

Terms of reference for an economic  
study of spectrum liberalisation and  
the mobile sector

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## Section 1

# Introduction

- 1.1 Ofcom is currently considering the possible extension of spectrum trading and liberalisation to spectrum used for mobile services. It has published a consultation document, [Spectrum Framework Review: Implementation Plan](#) (13 January 2005) (“SFRIP Consultation Document”) which, amongst other things, sets out some initial analysis and proposals on these issues.
- 1.2 As explained in the SFRIP Consultation Document, Ofcom considers that it is in the interests of efficient use of the radio spectrum and the promotion of competition to extend spectrum trading and liberalisation to the 2G and 3G mobile services. However, Ofcom also recognises the magnitude of the change implied by the move from the old regulatory regime to the new regime of trading and liberalisation. Ofcom considers it important to seek a smooth transition in the regulatory regime for spectrum used for mobile services and to take full account of the potential for the removal of regulation, as a result of liberalisation, to cause distortions to competition.
- 1.3 The SFRIP Consultation Document sets out some initial analysis and proposals on the issues which need to be considered before decisions can be taken on the removal of restrictions on the use of spectrum for mobile services and on the extension of trading to 2G and 3G bands (see Sections 8 and 9). In order to assist Ofcom in reaching decisions on these issues it has decided to appoint external consultants, Analysys and DotEcon, to carry out an economic study, the terms for which are set in the next section.

## Section 2

# Terms of Reference

### Objectives of the Study

- 2.1 The economic study will consider the issue of spectrum liberalisation in respect of spectrum which is currently used to offer mobile services or other spectrum which could potentially be used to offer mobile services. It is envisaged that this will have three related aspects:
- an assessment, both qualitative and quantitative, of the impact of removing restrictions on providing 3G mobile services and mobile services other than 3G;
  - an assessment, both qualitative and quantitative, of the impact of liberalising the existing 2G bands; and
  - an assessment of the range of options which exist for giving effect to liberalisation in the existing 2G bands, in particular analysing the extent to which those options address any material adverse impacts which have been identified.
- 2.2 It is anticipated that there will be significant degree of overlap between these three aspects and therefore Ofcom envisages that it is likely to be appropriate to progress work on all three aspects at the same time. The following paragraphs set out the current expectations for the study, although it should be noted some further refinements may be required as the study progresses.

### **An assessment, both qualitative and quantitative, of the impact of removing restrictions on providing 3G mobile services and mobile services other than 3G**

- 2.3 This aspect of the study is concerned with the impact of allowing spectrum not currently used for mobile services to be so used. It should consider this both in relation to spectrum which has already been awarded, but not designated for mobile services, and also spectrum which is likely to be awarded over the next 3 years. The SFRIP Consultation Document sets out details of Ofcom's proposed programme of spectrum of awards (see Sections 4, 5 and 6) and should be used to inform the analysis.
- 2.4 The main objective for this part of the study is to assist Ofcom in analysing the likely impact of the range of policy options which exist in relation to the possible removal of restrictions that prevent use of spectrum for 3G services. Some options are discussed in Section 8 of the SFRIP Consultation Document but, for convenience a summary is set out below. The study should consider the impact of the options, particularly in relation to the criteria set out in paragraph 2.13 below. It also may be necessary to consider other options or scenarios.
- Option 1 – allow removal of / do not impose restrictions that prevent use of spectrum for 3G services without a transitional period;

- Option 2 - allow removal of / impose restrictions that prevent use of spectrum for 3G services after a transitional period has elapsed; this transitional period might last to 2007;
  - Option 3 – allow removal of / impose restrictions that prevent use of spectrum for 3G services only after a much longer period has elapsed; this period might last until 2015; and
  - Option 4 – do not allow the removal of / impose restrictions that prevent use of spectrum for 3G services.
- 2.5 The study should also provide an analysis of the expected effects of allowing bands not presently used for mobile services other than 3G to provide those services.

**An assessment, both qualitative and quantitative, of the impact of liberalising the existing 2G bands.**

- 2.6 The purpose of this aspect of the study is to analyse the impact of liberalising existing 2G bands. The study should consider the impact against appropriate criteria, which may include those in paragraph 2.13 below. In considering this, it will be necessary to assess the impact given a number of different assumptions about whether the restrictions that prevent use of spectrum for 3G are removed, and if so when. Those assumptions should include the options set out in paragraph 2.4 above.
- 2.7 The key questions which this aspect of the study should answer include:
- what is the magnitude and nature of the economic value that would be realised by liberalising use of the 2G bands; and
  - what are the effects on the competitive position of different parties and on the process of competition?
- 2.8 The answers to these questions are likely to include an assessment and quantification of the following possible effects of liberalisation of 2G bands:
- Increased capacity for 3G;
  - Option value (certainty that additional spectrum is available);
  - Coverage costs;
  - Windfall gain;
  - Impact if any on the cost of capital; and
  - Impact on the efficiency of future spectrum auctions, including the auction planned for 2500 – 2690 MHz
- 2.9 This analysis needs in particular to take account of the constraints imposed by existing international obligations, in particular the GSM Directive (87/372/EEC), and the effects of the structure of competition created by the 3G auction.

**An assessment of the range of options which exist for giving effect to liberalisation in the existing 2G bands**

- 2.10 There is a range of options for introducing liberalisation including variations of existing licences and issuing new licences with a different definition of the spectrum usage rights. Also, depending in part on the assessment discussed

in the previous aspect of the study, it may also be appropriate to make the introduction of liberalisation subject to various pre-conditions.

- 2.11 The purpose of this aspect of the study is to assess the impact of the range of options for introducing liberalisation. The study should identify a range of options, which should include those set out below, and consider their impact, including in relation to criteria such as those set out in paragraph 2.13.
- 2.12 Section 9 of the SFRIP Consultation Document set out a list of initial options, which are for convenience listed below. The study should consider the merits of the following options and any other options as agreed with Ofcom:
- Option 1 – Defer the decision
  - Option 2 – Extend liberalisation by removing restrictions on existing licensees' use of the 2G spectrum. Do so under none, one or several of various possible conditions
  - Option 2(a) - Delay date of liberalisation of 2G spectrum
  - Option 2(b) - Levy an additional payment on the existing 2G licensees
  - Option 2(c) – Setting other pre-conditions or none
  - Option 3 – Extend liberalisation by issuing new licences that contain additional rights, and award these via an overlay auction

### **Criteria for assessing impact**

- 2.13 The study should assess the impacts of the various policy options in relation to the following criteria:
- Consumer benefit and economic efficiency:
    - allocative efficiency
    - productive efficiency
    - dynamic efficiency
  - Effects on the process of competition
  - Other considerations deriving from Ofcom's statutory duties, to the extent they are not already captured in the above considerations, including:
    - securing the availability of a wide range of electronic communication services throughout the UK
    - having regard to the desirability of the availability and use of high speed data transfer services throughout the UK
    - having regard to the different needs and interests of users of electro-magnetic spectrum
    - taking account of the desirability of not favouring one form or network / service over another or means of providing it
    - ensuring that unnecessary regulatory burdens are not imposed or maintained.
    - promotion of EU internal market; and

- ensuring a decision is objectively justified, non-discriminatory, transparent and proportionate.

2.14 The study should consider if there are other relevant issues not identified in paragraph 2.13.

### **Timing and Deliverables**

2.15 It is anticipated that study will be completed in approximately 3 months, with delivery of the final report around the end of April.

2.16 As part of the study Ofcom expects the consultants to meet, obtain and assess the views of interested stakeholders on the issues.

2.17 In addition to the delivery of the report, spreadsheet models with appropriate accompanying documentation used to provide the quantification of the costs and benefits identified in the report will need to be provided, together with training of Ofcom staff in their use.

2.18 It is possible that Ofcom may choose to publish the report in full or part.

### **Further Details**

2.19 Ofcom envisages that, subject to any confidentiality or other constraints, stakeholders may be given the opportunity to comment on the conclusions of the study. Ofcom expects the consultants to assist it in an assessment of those comments (subject to contract).

## Section 3

# Next steps

3.1 It is Ofcom's objective that the study should be conducted on the basis of the best possible information available and should deal with all the relevant issues. Ofcom is therefore keen for stakeholders to contribute to the study.

3.2 The relevant point of contact for the study in Ofcom is:

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3.3 Ofcom plans to progress its consideration of the issues, in light of the conclusions of the study and the responses to the SFRIP Consultation Document, later this year.