

**BT Response to the RA Consultation on
Implementing Spectrum Trading**

Submission date: 7th October 2002



1. BT is pleased to offer the following comments on the RA's July 2002 Consultation on Implementing Spectrum Trading. Our Response is mainly in the form of answers to the questions put by the RA, although we have a few short comments on this initiative generally.
2. We believe that some element of spectrum trading holds benefits for suppliers if it can offer the opportunity, flexibility and low cost necessary to encourage trades to take place. At the same time, the density of use of spectrum in much of the UK is extremely high and it is important that flexibility does not cause interference to users that is disproportionate to the gains made possible by having such flexibility.
3. The Consultation Document (CD) illustrates the very wide range of issues that need to be addressed if spectrum trading is to improve the efficiency of spectrum usage through market forces. We feel, however, that many of the questions on which the RA has invited comment are very general and cannot be addressed until there is clarity as to the detail upon which trading is to be allowed. That is, we are still unclear on the "ground rules" which will apply and until these are developed it is not possible, for example, for us to forecast the level of trading that might take place, or in which frequency bands trading may be most beneficial. A further difficulty is that some questions invite very specific suggestions that we also have found hard to answer at this time.
4. Our overall impression is that, while there is general support for trading spectrum, it is still seen by many as opening a Pandora's Box, primarily because it might allow market manipulation of spectrum and also lead to greater levels of interference. It is very difficult to know whether these fears are exaggerated or not, but the proper response must be to proceed with due caution. We therefore support a phased introduction of trading where all participants can gain a greater understanding of such a regime and any shortcomings can be identified and put right. For example, it could be made clear that any future auctions or allocations of spectrum will be tradable from the outset, and change parameters and "modes" defined. Experience gained from such initiatives would form a sound basis for extending trading over time.
5. In particular, whilst trades must result in situations that remain within established national, regional and ITU radio regulation that is supported by the UK, this may not be sufficient. Radio interference can travel a long way, and change of use in one limited area could have implications for certain other users over very large geographical areas, or indeed in the sky or in space. Furthermore, interference is not just an in-band issue limited to the spectrum to be traded, and the impact on adjacent band users also needs to be considered in many cases. The "third party" users need to be protected, and either OFCOM would need to manage this situation, or some kind of public notice scheme would be needed to give third party spectrum users an opportunity to comment on a proposed trade. This would require adequate technical and location information to be made available, and for time to be allowed for others to assess the potential for interference problems to arise.

6. We consider that central to the successful introduction of trading into the UK is the detail of the Trading Regulations, and that these need to be considered case-by-case on the basis of the factors set out in paragraph 9.3 of the CD. The next step should be for the RA to start this process for specific spectrum and that identification of suitable spectrum should be the next task. It might be preferable to develop the initial trading regulations around some “green field” higher frequency band situations that do not carry the complexity of dealing with the issue of established licences. We suggest 40GHz and the unsold 28GHz licences could be initial examples.
7. Providing a trading environment at an early stage for the higher frequency bands might represent an additional encouragement to open up these bands to innovative commercial applications, as the commercial risk would be reduced.

Response to Questions in the CD

***Question 1** Do you have any comments on the proposed modes of trade? Are there others that should be considered?*

In BT’s view, there should be no restriction on the transfer of spectrum, on a voluntary basis, from one party to another party. In other words, “Mode 1” (change of ownership only) ought to be allowed in all licence classes as soon as possible.

For example, all the main conditions seem to be in place for allowing trade in 3G spectrum and we find it rather perverse that the RA intends not to allow trade in this case (at least initially). If an owner wants to sell, and a buyer willing to pay the required price, we are at a loss to understand why such a transaction should be impeded. This seems to be against the whole philosophy of the new regime being proposed, in which the market largely determines what happens.

We believe change of use - “Mode 3” - should be allowed in all cases where there is no change in boundary conditions and hence no possibility of impact on other users.

We do not see the purpose to “Mode 6” – the transfer of spectrum before expiry of term. Spectrum owners should be able to trade their spectrum at any time and for any duration but obviously not beyond the term for which they have rights over the spectrum. Mode 6 should be included in all other modes and it is not a separate “mode” in itself.

***Question 2** How should interference disputes be resolved? How far should OFCOM become involved and what should its role be in relation to interference?*

This we see as a key role for OFCOM, and a task that is very difficult to devolve to industry, as various parties will obviously have private interest they wish to pursue. It will be

important that an effective and transparent dispute resolution process is in place before trading starts, as this will impart confidence in the trading concept.

Question 3 *It is proposed to give scope for trades with as wide as possible a variety of time periods and opportunities for reversion. Which combinations do you think will deliver greatest benefits?*

The scope for trades should be as wide as possible – why would the RA wish to limit them e.g. in terms of duration? BT believes that the only way that trading will increase is to allow full flexibility in the scope of commercial arrangements that can be devised.

Question 4 *It is proposed to give scope for trades where the extent of transfer of rights and obligations is complete or concurrent. What is your view on this proposal?*

We agree with this proposal.

Question 5 *Licence classes from the following sectors are proposed for a first wave of the introduction of spectrum trading: public wireless networks; broadband fixed wireless access, private business systems and terrestrial fixed links. Additionally for the first wave the simplest mode of trading (change of ownership only) is proposed for all other licence sectors and licence classes (with a few exceptions).*

- a) *What is your view of these proposals?*
- b) *What is your view on the appropriate timing of the introduction of trading for particular licence classes within sectors, and in particular for Third Generation Mobile (3G) licences?; and*

Question 6 *Licence classes from the following sectors are proposed for a second wave of spectrum trading: sound broadcasting (analogue and digital), television broadcasting (analogue and digital), programme making and special events, and aeronautical and maritime. What is your view of these proposals?*

It seems to us that it is not the licence *sector* or *class* which is important, but to identify spectrum which might be most amenable to trading at this early stage in the new regime. This might come from any number of licence classes. (Indeed, if there is to be true flexibility in the use of spectrum, then the concept that spectrum can be classified by licence class seems to be inappropriate). We have suggested above that the RA could start by addressing the 40 GHz and 28 GHz licences.

Question 7 *In your view, what is the best approach for introducing the more complex forms of trading?*

This question cannot be answered at a high level of generality, as the introduction of the more complex forms of trading must be considered on a case-by-case basis. For example, boundary conditions need to be specified, as will rights and obligations of licence owners.

Question 8 *What is your view on the overall timing of the introduction of spectrum trading?*

BT would like to see trading introduced as soon as possible at least for spectrum identified as most amenable to trading. However, the attractiveness to the market will depend on the trading rules; these need to be simple to work with, and generally cause minimal delay and trading costs.

Question 9 *In planning for the introduction of spectrum trading, it would be helpful to have an estimate of the likely volume of trading. For each licence sector and licence class on which you can express a view, what volume of trades would you expect? Would you expect a different volume depending on the available modes of trade?*

We have no way of forecasting volumes of trading until there is clarity about the details of the trading regime which will apply to specific spectrum and, indeed, what spectrum will be released for trade. Indeed, in the CD the RA describes the varying nature of experience overseas, which illustrates how difficult predictions such as these are to make.

Question 10 *For the proposed licence sectors from which licence classes will be selected for the first wave of the introduction of spectrum trading with more complex trading modes (i.e. for the sectors: public wireless networks, broadband fixed wireless access, private business systems and terrestrial fixed links) do you have any views on how extensively change of use or reconfiguration should be permitted?; and*

Question 11 *For the proposed licence sectors from which licence classes will be selected for the second wave of spectrum trading, do you have any views on how extensively change of use or reconfiguration should be permitted?*

As for Questions 5 and 6, we believe that these Questions can only be answered with respect to specific tranches of spectrum, and that “Phase 1” and “Phase 2” need to be defined in terms of spectrum itself, not simply in terms of current class or sector.

Question 12 Would having different trading rules for different licence sectors and licence classes have any undesirable impact?

As long as the rules are appropriate, there seems no reason why there should be any undesirable impact. We think spectrum needs to be considered case-by-case but that the individual assessments need to be carried out on a consistent basis whatever the licence sector or class in which the spectrum is currently used. If this was achieved, we doubt that any undesirable impact would result from different trading rules, as differences would be objectively justified.

Question 13 In what circumstances do you consider it would be appropriate for OFCOM to (a) require prior clearance or consent (ex ante) for competition purposes for a proposed trade and (b) withhold consent for a trade on competition grounds?

BT agrees with the analysis of competition issues described in paragraph 10.3. For there to be any likely competition issue, there needs first to be the potential for market power to be exploited at the retail / end-user level which relies upon the spectrum in question. The standard of market power in competition law and in ex-ante regulation from July 2003 is that of market dominance. Only where there is market dominance, and the acquisition of spectrum by the dominant party is likely to lead to a substantial lessening of competition, may there be grounds for a trade to be examined.

Such a regime puts great onus on the quality of the economic assessment undertaken, both in the identification of market dominance and the substantial lessening of competition.

A particular problem may arise where a dominant supplier seeks spectrum in order to supply its market more efficiently than using its existing technology. For example, 2G operators acquired 3G spectrum (enabling economies of scope between voice and data services) largely on this basis. Had one or more of these suppliers been blocked from bidding, the outcome of the auction may have been very different. Indeed, a supplier with a lower valuation of the spectrum than those successful in the auction might have acquired spectrum. This would generally be inefficient, and against the intention of the reform, as trade should mean that spectrum ownership and use is acquired by the company which can make best use of the spectrum. This supplier will have the highest private valuation and hence be prepared to pay the highest amount.

One effective test as to a purchaser's intent in acquiring spectrum is that it is put to use rather than shelved, or "hoarded". This is because a purchaser intending to block entry may meet its objectives simply by denying the resource to others. This suggests that where OFCOM does have concerns, because spectrum is to be acquired by a company with a dominant position, undertakings on such suppliers to make use of spectrum could be considered. (In this regard, we note that 3G licences were acquired on such a basis.)

We envisage that all trades would be notified to OFCOM. If there are concerns that these could lead to a substantial lessening of competition, we see no alternative than an investigation is carried out and that the trade is put on hold. To be consistent with EU Directives, full appeal rights must be attached to any OFCOM decision following such an investigation. Whilst this may involve an extended process, we hope that such intervention would very much be exceptional, as envisaged by Professor Cave.

OFCOM will also need to watch for the accumulation of spectrum by individuals or companies not active in the supply of services to end-customers. Where ownership of spectrum is concentrated, a dominant position might exist in terms of ownership of this input. Further acquisition of spectrum by such an owner might then lead to spectrum users having less choice as to the spectrum available and facing more onerous terms. This would have adverse consequences for end-users.

***Question 14** How should tradable licences be structured? Views on all aspects of structuring the licences would be appreciated including on the technical construction of boundary conditions.*

We do not have any general suggestions we believe the structure of licences still needs to be considered on a case-by-case basis. We do not consider that making licences tradable changes this position.

***Question 15** Are there licence classes, or licence sectors, for which division of spectrum into predefined frequency trading units with fixed boundary conditions would facilitate trading?*

***Question 16** Are there licence classes, or licence sectors, for which user-negotiable boundaries would facilitate trading?*

***Question 17** Are there licence classes, or licence sectors, for which spectrum reconfiguration on demand would facilitate trading?*

We doubt that it is possible to identify licence classes or sectors in which levels of flexibility can be defined at the outset. Certainly, by doing so, innovative uses of spectrum might be precluded.

Consider “reconfiguration on demand”, which could give real meaning to a viable spectrum trading market. It is possible, indeed probable, that an enterprising supplier could create radio-based services by interleaving in some way the new service with an existing service. There are excellent precedents in this context in the way teletext is provided over a TV signal, and in the way GPRS can use momentarily unused timeslots in the GSM signals. In these examples it is the same operator running the main and additional services, but this need not be so. Time, geography, sub-carrier transmissions, off-peak capacity, micro-trading etc. all lend themselves to creative thinking in this respect. Therefore, rather than trying to pre-define the

options, Government should seek to let the market explore the possibilities for trading by making the trading regime as open and as flexible as possible.

We are also doubtful as to whether there is likely to be merit in spending time and resource developing standardised trading units (as suggested in Question 15). Spectrum is not a standard input and frequency trading units (ftus) are likely to exist in too many dimensions for it to be possible to design “standardised blocks”. In addition, we envisage that over time spectrum licences will sometimes be aggregated, whilst other times sub-divided. This may be essential to allow innovation in services and applications. Boundary conditions may be changed too. In such circumstances, we fail to see the rationale for “standardised trading units”.

***Question 18** What changes, if any, do you consider are needed to licence term and security of tenure to promote the successful introduction of spectrum trading? Please be as specific as possible about the licence sector(s) and licence class(es) to which you are referring.*

We generally favour long-term licences – these will be needed for suppliers considering investment in developing new technology and installing capital equipment for spectrum over which they have only a time-limited right of use. If licences are too short, investment is unlikely to be forthcoming. This was recognised in the setting of 20-year licences for 3G operators.

Indeed, there is we believe a strong economic case for perpetual licences if accompanied by well defined scope for OFCOM to recover the spectrum in certain circumstances (e.g. for strategic policy reasons or because of pending EC harmonisation under the provisions of the Spectrum Decision). Again, though, term and security of tenure seem to us in need of consideration on a case-by-case basis.

***Question 19** What are your views on continuation of annual licence fees for traded licences?*

BT agrees with the RA that there does not seem to be any underlying conflict between the imposition of annual licence fees and a trading regime for spectrum. These might, for example, help fund OFCOM’s activities in overseeing the regime and would also reduce the extent of “windfall” capital gains. However, the level of annual fees needs to be certain and ought to be set for the lifetime of a tradable licence.

Question 20

- a) OFCOM could provide only a minimum level of information for spectrum trading (identification and some description of licensed spectrum, and ability to send a message to the licensee) and leave further information provision to the market, or OFCOM could provide higher levels of information. What is your view on the optimum level for spectrum trading of information by OFCOM?*
- b) What type of information would assist or encourage you to trade?*
- c) Should OFCOM have power to compel disclosure of market information?*

In general BT is supportive of the increased trend towards more publicly available information relating to radio frequency assignments and use. As markets work best when participants have full knowledge of options, that suggests that publication of the terms of trade might also be advantageous.

On this basis, the only data that should in principle remain exempt from disclosure is that related to national security, policing or safety of life. For example, if full public disclosure of all spectrum use, by operator and location, were available it does seem to BT that there would a greater possibility of identifying important and potentially vulnerable network nodes. This might make a strategic attack on a given network easier to undertake and, if it happened, more difficult to pinpoint potential suspects afterwards.

Provided publication does not undermine national security, policing or endanger safety of life, we think detailed assignment data ought to be available. It will enable the professional community to allow organisations to undertake their own analysis of the potential for interference, both with respect to Private Business Radio, fixed links and satellite terminals. This would enable the engineering and sales arms of organisations to state with a high probability whether a service is possible at a particular location without having to rely on a body such as OFCOM to perform such analysis. This would improve customer response time and satisfaction.

We see no reason why OFCOM should not fulfil this informational role, which is essentially one of information management and publication.

Question 21 Should OFCOM publish details of potential trades before they take place?

We are not in favour of this suggestion. Not least, at what point “before a transaction takes place” would publication occur? What would happen if the transaction did not, after all, then take place” Parties should be allowed to conclude commercial agreements in the manner that they see fit. Publication *after* agreements have been concluded might be justified on the basis of “providing information to the market”, but not publication of what can only be intentions to trade.

Change of use and reconfiguration, however, may warrant some form of pre-notification because third parties might be affected. We suggest that some form of public notification scheme ought to be adopted for such changes. Such notification for change of use and/or reconfiguration ought to apply whether or not spectrum is changing ownership (as is the case when seeking planning permission for change of property use etc.).

Question 22 *Are there topics other than those listed in Table two paragraph 17.1 that will need to be considered before Trading Regulations are finalised and trading is introduced for particular licence sectors and classes?*

An issue that does not seem to be explicitly addressed by Table 2 is that of “third party” implications. Spectrum is invariably shared between services, applications and users of those applications (there are obviously a few exceptions), and a trade between any two users, particularly if change of use and reconfiguration are anticipated, has the very real potential to affect the performance of other “third party” users’ services and the value of their spectrum.

It is mentioned in the consultation document that spectrum harmonised under the provisions of the EC Radio Spectrum Decision would not be tradable with change of use. As a further element of preparation for a trade, the acquiring party might need to have the right to know about up and coming harmonisation (and, indeed, and relevant aspects of UK strategic planning). This process would be similar in concept to the searches undertaken ahead of property deals. This does not seem to be addressed by Table 2.

Question 23 *For licence sectors and licence classes in which you have an interest how would you like to see trading start?*

This question is too general for us to offer any specific answer.

Question 24 *What steps, if any, should the Government take to recoup capital gains realised as a consequence of the introduction of spectrum trading?*

Action to recoup capital gains that follow the introduction of spectrum trading will essentially tax spectrum trades. In effect, a wedge will be created between own-use (untaxed) and market valuation (taxed), so the principal that users bear the opportunity cost of the spectrum they use will be undermined. In addition, it would mean that sellers are less likely to offer spectrum than in the absence of such a policy. The contraction of supply will mean that prices will increase for purchasers.

To the extent that the Government wishes the market for spectrum to work as well as possible, it therefore needs to resist such moves. It might also be added that spectrum trading might involve capital losses for certain parties. If there were to be a tax on those who make

gains, then a symmetrical policy would be for compensation for any suppliers who make capital losses.

Question 25

- a) *What steps, if any, should OFCOM take to facilitate the start of spectrum trading markets?*
- b) *How can OFCOM assist the development of successful spectrum trading markets?*
- c) *Do you consider that intermediaries are likely to emerge through the market if there is demand, or will OFCOM need to assist, and if so how?*

Steps that the RA might take to facilitate spectrum trading are implicit in many of BT's responses to other Questions, and in the main text. For example, we consider a public database to be vital, as would be an effective dispute resolution process. We also think that some form of public notification process for change of use and/or reconfiguration ought to be developed.

We are not sure OFCOM needs to assist in helping intermediaries to emerge. If they have value, then entry might be expected anyway and OFCOM should not prevent this. However, if they do not add sufficient value, then we would query whether OFCOM should become involved in promoting their emergence.

Question 26 *Do you agree with the analysis in the draft Regulatory Impact Assessment? Is there additional information or data you can provide to help assess either costs or benefits?*

The RA appears to have estimated the value of spectrum trading as the number of likely trades multiplied by the opportunity cost of spectrum (assumed to be two times the Agency's benchmark for valuing spectrum). This is not the net benefit to society of introducing spectrum trading.

The gains from trading is not the value of the market – i.e. the number of trades times value – but the difference in value between spectrum in one use, or with one owner, and in the next. This is obviously virtually impossible to quantify as it depends on the ability of market participants to identify and bring about better uses of spectrum (and without causing offsetting losses to third parties if this involves changes to boundary conditions). Nevertheless, it clearly distinct from the size of the market.

BT believes the gains from trading depend critically on implementation issues. It serves little purpose to hazard a guess at again from trading until these are resolved. We do, however, think it informative to cost the implementation of trading. The numbers in the Annex (less than £500,000 pa) seem to us surprisingly low.