in Column 2 of the same Part; or
 - (vi) both of the situations set out in sub-paragraphs (iv) and (v); and
- (b) the corresponding part of each of the obligations under the licence.

Circumstances in which a transfer is not authorised

7. A transfer of rights and obligations arising under a wireless telegraphy licence is not authorised where —

- (a) any of the licence holder, or all of the concurrent holders, and the transferee have not consented to the transfer;
- (b) any sum payable under the Wireless Telegraphy (Licence Charges) Regulations 2002⁽⁷⁾ in respect of that licence is owing to OFCOM because it has not been paid by the time it became due;
- (c) any instalment payment is to be paid to OFCOM under regulation 4(8)(b) of the Wireless Telegraphy (Licence Charges) Regulations 2002 in respect of that licence;
- (d) OFCOM has served notice under section 1E(1) of the Wireless Telegraphy Act 1949⁽⁸⁾ on the holder, or the concurrent holders, of that licence of a proposal to revoke or vary that licence but that revocation or variation has not yet been made;

⁽⁷⁾ S.I. 2002/1700, amended by S.I. 2003/2983 and S.I. 2003/2984

⁽⁸⁾ 1949 c. 54

- (e) the holder has, or all of the concurrent holders have, requested OFCOM to revoke or vary the licence or have consented to a revocation or variation proposed by OFCOM but that revocation or variation has not yet been made; or
- (f) OFCOM have not given their consent, under regulation 8(3)(a), to the transfer being made.

Transfer procedure

8.—(1) The holder, or concurrent holders, of a wireless telegraphy licence who wishes, or who wish, to make a transfer authorised by regulations 4(1) or 6 must provide to OFCOM –

- (a) the reference number of the wireless telegraphy licence under which rights and obligations are to be transferred;
- (b) the name and address of the holder or concurrent holders of the wireless telegraphy licence;
- (c) the name and address of the proposed transferee;
- (d) a description of which type of transfer authorised by regulation 4(1) or regulation 6 is proposed;
- (e) a document signed by or on behalf of the holder, or each concurrent holder, of the licence and signed by or on behalf of the transferee, under which each of those persons warrants to OFCOM that he has consented to the proposed transfer;
- (f) all information necessary for OFCOM to determine whether or not they shall consent to the transfer; and
- (g) in the case of a transfer authorised by regulation 6, a description of which rights and obligations under the licence are to be transferred.

(2) OFCOM shall, after determining that the requirements of paragraph (1) have been met, publish a notice stating:

- (a) the name of the wireless telegraphy licence holder or concurrent holders and the name of the transferee to whom it is proposed that the rights and obligations arising under the licence shall be transferred;
- (b) the date when OFCOM determined that the requirements of paragraph (1) were met;
- (c) the licence class and the reference number of the wireless telegraphy licence under which rights and obligations are to be transferred; and
- (d) in the case of a transfer authorised by regulation 6, a description of which rights under the licence are proposed to be transferred.

(3) After publishing a notice under paragraph (2) OFCOM shall decide –

- (a) if they consent to the transfer in accordance with regulation 9; and
- (b) if they shall give any directions under regulation 10.

(4) OFCOM shall notify the parties to the proposed transfer of their decisions under paragraph (3).

(5) A transfer shall be effected by the holder or concurrent holders of the wireless telegraphy licence under which rights and obligations are to be transferred surrendering that licence and by OFCOM granting a new one to the transferee and –

- (a) in the case of a transfer which satisfies the condition set out in regulation 4(2)(b), the holder or concurrent holders who made the transfer; and
- (b) in the case of a transfer authorised by regulation 6, to the holder or concurrent holders who made the transfer.

(6) OFCOM shall publish the information specified in paragraph (2) in relation to transfers that have been effected pursuant to paragraph (5).

Consent by OFCOM

9. In determining whether or not to consent to a proposed transfer OFCOM shall take into account whether –

- (a) the holder is, or the concurrent holders are, in breach of the terms of the wireless telegraphy licence under which the rights and obligations are to be transferred;
- (b) the transferee is able to meet the terms, provisions and limitations of the wireless telegraphy licence which is to be granted as a result of the transfer;
- (c) in the case of a transfer authorised by regulation 6 the transferor is able to meet the terms, provisions and limitations of the wireless telegraphy licence which is to be granted as a result of the transfer;
- (d) the transferee is able to meet any criteria relating to the persons to whom a wireless telegraphy licence of the class under which rights and obligations are to be transferred may be granted; and
- (e) it is requisite or expedient to refuse consent to the transfer –
 - (i) in the interests of national security;
 - (ii) for the purposes of complying with a Community obligation of the United Kingdom or with any international agreement or arrangements to which the United Kingdom is party; or
 - (iii) for the purposes of complying with a direction by the Secretary of State given to OFCOM under section 5 or section 156 of the Communications Act 2003.

Directions by OFCOM

10.—(1) If OFCOM consent to a transfer they may also direct that a transfer shall only be put into effect in accordance with regulation 8(5) after compliance with conditions which may relate to any matter mentioned in any of the paragraphs of regulation 9.

(2) A transfer may not be put into effect in accordance with regulation 8(5) until after compliance with the conditions set out in any such direction.

30th November 2004

Chief Executive of the Office of Communications
For and by authority of the Office of Communications

SCHEDULE Regulations 4 and 6
LICENCE CLASSES AND FREQUENCY BANDS

PART 1

<i>Column 1</i>	<i>Column 2</i>
Licence classes	Frequency bands
Public Mobile Operator for Public Wide-Area Paging	55.75 – 87.50 MHz
Public Mobile Operator for Public Mobile Data, Non-Voice Only Operation	136 – 208 MHz
Public Mobile Operator for Public Access Mobile Radio	450 – 470 MHz
Public Mobile Operator for CDMA Spread Spectrum Data/Asset Tracking Systems	133 – 134 kHz
National and Regional Private Business Radio	146 – 147 kHz
Common Base Station Operator	

PART 2

<i>Column 1</i>	<i>Column 2</i>
Licence class	Frequency band
Fixed Wireless Access (including point-to-multipoint systems)	3480 – 3600 MHz

PART 3

<i>Column 1</i>	<i>Column 2</i>
Licence class	Frequency band
Fixed Wireless Access (including point-to-multipoint systems)	3605 – 4009 MHz

PART 4

<i>Column 1</i>	<i>Column 2</i>
Licence class	Frequency bands
Broadband Fixed Wireless Access	28.0525 – 28.4445 GHz

29.0605 – 29.4525 GHz

PART 5

<i>Column 1</i>	<i>Column 2</i>
Licence class	Frequency bands
Point to Point Fixed Links	1350 – 1530 MHz
	1672 – 1690 MHz
	3600 – 4200 MHz
	5925 – 6425 MHz
	6425 – 7125 MHz
	7425 – 7900 MHz
	10.7 – 11.7 GHz
	12.75 – 13.25 GHz
	14.25 – 14.5 GHz
	14.5 – 15.35 GHz
	17.3 – 17.7 GHz
	17.7 – 19.7 GHz
	21.2 – 22 GHz
	22 – 23.6 GHz
	24.5 – 26.5 GHz
	32.319 – 32.571 GHz
	33.131 – 33.383 GHz
	37 – 39.5 GHz
	49.2 – 50.2 GHz
	51.4 – 52.6 GHz
	55.78 – 57 GHz

PART 6

<i>Column 1</i>	<i>Column 2</i>
Licence class	Frequency band
Scanning Telemetry	457.5 – 464 MHz

EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations are made under section 168(1) and (3) and section 403(7) of the Communications Act 2003. Section 168 implements Article 9(3) and (4) of the Directive of the European Parliament and of the Council of 7th March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive) (2002/21/EC).

Regulation 4(1) (subject to the exceptions in regulation 7) authorises the transfer of all rights and obligations arising by virtue of the wireless telegraphy licences of the classes listed in Column 1 of each Part of the Schedule which apply to a station or apparatus operating within any of the frequency bands specified in Column 2 of the same Part. This includes licences granted for the Public Mobile Operator sector, the Fixed Wireless sector, Point to Point Fixed Links licences and Scanning Telemetry licences.

Under regulation 6 (subject to the exceptions in regulation 7) certain transfers of rights and obligations relating to parts of the licensed range of frequencies are authorised for certain licences granted for the Public Mobile Operator sector, the Fixed Wireless Access sector, Point to Point Fixed Links licences and Scanning Telemetry licences. The transfer of the rights and obligations relating to a part of the licensed geographical area is authorised for certain licences within the Fixed Wireless Access class and the Broadband Fixed Wireless Access class.

Two types of transfer are authorised by regulation 4(1) and 6. Firstly, a transfer may be one in which the rights and obligations of the person making the transfer become rights and obligations of the transferee to the exclusion of the person making the transfer. Secondly, a transfer may be one in which the transferred rights and obligations become rights and obligations of the transferee while continuing, concurrently, to be rights and obligations of the person making the transfer.

Regulation 7 specifies circumstances in which transfers are not authorised which include where OFCOM has not given its consent. Regulation 9 sets out the matters which OFCOM shall take into account in determining whether or not to consent. If OFCOM consents to a transfer they may also direct that a transfer shall only be put into effect after compliance with conditions. Regulation 8 sets out the procedure for making transfers.

A full regulatory impact assessment of the effect that these Regulations will have on the costs to business is available to the public from the OFCOM Library at Riverside House, 2a Southwark Bridge Road, London SE1 9HA (Tel: 020 7981 3000) or on the Office of Communications Internet web site at www.ofcom.org.uk. Copies of the report have also been placed in the libraries of both Houses of Parliament.

Annex 2**Draft Register Regulations**

 S T A T U T O R Y I N S T R U M E N T S

2004 No. XXXX**ELECTRONIC COMMUNICATIONS****The Wireless Telegraphy (Register) Regulations 2004**

Made - - - - - *30th November 2004*

Coming into force - - - - - *23rd December 2004*

Whereas the Office of Communications (“OFCOM”) have given notice of their proposal to make these Regulations in accordance with section 403(4)(a) of the Communications Act 2003⁽⁹⁾ (“the 2003 Act”) and published notice of their proposal in accordance with section 403(4)(b) of the 2003 Act and have considered the representations made to them before the time specified in the notice:

Now, therefore, OFCOM, in exercise of the powers conferred upon them by section 170(1) and (2) and section 403(7) of the 2003 Act hereby make the following Regulations:

Citation, commencement and extent

1. These Regulations may be cited as the Wireless Telegraphy (Register) Regulations 2004 and shall come into force on 23rd December 2004.
2. These Regulations shall not extend to the Channel Islands or to the Isle of Man.

Public register of information

3. OFCOM shall establish and maintain a public register of relevant information to which these Regulations apply.

4.—(1) The description of relevant information prescribed for the purposes of section 170(2) of the Communications Act 2003 is information which relates to the issue, renewal or variation of wireless telegraphy licences of a class specified in Column 1 of each Part of the Schedule which apply to a station or apparatus operating within any of the frequency bands specified in Column 2 of the same Part and which relates to the matters set out in paragraph (2).

(2) The matters are —

- (a) the identity and contact address of the holder of a wireless telegraphy licence;
- (b) the reference number of a wireless telegraphy licence; and
- (c) the terms, provisions or limitations of a wireless telegraphy licence which concern the following —

⁽⁹⁾ 2003 c.21.

- (i) the frequencies assigned; and
- (ii) the geographical area of transmission.

30th November 2004

Chief Executive of the Office of Communications
For and by authority of the Office of Communications

SCHEDULE

LICENCE CLASSES AND FREQUENCY BANDS

Regulation 4

PART 1

<i>Column 1</i>	<i>Column 2</i>
Licence classes	Frequency bands
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Common Base Station Operator	

PART 2

<i>Column 1</i>	<i>Column 2</i>
Licence class	Frequency band
Fixed Wireless Access (including point-to-multipoint systems)	3480 – 3600 MHz

PART 3

<i>Column 1</i>	<i>Column 2</i>
Licence class	Frequency band
Fixed Wireless Access (including point-to-multipoint systems)	3605 – 4009 MHz

PART 4

<i>Column 1</i>	<i>Column 2</i>
Licence class	Frequency bands
Broadband Fixed Wireless Access	28.0525 – 28.4445 GHz

29.0605 – 29.4525 GHz

PART 5

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	17.7 – 19.7 GHz
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	24.5 – 26.5 GHz
	32.319 – 32.571 GHz
	33.131 – 33.383 GHz
	37 – 39.5 GHz
	49.2 – 50.2 GHz
	51.4 – 52.6 GHz
	55.78 – 57 GHz

PART 6

<i>Column 1</i>	<i>Column 2</i>
Licence class	Frequency band
Scanning Telemetry	457.5 – 464 MHz

EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations provide for the Office of Communications (“OFCOM”) to establish and maintain a wireless telegraphy register, and provide the information that is relevant for this purpose. Regulation 3 of these Regulations provides that OFCOM shall establish and maintain a register of relevant information, and regulation 4 and the Schedule to these Regulations prescribe the relevant information.

A full regulatory impact assessment and report of the effect that these Regulations will have on the costs to business is available to the public from the OFCOM Library at Riverside House, 2a Southwark Bridge Road, London SE1 9HA (Tel: 020 7981 3000) or on the OFCOM internet web site at www.ofcom.org.uk. Copies of the report have also been placed in the libraries of both Houses of Parliament.

Annex 3



**Regulatory Impact Assessment
Wireless Telegraphy (Spectrum
Trading) Regulations 2004**

30 November 2004

Introduction

A3.1 Ofcom is proposing to introduce the ability to transfer rights and obligations under certain wireless telegraphy licences. These proposals are covered by the Wireless Telegraphy (Spectrum Trading) Regulations 2004. This RIA has been published to support these regulations. In order to enhance the development of a secondary market for the right to use spectrum, Ofcom is proposing to establish and maintain a register about spectrum trades and licences. A separate regulatory impact assessment has been carried out for them.

Proposal, purpose and intended effect

A3.2 This proposal applies to the various licences classes set out in the regulations¹⁰ and to the whole of the United Kingdom.

A3.3 The intended effect of this proposal is to enable spectrum to migrate to the users that value it the most. It should also lower the barriers to acquiring spectrum and promote innovation and new services. This will help Ofcom to achieve one of its key duties: to ensure the optimal use of the radio spectrum in order to further the interests of citizens and consumers in the UK.

A3.4 There are two alternative courses of action Ofcom could have followed in considering whether to bring forward regulations to introduce spectrum trading:

- Alternative 1: not to introduce spectrum trading at all, but to rely on other market mechanisms to optimise the use of the radio spectrum;
- Alternative 2: to introduce spectrum trading in all licence classes immediately, except where not permitted by international constraints.

Risk assessment

A3.5 Ofcom carried out a risk assessment of the introduction of spectrum trading in the consultation on spectrum trading published in November 2003. A few respondents commented on the risk assessment, mainly focusing on the risks from interference due to liberalisation. This document deals only with spectrum trading, i.e. the transfer of rights to use spectrum. Change of use and liberalisation issues are dealt with in the Spectrum Liberalisation Consultation published on 17 September 2004. Having reviewed the initial risk assessment Ofcom's final view of the risks associated with spectrum trading are summarised below.

The risks of inaction - Alternative 1

A3.6 The main risk of not introducing spectrum trading is that the potential economic benefits associated with it would be foregone. Ofcom believes that while auctions and administrative incentive pricing are alternative mechanisms for optimising the use of radio spectrum, they are complementary to spectrum trading. Ofcom also believes that greater improvements in efficiency can be gained from using all three mechanisms than by using a subset of them.

¹⁰ These are the licence classes where there are no significant spectrum management issues awaiting resolution, free from international constraints, and unhindered by practical limitations to the immediate introduction of spectrum trading.

Risks common to Ofcom's proposals and Alternative 2

A3.7 The risks of introducing trading that are common to Ofcom's proposals and Alternative 2 are summarised below together with the actions Ofcom could take to mitigate these risks:

- lack of trading activity - making as large a pool of spectrum available as possible to aid liquidity and publishing information to facilitate trading in a register should create a favourable environment for trading;
- anti-competitive action - Ofcom's consultation process on trading has identified that existing competition policy tools should be sufficient to address anti-competitive behaviour;
- inefficient use of spectrum - the market should be best at allocating resources and Ofcom would have powers to counter fragmentation as a last resort;
- risks to safety of life services - protection of safety of life services would be paramount in Ofcom granting approval to trading in these sectors and in any interference investigations.

Risks of introducing spectrum trading immediately across the board - Alternative 2

A3.8 The main difference between Alternative 2 and Ofcom's proposals is that spectrum trading would be introduced in licence classes where major decisions affecting the future use or planning of the spectrum have not been taken, such as planning for digital switchover in television broadcasting. This would run the following additional risks:

- there is an amplified risk that there will be little trading activity because it will be more difficult for users and potential users to predict the expected value of the spectrum;
- if trades do take place based on erroneous predictions about spectrum planning etc., substantial investments may be made which are ultimately wasted.

Conclusion

A3.9 The risk assessment shows that there are significant risks that substantial economic benefits could be given up by not introducing spectrum trading. There are also risks in introducing spectrum trading but Ofcom can take a number of actions to mitigate these risks. However, introducing spectrum trading immediately across all licence classes would create additional risks in licence classes where significant spectrum management issues are in the process of being resolved.

Equity and fairness

A3.10 Ofcom has considered the fairness of its proposals and is confident that they are fair to users of spectrum, businesses and consumers. Firstly the introduction of spectrum trading will not force any existing user of spectrum to take any action. Spectrum trading will be an entirely voluntary activity. It will only take place where both parties benefit from the trade, therefore no user should be at a disadvantage because of it.

A3.11 Secondly, Ofcom has carefully reviewed the potential of spectrum trading to distort competition, as it is required under European legislation. Ofcom has consulted on this issue both in the original consultation on spectrum trading and a specific consultation on competition. As a result of the consultation process, Ofcom believes that it will be sufficient to rely on existing legislation to prevent distortions of competition following the introduction of spectrum trading. Ofcom will keep this issue under review in the light of experience gained from the roll-out of trading and liberalisation.

A3.12 Thirdly, Ofcom believes that spectrum trading will open access to spectrum to a wider range of potential users. In time it should help address the problem of bandwidth scarcity in certain parts of the radio frequency spectrum, increasing competition and, for example, help to reduce any inequity from spectrum allocated on a first come first served basis.

Benefits

Identification of Benefits

A3.13 In summary, the benefits of spectrum trading identified in the Consultation on Spectrum Trading were that exposing users to the opportunity cost of holding spectrum would create incentives for the spectrum to move to the users which valued spectrum most. Thus spectrum would be used more efficiently and the economic value generated by using spectrum would increase as a result. Competition would also be expected to increase because spectrum trading would lower barriers to accessing spectrum. Consumers would benefit from competition through lower prices and increased choice. The Consultation also looked at successful examples of spectrum trading in other countries as practical evidence to support its presumption.

A3.14 Respondents to the consultation did not dispute the benefits identified in the consultation and Ofcom holds to the view that spectrum trading will deliver substantial benefits to the UK.

Quantification of benefits

A3.15 A conservative approach to quantifying benefits was taken in the Spectrum Trading Consultation. The direct benefits from trading were estimated, but indirect effects such as the impact of increased competition and innovation were not. Moreover, a deliberately pessimistic view was taken in estimating the direct benefits of trading. The direct benefit from a simple transfer of rights is equal to the difference in value to the buyer and seller. The analysis assumed that difference (in percentage terms) between the buyer's and seller's valuation was the minimum necessary for trading to take place¹¹. In practice, the difference in valuations could lie well above this minimum.

A3.16 The methodology used to estimate the direct benefits of trading were as follows:

- the volume of trades over time was based on international experience;

¹¹ The Myerson Satterthwaite result shows that when there is incomplete information, (i.e. buyers and sellers in a trade do not know each other's true valuations), there has to be a difference in valuations of at least 25% for a trade to take place - Myerson, Roger B.; Satterthwaite, Mark A. 1983. "Efficient Mechanisms in Bilateral Trading", Journal of Economic Theory 29 (April): 265-81

- the value of the spectrum was based on the AIP or the standard licence fee where AIP was not charged
- the forward looking estimate of the benefits was kept consistent with the timeline presented in the Consultation for when licences classes would become tradable
- the difference in value of the spectrum between the seller and the buyer was taken at the minimum of 25% according to the Myerson Satterthwaite result.

A3.17 The main focus of the comments received on this analysis was that it would be more accurate to assess the annual percentage of spectrum traded on a class by class basis, rather than assume an equal proportion across all classes.

A3.18 In addition, Analysys, DotEcon and Hogan & Hartson have done further work in this area which Ofcom has reviewed. Analysys et al. produced a report for the European Commission on conditions and options in introducing secondary trading of radio spectrum in the European Community¹². Their analysis attempted to estimate the direct and indirect benefits of spectrum trading and liberalisation. Their overall conclusions were in line with those of the assessment in the Spectrum Trading Consultation¹³.

A3.19 Ofcom has taken on board these two pieces of work. A revised version of the estimate of the direct benefits of trading is presented below, where the proportion of spectrum traded per year varies by licence class. An estimate of the potential benefit from competition that could arise from spectrum trading is also presented.

Revised analysis of the direct benefits of trading

A3.20 The table below presents a revised analysis of the direct benefits from spectrum trading. It only considers the benefits of a transfer of rights to use spectrum. Liberalisation or change of use is being dealt with in parallel, but separate to spectrum trading. As a result the benefits of liberalisation have been assessed in the consultation on Spectrum Liberalisation published 17 September 2004.

A3.21 The main difference between this analysis and that presented in the consultation on spectrum trading is in the assumed volume of licences traded each year. Instead of an across the board¹⁴ estimate of 8% (based on trading volumes in Australia), the volume of trading varies by licence class. In the new calculation, we have assumed that the volume of trading varies roughly with the number of licensees and or licence assignments. The volume of trading is assumed to be 2%, 4% or 8% depending largely on whether there are very few, a few or many licensees in the licence class. Clearly the actual determinants of the volume of trading are much more

¹²

http://europa.eu.int/information_society/topics/radio_spectrum/useful_info/studies/secondtrad_study/index_en.htm

¹³ Analysys et al. found that the benefits of spectrum trading and liberalisation together were nine times that of spectrum trading alone, therefore the benefits they estimated are significantly higher than those estimated here.

¹⁴ For fixed links the volume of trading was assumed to be much lower. Trading in fixed links is expected to be different from other classes because, except on routes between major areas of telecommunications demand, it is unlikely that demand for fixed links will coincide sufficiently for much trading to occur. The assumed volume of trades for fixed links is assumed to be the same in the present analysis.

complex than this, but we feel this assumption is adequate for the purposes of analysing the net costs and benefits of introducing spectrum trading.

Benefits of trading - no change of use

Licence class	Start date of trading	Number of licences	% licences traded per year	Average licence value ¹⁵	Benefits (£000s)
National and regional PBR	2004	69	8.0%	25,800	36
Common base stations	2004	350	8.0%	2,250	16
On-site PBR	2005	26,000	8.0%	550	286
Wide area PBR	2005	13,361	8.0%	3,796	1,014
GSM	2007	4	2.0%	15,800,000	316
PAMR analogue	2004	5	2.0%	9,450	0.2
National paging	2004	5	2.0%	9,450	0.2
Public data networks	2004	6	4.0%	9,450	0.6
3.4 GHZ FWA	2004	15	4.0%	463,667	70
28GHz FWA	2004	15	4.0%	2,534,000	380
Remote meter reading	2004	3	2.0%	56,000	0.8
Point to point fixed links <13GHz	2004	2,105	1.6%	48,067	405
Point to point fixed links 13-23 GHz	2004	10,783	1.6%	16,007	690
Point to multipoint fixed links	2004	54	4.0%	1,960	1.1
Scanning telemetry	2004	66	4.0%	15,840	10
Broadcasting	2008	1*	2.0%	436,000,000	2,180
Total					5,406

*This class has been amalgamated for ease of analysis

A3.22 The annual benefit from spectrum trading, if it were introduced in all classes at once, would be about £5.4 million. Introducing spectrum trading according to the timetable in the table above would generate a total benefit of over 20 years of £62 million in net present value¹⁶ (NPV) terms. If the assumed volume of trading were only half that shown in the table above, the net present value of the benefits would fall to £31 million.

Estimate of the benefits from increased competition

A3.23 Analysys, DotEcon and Hogan & Hartson estimate that benefits due to the additional competition that would result from spectrum trading on its own would be roughly equal to the direct benefits of spectrum trading. This would increase the NPV of the benefits to £124 million.

Other benefits

¹⁵ The average licence value is based on estimates of opportunity cost except for fixed wireless access which is based on auction fees, and GSM, broadcasting, point-to-multipoint fixed links and scanning telemetry which are based on existing licence fees

¹⁶ The net present value measures the value today of the future stream of benefits from spectrum trading with trading introduced in each class according to the start dates shown above. A time horizon of 20 years and a discount rate of 5.5% have been used.

A3.24 Analysys, DotEcon and Hogan & Hartson concluded that there are powerful synergies between trading and liberalisation and estimated that benefits from both are over 9 times the benefits from trading alone.

Business sectors affected

A3.25 The business sectors affected by the introduction of spectrum trading break down into two classes. Firstly, those for whom spectrum is essential to offering the end-user service: mainly telecommunications and multimedia service providers, and broadcasters. Secondly, those for which spectrum is a non-essential, though valuable input to providing their end-user service:

- telecommunications and broadcasting equipment suppliers
- transport and logistics
- aviation
- shipping
- local government
- public safety services
- utilities including gas, water and electricity
- entertainment.

Costs to business

A3.26 Since no user will have to take any action as a result of these proposals, no additional costs need be imposed on business as a result of spectrum trading. Those users and business which do decide to trade spectrum will only do so if the benefits of trading outweigh the transaction costs, therefore costs incurred in completing a trade will always be offset by the benefits.

A3.27 Ofcom is not charging an administration fee for whole or partial transfers under spectrum trading, though businesses will be required to notify Ofcom before a transfer is made and on completion of the trade. However, Ofcom is proposing low cost methods of notification, e.g. by electronic means, in order to minimise the costs of the notification process.

Other costs

A3.28 The revised analysis of the costs of introducing and administering spectrum trading are summarised in this section. As in the previous RIA for the consultation on spectrum trading, the costs can be broken down into two classes:

- implementation costs relating to development of IT systems, updating licence records and implementation;
- annually incurred administration costs associated with trading.

A3.29 The main difference between the revised analysis and that which accompanied the previous consultation on spectrum trading lies in the assumed volume of trading. This is consistent with the volumes assumed in the revised benefits estimate, as outlined above.

A3.30 Implementation costs have been amended in a few instances where new or more detailed information on implementation costs has been available. The new estimate for set up costs at £2.8 million is marginally lower than before. Actual and

planned levels of personnel required for implementation have turned out to be less than previously predicted.

A3.31 The ongoing administrative costs are summarised below. If spectrum trading were introduced in all classes at once, the annual administrative costs would add up to £0.3 million.

Ongoing administrative costs of spectrum trading by licence class

Licence class	Average yearly volume of trades	Administration cost (£000s per year)
National and regional PBR	5.5	0.5
Common base stations	28.0	2.7
On-site PBR	2,080	200.5
Wide area PBR	1,069	103.1
GSM	0.1	0.2
PAMR analogue	0.1	0.2
National paging	0.1	0.01
Public data networks	0.2	0.6
3.4 GHZ FWA	0.6	1.4
28GHz FWA	0.6	1.4
Remote meter reading	0.1	0.1
Point to point fixed links <13GHz	34	1.6
Point to point fixed links 13-23 GHz	173	8.3
Point to multipoint fixed links	2.2	0.1
Scanning telemetry	2.6	0.1
Broadcasting	-	-
Total		321

A3.32 The table below summarises the costs of introducing spectrum trading both to business and to Ofcom and presents them in net present value form. It takes the estimate of the implementation costs (as described above) and then projects forward, over a 20 year time horizon, the annual administration costs according to when trading is introduced in each licence class. The total costs to Ofcom are calculated as the net present value of the administrative costs plus the implementation costs. As in the previous RIA for spectrum trading, it is assumed that the costs to business are 5% of the total benefits. These costs are added to the costs to Ofcom to derive the total costs of spectrum trading in net present value terms.

Total Ofcom and business costs of spectrum trading.

	Base case, £ millions	Half trading volumes, £ millions
NPV administrative costs (20 years)	3.22	1.54
Implementation costs	2.76	2.76
NPV Ofcom costs over 20 years	5.98	4.30
NPV costs to business (20 years)	3.12	1.56
NPV total costs (20 years)	9.10	5.86

Net economic benefit and conclusions

A3.33 Ofcom's revised analysis of the economic costs and benefits of introducing spectrum trading shows that the benefits will substantially exceed the costs and endorses the findings of the previous regulatory impact assessment. The net

economic benefits range from £53 million to £118 million if the impact of greater competition is taken into account.

A3.34 Even if the volume of spectrum trading is only half that assumed in these estimates, the basic conclusion is unchanged, that the benefits of spectrum trading exceed the costs. In this case, the net economic benefits range from £22 million to £56 million if the impact of greater competition is taken into account.

Monitoring and compliance

A3.35 Ofcom will monitor the success of spectrum trading in a number of ways. These include:

- **Volume of licences traded.** Ofcom will record the percentage of licences and spectrum that are traded as a proportion of the volume that are permitted to trade.
- **Maturity of spectrum markets.** Ofcom will monitor the emergence of intermediaries, including market makers, and technical consultants devoted to trading. The emergence of these kinds of organisation are one indication of a vibrant and efficient spectrum market.
- **Evidence of value-enhancing trades.** Ofcom anticipates that a successful spectrum market will generate clear examples of value-enhancing trades; for example partitioning of a national licence into smaller ones in order to better address customer needs, where markets are very local in nature.

Declaration

I have read the Regulatory Impact Assessment and I am satisfied that the benefits justify the costs.

Signed:

Chief Executive of the Office of Communications

Date:

Contact point:

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The Office of Communications
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Annex 4



**Regulatory Impact Assessment
Wireless Telegraphy (Register)
Regulations 2004**

30 November 2004

Introduction

A4.1 In order to enhance the development of a secondary market for the right to use spectrum, Ofcom is proposing to establish and maintain a register about spectrum trades and licences. This RIA has been published to support the Wireless Telegraphy (Register) Regulations 2004 (the “proposal”). Ofcom is also proposing to enable the transfer of rights and associated obligations from holders of spectrum licences to third parties. These proposals are covered by the Wireless Telegraphy (Spectrum Trading) Regulations 2004, and a separate regulatory impact assessment has been carried out for them.

Proposal, purpose and intended effect

A4.2 This proposed register will contain information about the licences classes described in the regulations¹⁷.

A4.3 The intended effect of this proposal is to facilitate spectrum trading by:

- except where security considerations prevent publication of information, providing information about existing licences which will enable potential buyers to find out what spectrum is available, the constraints on the use of the specific frequencies or bands and who holds what frequencies;
- providing basic information about proposed and completed transfers to facilitate the transparency of secondary trading.

A4.4 This Regulatory Impact Assessment focuses on the above proposal and on the alternative of not establishing a wireless telegraphy register, i.e. carrying on the status quo, but in the changed context of having introduced spectrum trading. The assessment is linked to the Regulatory Impact Assessment for the Trading Regulations, which concludes that the benefits of trading outweigh the costs.

Risk assessment

The risks of establishing a wireless telegraphy register

A4.5 The risks of establishing a register of licences and trades are two-fold. Firstly, there is a risk that the security of wireless telegraphy systems is compromised if too much is known about their operation. Ofcom is mitigating this risk by publishing only basic information about licensees and by specifically not publishing precise details about transmitters.

A4.6 The second risk is that publishing commercially sensitive information about planned and actual trades could create disincentives to trading. Ofcom will mitigate this risk by publishing only basic details about the licence being traded and the identity of the parties to the trade. Ofcom will not publish commercially sensitive information such as transaction prices.

The risks of not establishing a wireless telegraphy register

¹⁷ These are the licence classes where there are no significant spectrum management issues awaiting resolution, free from international constraints, and unhindered by practical limitations to the immediate introduction of spectrum trading

A4.7 Were Ofcom not to establish a register, the effectiveness of spectrum trading may be limited by the lack of availability of information on the availability and rights to use spectrum and a lack of transparency in the functioning of the spectrum trading market. This could increase the cost of searching for information thereby increasing transaction costs, which could prevent some trades from going ahead. Moreover the lack of information may directly cause some trades not to go ahead because potential traders are not fully aware of the opportunities to trade.

A4.8 This risk may be mitigated to the extent that commercial organisations may be able to compile and offer for sale information relating to spectrum trading. However, commercial organisations are unlikely to be able to gather information as comprehensively as Ofcom, and it would take time for them to be able to begin providing such services.

Conclusion

A4.9 The risk assessment shows that all major risks associated with establishing a register can safely be mitigated by Ofcom. On the other hand, if a register is not established, there is a real risk that the effectiveness of spectrum trading will be damaged and this is unlikely to be wholly mitigated by commercial information providers.

Equity and fairness

A4.10 Ofcom has considered the fairness of its proposals and is confident that they are fair to users of spectrum, businesses and consumers. Ofcom is not proposing to publish any information which would compromise the security or commercial standing of either licensees or parties to a spectrum trade. Neither is any one type of user being treated differently from another under these regulations.

Benefits

Identification of Benefits

A4.11 The major benefits of establishing a wireless telegraphy register, in conjunction with introducing spectrum trading, are that:

- transaction costs of spectrum trades are lower - since the relevant information on the rights and obligations of frequencies that can be traded is available;
- potential users of spectrum are fully aware of the opportunities for trading;
- gaps in spectrum usage are more transparent, facilitating access to spectrum for innovative uses;
- greater transparency engenders greater confidence in the trading process;
- transmitter and receiver manufacturers can evaluate and monitor the size of their markets more accurately.

A4.12 Establishing the Register will help ensure that the maximum benefit from spectrum trading - creating incentives for spectrum to move to the users which value spectrum most - is achieved. In addition, Ofcom is proposing to publish the UK frequency allocation plan (UKFAP) which will give details of regulatory constraints on spectrum and further increase the effectiveness of spectrum trading.

Quantification of benefits

A4.13 The benefits of establishing the Register are difficult to quantify. They depend largely on the impact of limited information on the functioning of the spectrum market, and there is no empirical evidence on which a reliable evaluation of the impact of a register can be based.

A4.14 It should be noted however, that Ofcom's central estimate of the benefit from spectrum trading according to the timetable proposed in the statement on spectrum trading would be £62 million in net present value¹⁸ (NPV) terms. This would double to £124 million if the benefits of competition were taken into account.

Business sectors affected

A4.15 The business sectors affected by establishing the wireless telegraphy register break down into two classes. Firstly, those for whom spectrum is essential to offering the end-user service: mainly telecommunications and multimedia service providers, and broadcasters. Secondly, those for which spectrum is a non-essential, though valuable input to providing their end-user service:

- telecommunications and broadcasting equipment suppliers
- transport and logistics
- aviation
- shipping
- local government
- public safety services
- utilities including gas, water and electricity
- entertainment.

Costs to business

A4.16 Businesses may incur some additional costs in providing information for a Spectrum Register, but Ofcom has taken care to mandate only the minimum necessary level of information required to provide a favourable environment for spectrum trading. Moreover, much of the information on existing licensees is already available to Ofcom and this will minimise costs.

A4.17 In order for Ofcom to publish information on trades, businesses will be required to notify Ofcom before a transfer is made and on completion of the trade. However, Ofcom is proposing low cost methods of notification, e.g. by electronic means, in order to minimise the costs of the notification process.

Other costs

A4.18 Many of the costs to Ofcom of setting up and maintaining the Register are common to other activities which Ofcom will be required to carry out in the administration of the framework for spectrum trading.

A4.19 The development costs of the wireless telegraphy register are expected to be about £130,000 for the first group of tradable licences and £280,000 in total. Most of

¹⁸ The net present value measures the value today of the future stream of benefits from spectrum trading with trading introduced in each class according to the start dates shown above. A time horizon of 20 years and a discount rate of 5.5% have been used.

the ongoing costs would be incurred anyway in the operation of spectrum trading. These costs are small in relation to the set-up costs of spectrum trading which are estimated at £2.8 million. They are also negligible compared with the overall benefits of spectrum trading, which, even on a conservative estimate, are about £5.4 million per annum.

Conclusions

A4.20 There are significant benefits from establishing a wireless telegraphy register. Though they are difficult to quantify, Ofcom believes that these benefits exceed the costs of establishing a register. Moreover, if Ofcom were not to establish a register, the effectiveness of trading may be damaged with repercussions for economic efficiency.

Monitoring and compliance

A4.21 Ofcom will monitor the success of spectrum trading as a whole and the Register will be a part of this. Ofcom will measure:

- **Volume of licences traded.** Ofcom will record the percentage of licences and spectrum that are traded as a proportion of the volume that are permitted to trade.
- **Maturity of spectrum markets.** Ofcom will monitor the emergence of intermediaries, including market makers, and technical consultants devoted to trading. The emergence of these kinds of organisation are one indication of a vibrant and efficient spectrum market.
- **Evidence of value-enhancing trades.** Ofcom anticipates that a successful spectrum market will generate clear examples of value-enhancing trades; for example partitioning of a national licence into smaller ones in order to better address customer needs, where markets are very local in nature.

Declaration

I have read the Regulatory Impact Assessment and I am satisfied that the benefits justify the costs.

Signed:

Chief Executive of the Office of Communications

Date:

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Annex 5

List of Respondents

Ofcom received 12 responses to the consultation on the notice of Ofcom's proposals to make regulations. These were received from:

- BT Group Plc
- Cantor Fitzgerald Telecom Services
- Civil Aviation Authority
- Crown Castle UK Ltd
- Department of Enterprise, Trade and Investment (Northern Ireland)
- Hutchison 3G UK Ltd
- Joint Radio Committee (JRC) Ltd
- Nokia UK Ltd
- Telecommunications Association of the UK Water Industry (supported by CSS Spectrum Management Services)
- T-Mobile (UK) Ltd
- UK Broadband Ltd
- Vodafone