

Numbering arrangements for Voice over Broadband services

Consultation document issued by Ofcom on 24 February 2004

The purpose of this document is to determine the appropriate numbering resource for voice over broadband (VoB) services by consulting on:

- Ofcom's proposal that 056 numbers be determined as available for allocation for VoB services (including a notification of the proposed modifications to the National Telephone Numbering Plan); and
- the appropriateness of using geographic numbers for VoB services.

This document also includes:

- a consultation on a draft Direction proposing a telephone numbering application form for 056 numbers; and
- Ofcom's proposal that 055 numbers be determined as available for allocation for corporate numbering (including a notification of the proposed modification to the National Telephone Numbering Plan).

Deadlines for comments

24 March 2004 for comments on the notification of the proposed modifications to the National Telephone Numbering Plan.

24 March 2004 for comments on the draft Direction proposing a telephone numbering application form for 056 numbers.

4 May 2004 for comments on the options presented in the consultation on allocation of geographic numbers for VoB services.

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Section 1

Executive Summary

- 1.1 The purpose of this document is to determine the appropriate numbering resource for voice over broadband (VoB) services. These are emerging services that allow the end user to make and receive calls using a broadband connection, for example, using digital subscriber line (DSL) or cable broadband links. They typically use voice over internet protocol (VoIP) technology for the conveyance of calls rather than traditional telephone networks. Access to VoB services is commonly through a broadband telephone adapter, which allows the use of an ordinary telephone handset with the existing broadband internet connection.
- 1.2 VoB services raise a range of regulatory issues, one of which – telephone numbering – is the focus of this document. Ofcom (the Office of Communications) needs to consider what the appropriate numbering resource for VoB services should be as the services can differ from traditional voice telephony by offering mobility, personal rather than household access and additional features such as video and messaging services. They may also present different standard of quality guarantees. Most significantly, VoB services do not always connect calls to 999/112 emergency service telephone numbers. Where access to Emergency Organisations is unavailable, the services are not classed as publicly available telephone services (PATS) and are subject to fewer regulatory requirements than VoB services which are PATS. As a consequence, non-PATS VoB services are not required to provide consumer protection measures such as special facilities for end-users with disabilities, itemised billing and access to directory enquiries and operator assisted services.
- 1.3 Ofcom proposes that numbers in the 056 range be determined as available for VoB services. It considers that non-geographic numbers are suitable and should be available to meet the demands of Communications Providers requiring numbers to launch VoB services. None of the currently available non-geographic ranges are considered to adequately meet the requirements, although it is likely that VoB services will share a number of characteristics with services developed for corporate use and offered on the 055 corporate numbering range. Also Ofcom has been made aware, through responses to Oftel's consultation on corporate numbering and the broader policy for 05 numbers, that there exists a demand for a new and distinguishable number range for VoIP services. Therefore Ofcom believes it would be appropriate to use numbers from the 05X range, which would also provide sufficient spare capacity for future expansion. In order to make 056 numbers available for allocation for VoB services, and to confine the corporate numbering service to the 055 range, it is necessary to modify the National Telephone Numbering Plan ('the Plan'). A notification of the proposal to modify the Plan is at Annex D of this document. Comments are invited on Ofcom's proposals as set out in that modification by 23 March 2004.

- 1.4 In addition, Ofcom is also consulting in this document on whether geographic numbers are suitable for VoB services. Ofcom is unsure of their appropriateness for a number of reasons, including concerns over protection for consumers using VoB services that might not provide the same level of service as traditional telephony and the implications for number conservation. Ofcom has identified a series of options, ranging from a) allocation of geographic numbers for all types of VoB services, b) restricted allocation dependant on type of service/amount of spare numbers in a geographic code area, to c) prohibiting allocation for any VoB services. Comments on these options, which are set out in section 5, are invited 4 May 2004.
- 1.5 Finally, in order to make 056 numbers available for allocation to Communications Providers, Ofcom needs to make a direction on what it considers to be an appropriate application form for such numbers under General Condition 17.9. A notification of the draft direction is at Annex E and Ofcom invites comments on the proposed direction by 23 March 2004

Section 2

Foreword

Scope

- 2.1 Voice over Broadband (VoB) services represent a new form of market entry that is welcomed for its potential to provide additional competition in UK communications. Such services allow the end-user to make and receive calls using a broadband connection by, for example, using digital subscriber line (DSL) or cable broadband links. They typically use voice over internet protocol (VoIP) technology for the conveyance of calls rather than traditional telephone networks. Access to VoB services is commonly provided through a broadband telephone adapter, which allows the use of an ordinary telephone handset with the existing broadband internet connection. VoB services, therefore, have the potential to offer consumers access to alternative service providers, cheaper lines and calls, and advanced features, such as call messaging. However, whilst innovation and choice provide consumer benefits, they can also raise a range of potential regulatory issues. This document addresses one such issue, being the determination of the appropriate numbering resource behind which VoB services may be provided.
- 2.2 Other regulatory concerns include consumer awareness and protection, particularly with regard to access to Emergency Organisations, which is not always provided by VoB services, and security and integrity of the network. Consumer awareness concerns have some relevance to the determination of the most appropriate number range for VoB services and are, therefore, discussed to a limited extent in this document. However, it is not within its scope to examine these issues in depth. Ofcom intends to address the broader regulatory concerns raised by VoB services as part of its project work elsewhere. It is particularly concerned that consumers should be aware of the limitations of some VoB services, particularly the lack of access to Emergency Organisations and of special measures for end-users with disabilities. To this end, Ofcom is holding discussions with stakeholders on how best to address these issues.
- 2.3 Informal guidance for companies using VoIP technology to deliver communications services to customers has previously been provided by Oftel (the predecessor to Ofcom for telecommunications regulation). This guidance continues to provide relevant information on VoIP and may be viewed as an archived Oftel document accessible through Ofcom's website at:

<http://www.ofcom.org.uk/static/archive/oftel/publications/internet/2003/voip1103.pdf>

It should be noted that the issues raised by questions 10, 11 and 12 in the guidance are currently being considered by Ofcom and are explored in its discussion paper Consumer protection for Voice over Broadband, January 2004,

http://www.ofcom.org.uk/ind_groups/telecommunications/vob/ofcom_vob_discussion_paper.pdf

Presentation and consultation timescales

- 2.4 The purpose of this document is to determine the most appropriate numbering resource for VoB services by consulting on:
- Ofcom's proposal that 056 numbers be determined as available for allocation for VoB services (a notification of the proposed modification to the Plan is at Annex D); and
 - the appropriateness of using geographic numbers for VoB services.

The document also includes a consultation on a draft direction on a telephone numbering application form for 056 numbers (a notification of the proposed direction is at Annex E) and Ofcom's proposal that 055 numbers be determined as available for allocation for corporate numbering services (a notification of the proposed modification to the Plan is at Annex D).

- 2.5 As the proposals included in this document all relate to determining the appropriate numbering resource for VoB services, Ofcom has decided to publish them together in one document, ensuring that those who wish to respond to the consultations do not need to refer to other documents. Although the issues raised are related, Ofcom does not consider that they are inter-dependent (although if the proposal to make 056 numbers available for VoB is not adopted, it would not be necessary to finalise the direction on an application form for 056 numbers).

- 2.6 The result is a document that contains a number of proposals within three consultations and stakeholders should note the different deadlines for each consultation. Ofcom has allowed the standard ten week period for the consultation on geographic numbering, but considers that the one month specified by the Act is sufficient for the statutory consultations on the modification to the Plan and the draft direction on an application form for 056 numbers. It is also in line with Ofcom's guidelines on consultation procedures, which state that shorter consultations may take place if an issue needs to be addressed urgently and organisations involved require a faster timetable. As there is an urgent need to make numbering resource available so that service providers can launch their proposed VoB services, Ofcom considers that this is a situation where a shorter consultation is appropriate. Also, the guidelines state that a shorter consultation may be permitted when it is a second consultation on the same issue. Although these consultations are new, much of the policy has been debated in previous consultations. The requirement for numbering resource designated specifically for VoB services was highlighted in responses to Oftel's consultation document, Corporate Numbering: a new option for businesses, 28 March 2003 (the 'corporate numbering consultation')

<http://www.ofcom.org.uk/static/archive/oftel/publications/numbering/2003/05nums0303.htm>.

Also, the issues considered in the consultation on the draft direction for an application form for 056 numbers have been raised in the 25 June 2003 consultation on a direction on telephone numbering application forms, see

<http://www.ofcom.org.uk/static/archive/oftel/publications/numbering/2003/apps0603.htm>

2.7 The structure of the remainder of this document is as follows:

- a brief introduction to VoB services (section 3);
- Ofcom’s proposal to determine 056 numbers as available for allocation for VoB services (section 4), together with the proposed modification to the Plan to allow 056 numbers to be made available for allocation (Annex D);
- a consultation on whether geographic numbers should be available for allocation for VoB services, in general and for specific categories of VoB service (section 5);
- Ofcom’s proposed direction on an application form for 056 numbers (section 6), together with a notification of the proposed direction (Annex E); and
- additional annexes providing background regulatory and technical information.

The legal framework

2.8 Ofcom regulates the communications sector under the framework established by the Communications Act 2003 (‘the Act’). Ofcom assumed its functions, duties and powers under the Act on 29 December 2003, including the previous duties of Oftel in relation to telephone numbers. The Act provides, amongst other things in relation to numbering, for the publication of the Plan and the setting of General Conditions of Entitlement relating to telephone numbers (‘Numbering Conditions’). It also sets out statutory procedures governing, for example, the modification of the Plan and the giving of directions under conditions such as the Numbering Conditions.

The Plan

2.9 Section 56(1) of the Act states that:

“It shall be the duty of OFCOM to publish a document (to be known as “the National Telephone Numbering Plan”) setting out-
(a) the numbers that they have determined to be available for allocation by them as telephone numbers’
(b) such restriction as they consider appropriate on the adoption of numbers available for allocation in accordance with the plan; and
(c) such restrictions as they consider appropriate on the other uses to which numbers available for allocation in accordance with the plan may be put.”

2.10 The Director-General of Telecommunications (‘the Director’) (who had powers under the Act in relation to numbers at that time) published the Plan on 22 July 2003 and it came into force on 25 July 2003. Part A1 of the Plan sets out the public telephone network numbers that the Director determined to be available for allocation in accordance with Section 56(1)(a) of the Act.

2.11 The Act provides for Ofcom to review and revise the Plan. Section 56(2) states that:

“It shall be OFCOM’s duty -
(a) from time to time to review the National Telephone Numbering Plan; and
(b) to make any modification of that plan that they think fit in consequence of such a review; but this duty must be performed in compliance with the requirements, so far as applicable, of section 60.”

2.12 Section 60 of the Act provides for the modification of documents referred to in the Numbering Conditions (which includes the Plan) and explains the procedures to be followed in order to conduct this review. Section 60(2) of the Act provides that:

“OFCOM must not revise or otherwise modify the relevant provisions unless they are satisfied that the revision or modification is -
(a) objectively justifiable in relation to the matters to which it relates;
(b) not such as to discriminate unduly against particular persons or against a particular description of persons;
(c) proportionate to what the modification is intended to achieve; and
(d) in relation to what it is intended to achieve, transparent.”

2.13 Section 60(3) further provides that:

“Before revising or otherwise modifying the relevant provisions, OFCOM must publish a notification -
(a) stating that they are proposing to do so;
(b) specifying the Plan or other document that they are proposing to revise or modify;
(c) setting out the effect of their proposed revisions or modifications;
(d) giving their reasons for making the proposal; and
(e) specifying the period within which representations may be made to OFCOM about their proposal.”

Ofcom’s general duty as to telephone numbering functions

2.14 As well as publishing the Plan, Ofcom is responsible for managing the United Kingdom’s (UK’s) National Numbering Scheme (‘the Scheme’), which constitutes the day-to-day records of numbers allocated in the UK. Ofcom also has a general duty in Section 63(1) of the Act in carrying out its numbering functions, as follows:

“It shall be the duty of OFCOM, in the carrying out of their functions under sections 52 to 62 -
to secure that what appears to them to be the best use is made of the numbers that are appropriate for use as telephone numbers; and
to encourage efficiency and innovation for that purpose.”

General duties of Ofcom

2.15 The Act confers principal duties on Ofcom to be observed in the carrying out of its functions. Section 3(1) of the Act gives these duties as:

“(a) to further the interests of citizens in relation to communications matters; and
(b) to further the interests of consumers in relevant markets, where appropriate by promoting competition”.

As part of the fulfilment of these principal duties, it is Ofcom’s responsibility to secure the availability throughout the UK of a wide range of electronic communications services (ECSs), having regard to the interests of consumers in respect of choice, price, quality of service and value for money.

Duties for the purpose of fulfilling Community obligations

- 2.16 In addition to its general duties as to telephone numbers, when considering revisions to the Plan, Ofcom must also take into account the six Community requirements in carrying out its functions as set out in section 4 of the Act. These include the requirement to promote competition in the provision of electronic communications networks (ECNs) and ECSs and the requirement not to favour one form of ECN, ECS or associated facilities (AFs) or one means of providing or making available such an ECN, ECS or AF over another.
- 2.17 Similar requirements exist for the making of directions under the Numbering Conditions (see also Section 49 of the Act). The various legal tests and duties, and how Ofcom has complied with them in consulting on its proposals, are set out in the relevant sections of this document.

Regulation of VoB services

- 2.18 As described in paragraph 2.1 above, VoB services raise a range of potential regulatory issues. One key issue is that they do not always offer access to Emergency Organisations and do not always, therefore, fall within the legal definition of PATS which is defined as “a service available to the public for originating and receiving national and international calls and access to Emergency Organisations...”. Where VoB services are not PATS they are subject to fewer regulatory obligations. Annex B contains a list of the general conditions of entitlement which apply only to PATS providers (or Public Telephone Network (PTN) providers – a PTN is an ECN over which PATS are provided). In light of these more limited obligations, non-PATS VoB services are likely to limit the services offered, that is, they may not offer itemised billing or special measures for end-users with disabilities, which PATS providers are obliged to provide. A section from the Consumer Protection for VoB discussion paper (mentioned in paragraph 2.3) is included in Annex B. As also explained in paragraph 2.1, Ofcom considers that it might be appropriate to take into account these potential service limitations in determining the most appropriate number range for VoB services and this is discussed later in this document.

Section 3

Introduction to VoB services

Terminology

3.1 Terminology used in reference to voice over internet protocol (VoIP) is often used in an inconsistent manner. To avoid confusion, Ofcom uses the terms as follows:

- ‘Voice over internet protocol’ (VoIP) is the generic name for the transport of voice traffic using IP technology. The VoIP traffic can be carried on a private managed network or the public Internet or a combination of both. A wide range of applications and services could use VoIP technology, from traditional telephone services to interactive games;
- ‘Internet telephony’ (also referred to as Voice over the Internet) is a specific type of VoIP service that uses the public internet to carry the IP traffic;
- ‘Voice over Broadband’ (VoB) refers to services that allow end users to make and receive calls over a broadband connection, for example using Digital Subscriber Line (DSL) or cable. These services typically use VoIP technology and may be PATS or non-PATS. It does not include services which provide traditional multiline telephony over a high bandwidth connection, for example Integrated Services Digital Network (ISDN) 30 over Symmetric DSL (SDSL); and
- ‘Broadband’ refers to higher bandwidth, always-on services. In the context of this document, it does not imply any particular technology or minimum access speed.

Characteristics of VoB

3.2 VoB services can differ from traditional voice telephony services in a number of ways:

- access to a particular person rather than a particular household;
- mobility, for example to any location with a broadband connection;
- additional features not available with traditional telephony (e.g. integration with messaging or video);
- quality guarantees that are different from traditional telephony; and
- some VoB services provide only secondary services, i.e. are provided as an auxiliary service to traditional telephony, without the provision of access to Emergency Organisations and other consumer protection measures.

VoB services

3.3 Current consumer VoB services provide a broadband telephone adaptor to allow end users to use an ordinary telephone handset with their existing broadband internet connection as set out in figure 1 below. Delivery of VoIP services over a broadband network is an advantageous way for consumers to benefit from VoIP due to its provision of an 'always-on' connection, avoiding the need to dial-up a connection to the internet to make and receive voice calls.

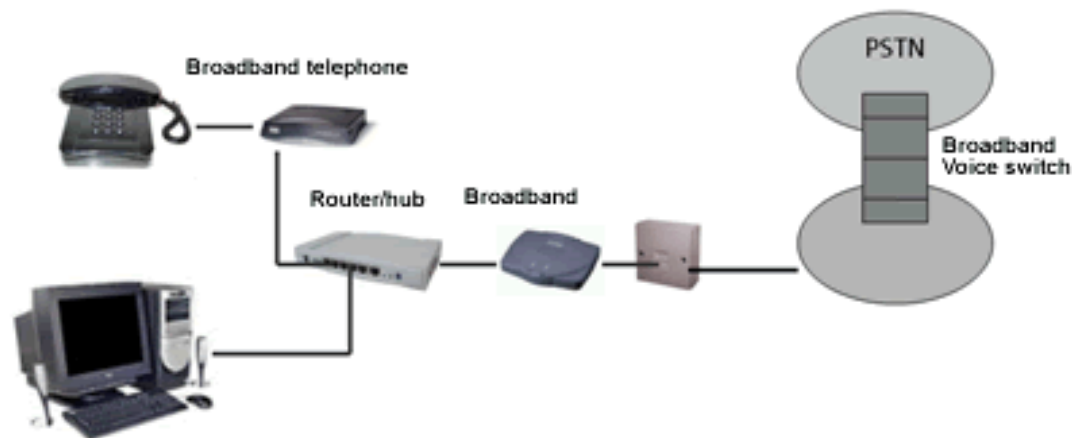


Figure 1 Example of service diagram

This diagram shows that, through the use of a telephone adaptor, an ordinary telephone handset can be connected to a router/hub which, via connections to a broadband modem and telephone socket, can route calls through a broadband voice switch onto the Public Switched Telephone Network.

3.4 Although figure 1 illustrates the typical set up of initial VoB offerings, Ofcom appreciates that there may be a range of possible variations on VoB services and, therefore, has not limited its consideration of numbering requirements to only this type of service. Some of the possible variations on VoB are:

- **Internet or managed network:** VoB services could use the public internet, simply by utilising the end users existing broadband connection. Alternatively, a managed IP network could be used which would give the VoB service provider much more control over the service offered. Managed IP networks are more commonly used for business 'IP Centrex' (or 'hosted VoIP') services;
- **Secondary line or primary line:** It is likely that VoB customers will also have a standard telephone line as well as their VoB service (this will always be the case if they are using an Asymmetric Digital Subscriber Line (ADSL) broadband connection). Although VoB and the standard telephone service would run over the same physical line, VoB effectively gives users a second telephone line as the VoB service could be used at the same time. Customers simply need to have a second handset;
- **Single VoB line or multiple VoB lines:** A single broadband connection can, depending on its bandwidth, support more than one VoB line.

Although consumers may only require one VoB line in addition to their traditional telephone line, businesses may have a need for multiple VoB lines;

- **IP only or Public Switched Telephone Network (PSTN) back-up:** Some broadband telephone adaptors can automatically use the normal telephone line as a back-up or as the preferred connection for calls to Emergency Organisations. This might allow the VoB service provider to offer a much greater quality of service than if it relied on the internet alone;
- **Standard telephone with broadband telephone adaptor or IP telephone:** A broadband telephone adaptor allows a standard telephone to be used for VoB by providing a gateway between the telephone and the IP network. Alternatively, a special IP phone could be used which could connect directly to an IP network. IP telephones can offer more features than traditional telephones, such as electronic telephone directories or built in cameras for video calling. As IP phones are more costly than standard telephones they have so far been more popular for provision of service to businesses than residential consumers; and
- **Personal computer (PC) or standalone:** A PC can be connected to the broadband connection at the same time as the VoB service, but is not needed in order to use VoB. VoB services could, however, offer integration with PC applications, for example 'click-to-call' or video calling. Note that if a PC is used for internet browsing at the same time as VoB, there might be a detrimental impact on the quality of the call.

3.5 For the avoidance of doubt, Ofcom is not considering private VoIP services, where VoIP is used solely within an organisation's private network, to be VoB in the context of this document. For example, a business that uses an IP private branch exchange (PBX) and IP telephones for its private telephone system, but which relies on a traditional telephony service (for example ISDN) for communication with the public telephone network, is not being provided with a VoB service. On the other hand, 'IP Centrex' or 'hosted VoIP' services do fall within the scope of VoB, because the service being provided to the customer is VoB as defined in paragraph 3.1.

3.6 Ofcom appreciates that there may be technical issues surrounding the provision of certain capabilities using VoIP technology and, as background, has set out its understanding of the major issues in Annex C.

Section 4

Proposal to determine 056 telephone numbers as available for allocation for Voice over Broadband (VoB) services

The proposal

4.1 The purpose of this section of the document is to present Ofcom's proposal to determine 056 telephone numbers as available for allocation for VoB services and explain its reasoning in making this proposal. Ofcom considers that it has acted in accordance with its duties referred to in section 2 of this document and that its proposal meets the tests set out in the Act, again referred to in section 2.

Demand for numbering resource

4.2 Over the past few months, Ofcom has been approached by a number of Communications Providers seeking the allocation of telephone numbers in order to launch services for residential consumers and SMEs using the consumers' broadband connections and VoIP technology. As described in section 3, to access such services, consumers would either connect an IP phone to their broadband connection or use their traditional telephone with an appropriate VoIP adapter.

4.3 It is evident from the applications received by Ofcom from Communications Providers that the preferred choice of numbering resource varies between geographic and non-geographic numbering for both PATS and non-PATS VoB services (see paragraph 2.18).

Geographic numbering

4.4 Some Communications Providers favour geographic numbering for their VoB services, particularly for residential consumers. It is argued that services would be easier to market if familiar numbering resource were used. There would also be more certainty of inclusion in calling options packages (for further discussion of the arguments made by Communications Providers for geographic numbering see paragraph 5.7). However, Ofcom believes that the use of geographic numbering for VoB services raises a number of concerns, predominantly the impact on the available numbering resource and adequate consumer protection measures. As a consequence, Ofcom is consulting on whether the use of geographic numbering should be permitted for either set of VoB services, but particularly for non-PATS services. This issue is further explored in section 5.

Non-geographic numbering

4.5 Non-geographic numbers broadly constitute PTN numbers whose digit structure does not contain a Geographic Area code and, therefore, do not have geographic significance. Ofcom's provisional view is that a non-geographic number range would be suitable for VoB services because:

- IP networks are not geographically constrained and it is expected that VoB services will often have an element of mobility, with consumers able to make and receive calls at locations other than the installation address;
- there is little relevance in using the geographic-based 'local' and 'national' call charging structure for VoB calls as the cost of call conveyance is independent of distance. There is likely to be a greater benefit in initiating a call tariff structure based on whether the call originates and terminates on the same network (on-net) (and is likely, therefore, to be cheaper) or whether the call originates and terminates on different networks (off-net). The offering of additional features, such as video-calling, is also likely to have an impact on call tariff;
- services will often have a personal rather than household focus, with individuals being allocated their own number. This would be in contrast to the general use of geographic numbering applied on a household basis;
- differentiating service characteristics of some VoB services (e.g. non-guaranteed service quality and lack of access to Emergency Organisations) could be highlighted by using a distinguishable non-geographic number;
- the numbers may be used to indicate that the services could support new features, for example, picture messages, video or personalisation services (which might use ENUM or another technology). An easily recognisable number range could signal to users the increased probability that the user's terminal supported these features; and
- a separate non-geographic range could allow networks to identify the technology likely to be used and so handle the call more efficiently.

Question 1:

Ofcom believes that non-geographic numbers would be suitable for VoB services. Do you agree?

Existing non-geographic number ranges

4.6 If a non-geographic numbering solution is considered appropriate for VoB services for the reasons given above, it needs to be considered which non-geographic number range would be suitable. The non-geographic telephone numbers available for allocation as determined in the Plan are:

05	Corporate Numbers
070	Personal Numbering Service
076	Radio paging Service
077 - 079 inclusive	Mobile Services
080	Special Services - no charge to caller
082	Special Services: internet for schools
084	Special Services: up to 5p per minute or per call, set by Terminating Communications Provider, or at Originating Communications Provider's 'Local Rate'
087	Special Services: up to 10p per minute or per call, set by Terminating Communications Provider, or at Originating Communications Provider's 'National Rate'
090	Premium Rate Content Services
091	Premium Rate Non-Content Services
092 - 099 inclusive	Broadband Services

Note: Ofcom is currently considering the designations for 084 and 087 numbers in the follow-up to Oftel's consultation 0845 & 0870 numbers: Review of retail price and numbering arrangements, September 2003,

<http://www.ofcom.org.uk/static/archive/oftel/publications/numbering/2003/0845condoc0903.pdf>

Ofcom's view is that, for the reasons given below, none of the available ranges sufficiently meets the existing and potential requirements of the VoB service.

4.7 **05 Corporate Numbers:** it should be noted that the entire 05 range has to date been designated as 'corporate numbering' whilst a consultation on the service proceeds (see paragraphs 4.15 – 4.18). However, the view expressed in the corporate numbering consultation is that in order to ensure good husbandry of the numbering resource, only the 055 range should be designated for corporate numbering.

4.8 Annex D contains the consultation on modifications to the Plan and includes a redesignation for corporate numbers as follows:

055	Corporate Numbers
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Note that this proposed modification would have no impact on existing allocations of corporate numbers as these have been made from the 055 range.

4.9 A corporate number is defined in the Plan as:

'a Telephone Number Allocated to a Communications Provider where the number is to be assigned by that Communications Provider to a specific Customer and in this definition 'Customer' shall only refer to customer which is a body corporate'

Many VoB services being proposed are aimed not only at corporates, but also small to medium businesses (SMEs) and residential consumers. In the corporate numbering consultation it was considered that there should be a specific set of eligibility criteria established for the class of persons who may be a corporate numbering end-user. Whilst it was considered that the criteria should be flexible enough to include all parties who may benefit from the service, it was felt that bodies for which the service was not designed, such as individuals and residential consumers, should not be eligible. Ofcom remains of this opinion and, therefore, the corporate numbering range would be appropriate for some, but not all, VoB services. There are considered to be some parallels between the drivers of the VoB and corporate numbering services, which are discussed further in paragraph 4.16.

4.10 07 'Find-me-anywhere' services: some of the characteristics of potential VoB services could be considered similar to those of personal numbering, that is, an element of mobility, the allocation of numbers to identify users rather than location. However, the way such calls are routed and the services (i.e. personal, paging and mobile) for which the ranges are determined do not fit easily with the expectations of the proposed VoB service.

4.11 08 Special Services: it is considered that VoB services, particularly those aimed at residential consumers, have the potential for exponential growth. Taking this likely future demand into account, Ofcom is not convinced that the 08 range would be suitable for VoB services. The 08 sub-ranges already in use (080, 0820, 084 and 087) might not offer sufficient available capacity to satisfy likely demand. Even sub-ranges not already in use, such as 085, could in time exhaust and would not offer the opportunity for future expansion. The services would be constrained by the tariff ceiling (for calls originating on the BT network) of national rate/ 10 pence for the 08 range. While this is expected to be achievable for most voice services, it may not allow sufficient scope to develop additional features at a viable tariff in a separate sub-range. Also, in order to maintain the existing pattern of differentiating tariffs by sub-range, allocations for VoB services would need to be interspersed with the existing sub-ranges. This would not allow the particular characteristics of the VoB service to be highlighted.

4.12 090 & 091 Premium Rate Services (PRS): the general characteristics of services in the PRS ranges, being call charges of over 10 pence per minute (ppm), with revenue share and the provision of information and entertainment services, are not characteristics to be shared by VoB services. In addition, access to PRS is often barred, which would not be appropriate for VoB services which are used to access particular individuals and not service providers.

4.13 092 - 099 Broadband Services: Ofcom is expecting shortly to publish a consultation on proposals to remove the 'Broadband Services' designation from the 092-099 range. The original designation was made with the intention to use the range for switched broadband services (e.g. Asynchronous Transfer Mode (ATM)), where machines, rather than people, would establish the connections. Ofcom's initial view is that it is not considered appropriate to use 092-099 numbers for VoB services due to their similarity to PRS and, hence, problems of service and high tariff perception.

Question 2:

Ofcom's provisional view is that none of the non-geographic number ranges currently determined for allocation fully meet the requirements of VoB services. Do you agree?

Designation of new non-geographic number range

4.14 Ofcom's view is that a non-geographic range would be suitable for VoB services, but that none of the non-geographic ranges currently determined for allocation fully meet the requirement. At this stage in the evolution of VoB services, there can be no certainty regarding the direction of its development. However, it is likely that VoB services available to all types of end-user would potentially share a number of characteristics with services that are developed for corporate use and are offered on 055 corporate numbers, e.g. an element of mobility and association with packet switching. It therefore seems appropriate to use part of the 05X (other than 055) range for VoB services. In addition, there would be sufficient 05X capacity to allow for future expansion.

Corporate numbering

4.15 Oftel consulted on corporate numbering, proposed as a new type of service dedicated primarily to businesses with private telecom networks, in its consultation document Corporate Numbering: a new option for businesses, 28 March 2003

<http://www.Ofcom.gov.uk/publications/numbering/2003/05nums0304.htm>

(the 'corporate numbering consultation').

As part of the corporate numbering consultation, Oftel anticipated that a common characteristic of corporate numbering services would be the provision of a unified means of accessing a wide range of services, including VoIP services for corporate customers. It was proposed in the corporate numbering consultation that, whilst the Scheme is technologically neutral, there might be benefits in identifying the needs and capabilities of end-users in order for the appropriate network, i.e. IP or circuit switched, to be used for establishing communications. This would enable recognition of calls that might benefit from being conveyed wholly or partly over IP networks. For example, consumers may want the ability to call a PC or VoIP terminal from their telephone or PC and possibly benefit from cheaper or flat rate tariffs for the call. In order to exercise this control, it would be beneficial if callers, before commencing a call, could distinguish the capabilities of the called party.

4.16 In the corporate numbering consultation, it was considered that a distinguishable number range might offer the best means of advertising, at the start of the call, that the called party was using IP technology. Indeed, some countries have set aside part of their numbering schemes exclusively for IP or VoIP telephony. For example, Korea has designated a non-geographic number range for inbound VoIP calls. Japan has opened the 050 number range for IP telephony services with features different from existing fixed telephony services. In both cases, a specific number range for IP telephony was deemed necessary to highlight the different capabilities of the service.

European National Regulatory Authorities (NRAs) are looking at the issue of appropriate numbering for VoB services alongside Ofcom, with some NRAs also considering the determination of a dedicated non-geographic range for VoIP services. It seems to Ofcom that much of the service description and considerations outlined in this and the previous paragraph could just as easily be applied to residential VoB services. As discussed above, it may be to the consumer's advantage if it was possible to highlight the capabilities of the VoB services by the telephone number. Clearly, this would require an allocation of numbers from a new and distinguishable number range. It could also be considered that both business and residential customers using VoIP services should share a common generic numbering range, i.e. the 05 range.

4.17 The corporate numbering consultation provided for the prospect of services developing that may have similarities to the corporate numbering service (as described in the document) and which could possibly use numbering from the 05 range in the future. Paragraph 4.20 of the corporate numbering consultation document stated that:

“Reserving the remaining 05X sub-ranges would ensure capacity was available for various forms of the corporate numbering service. Such services may differ in significant ways from the type of corporate numbering service consulted on in this document. This may be in terms of allocation criteria, tariff rate and interconnection arrangements and these differences may need to be conveyed by means of the 05X sub-structure. For example, services could be developed in the corporate numbering 055 range, which in time, could be evolved for individual or residential users. Unlike services in the 055 range, it is likely that numbering for such services would be allocated to communications providers only and that the end-user criteria would not be limited”.

4.18 Ofcom proposes to modify the Plan so that 055 numbers are determined for corporate services and 056 numbers for VoB services. If this proposal is adopted, Ofcom recognises that for some services there will inevitably be an overlapping of eligibility to the two numbering groups. For instance, a VoB service developed for corporates or SMEs could conceivably be offered on either 055 or 056 numbers. This would not necessarily create difficulties. It might be that in time VoB services offered on 055 numbers will be associated with higher quality of service guarantees, catering for the elevated demands of corporate customers willing to pay extra, for example, for managed IP networks and mobile access when travelling with a Wireless Fidelity (Wi-Fi) enabled laptop. In contrast, VoB services that might evolve on the 056 range may become more closely associated with non-PATS residential services, which would offer a limited list of functions and facilities reflected in the reduced cost of provision and calls.

4.19 In proposing to modify the Plan so that 055 numbers are determined for corporate numbering, Ofcom is making a statement in response to one aspect of the corporate numbering consultation, that is, the formal designation of 055 numbers as available for allocation for corporate numbering. A full statement on the outcome of the corporate numbering consultation is being prepared by Ofcom and will be published in the coming months.

Demands for a dedicated VoB range

4.20 Ofcom's proposals to designate the 056 range for VoB services are due, in part, to responses received to the corporate numbering consultation. A number of the responses supported the concept of the 05 range, or part of it,

being used for VoIP services for both corporate and residential consumers. This is demonstrated by a selection of comments received on the consultation reproduced below:

(Note: full submissions to the consultation may be viewed at

<http://www.ofcom.gov.uk/publications/responses/2003/05nums0303/index.htm>)

“a new multimedia service..will begin to emerge as convergence develops, which in time may need to be defined as a number range that is used for various general services not just large businesses” (ntl)

“it may be appropriate to use a separate number range for VoIP services, if those services include functionality and features that require identification by end users” (Cable & Wireless)

“the telecom industry seems to be rather more interested in a range for VoIP (or other voice over packet technologies)” (BT)

“BT believes that VoIP multimedia services need a numbering range not currently being met outside 05. However, BT does not believe that the range should either be technology dependent or the benefits confined to corporate customers. The range should be used for services that allow users to be able to make and receive calls from and at any fixed location with multimedia capability.” (BT)

“Right now, VoIP services suffer from incomplete strategies in identification and existence in the world of telephony” (Ednet)

4.21 In addition to the comments received, Ofcom has met with Communications Providers seeking allocations of numbering in order to offer their proposed VoB services. It has become apparent, as discussed in paragraphs 4.6 - 4.13, that existing non-geographic ranges do not meet those Communications Providers’ numbering requirements.

Question 3:

Do you agree with Ofcom’s proposal to make 056 numbers available as a dedicated non-geographic number range for VoB services and why?

Allocation of the 056 range

4.22 Ofcom has taken an initial view regarding the allocation policy of the 056 range as follows:

4.23 **End-user criteria:** end-user eligibility for 056 numbers would be unrestricted. Whilst the primary demand for numbering resource which needs to be satisfied is possibly for residential VoB services and, in particular, for non-PATS VoB, 056 numbers would be available to all end-users, including SMEs and corporates;

4.24 **Application criteria:** applications for blocks of numbers would be submitted by providers of Public Electronic Communications Networks (PECNs) and Public Electronic Communications Services (PECSs) to Ofcom in line with its

usual application procedure on the appropriate application form (see draft Direction at Annex E);

- 4.25 **Sub-structure of 056 range:** no sub-structure is proposed at this time, although it could be considered if consumers and/or Communications Providers would find benefit in divisions according to, for example, tariff;

Question 4:

Ofcom has not proposed a sub-structure for the 056 number range. Do you think one should be imposed and, if so, on what basis and for what advantage?

- 4.26 **Block size and number length:** 056 numbers would be allocated in blocks of 10,000 numbers. Numbers would be the standard digit length of '0' plus 10 digits (i.e. 11 dialled digits);
- 4.27 **Retail price:** it is crucial in successfully meeting consumers' needs that the cost of calling 056 numbers is not conceived as a barrier to their use. The corporate numbering consultation proposed a relatively low tariff ceiling of around 10ppm for 055 numbers and Ofcom considers that the principle of a low tariff ceiling should be extended to the 056 range. Moreover, Ofcom believes that due to the use of packet rather than circuit switching for the delivery of calls, it is conceivable that a tariff ceiling of 5ppm would allow sufficient revenue to support VoB services.

Question 5:

Ofcom suggests that the 056 range should have a tariff ceiling of no higher than 5ppm. What are your views on setting a tariff ceiling for 056 numbers at this level?

- 4.28 The proposed designation of the 056 range for VoB services is designed to meet a demand for numbering. It could be considered that the demand is the establishment of a non-geographic range which would be treated by Communications Providers in line with their treatment of geographic numbers. Therefore, Ofcom considers that it would be desirable if the cost of calling 056 numbers from fixed lines was to be no more expensive than the cost of calling geographic numbers. If such services are to provide a form of substitution for geographic services, then it would also be desirable for consumers if such services were to be included in Communications Providers' calling options packages (for example, calling circle schemes, inclusive call allowances or 'all you can use' packages). Inclusion of calls in such schemes varies between Communications Providers and number ranges, and whilst it would remain the commercial decision of the Originating Communications Provider, inclusion of 056 numbers in discount schemes would be encouraged.
- 4.29 A further issue would be the cost of calling 056 numbers from mobiles. The mobile Communications Providers generally charge higher tariffs for calls to non-geographic numbers than for calls to geographic numbers. As many VoB services are to be marketed as second lines, a likely target for the service would be teenagers and calls to and from mobiles would be prevalent. Ofcom considers that it would be desirable if mobile as well as fixed Communications Providers considered treating 056 numbers like geographic numbers in terms

of retail pricing and discounts. Ofcom notes, however, that Communications Providers' decisions about tariffing of 056 numbers are likely to depend on the interconnection arrangements negotiated for this range.

Question 6:

Ofcom suggests that fixed and mobile Communications Providers should consider treating 056 numbers like geographic numbers in terms of retail pricing and inclusion in calling options schemes. Do you agree that this would be a desirable approach?

4.30 Interconnection arrangements: Ofcom notes that calls to 056 numbers would not meet the definition of Number Translation Services (NTS) calls as set out in the Significant Market Power (SMP) condition relating to the requirement to provide NTS Call Origination. This condition was imposed on BT following Oftel's Review of the fixed narrowband wholesale exchange line, call origination, conveyance and transit markets, 28 November 2003. It requires that BT (as the Dominant Provider) shall pass the retail call revenue less permitted charges to the Communications Provider terminating the NTS call. Ofcom considers it appropriate that calls to 056 numbers are beyond the scope of that condition, as 056 numbers are generally intended to be used for calls to individuals. This differs from NTS calls, which are intended for the provision of value added services, e.g. travel information, and for Premium Rate Services, e.g. entertainment services. The provision of non-freephone NTS services relies on retail revenue being passed from BT to the Terminating Communications Provider to fund the provision of the service. As the NTS Call Origination condition is not relevant to 056 numbers, BT would not be required to pass retail revenue to VoB Terminating Communications Providers and service providers in the same way that it does for NTS calls. This would mean that revenue sharing between Terminating Communications Providers and end-users would be unlikely. In any case, Ofcom considers that such a sharing of revenue with end-users would be unjustified and undesirable for 056 numbers, as neither party would be considered to add value to the inbound call. Also, the relationship between retail price and interconnection means that revenue share increases the possibility that retail prices may become inflated.

4.31 Carrier pre-selection (CPS) and number portability: for the avoidance of doubt, calls to 056 numbers would be included in the CPS 'all calls' option. 056 numbers would be considered portable, although it should be noted that portability is only a requirement between providers of PATS. Hence, subscribers of non-PATS services should bear in mind that they would not have a right to port their telephone number.

Appropriate designation of 056 range with regard to technological neutrality

4.32 As explained in section 2 of this document, it is one of the Community requirements set out in section 4 of the Act that regulation should be technology-neutral. It could, therefore, be considered inappropriate to designate a number range according to the technology used to deliver the service. In order to remain technology neutral, it may have been considered preferable to select a 'catchy' title, e.g. 'new generation' voice services, which could be used to represent the distinctive characteristics of the service (as described in paragraph 3.2).

4.33 Alternatively, it could be considered that due to the technology used for delivery of the calls, the characteristics of the service would differ, arguably resulting in a different service. As stated in paragraph 3.2, it is likely that VoB services will differ in one or more ways from telephone services that use traditional circuit switched technology. These services are described throughout this document as Voice over Broadband or 'VoB'. Ofcom considers that possibly the best way to ensure that Communications Providers requesting numbering resource, and consumers using the service, clearly understand these probable differences is to be explicit in the designation about the technology used. However, this would make no difference to the way the services were regulated.

Question 7:

Ofcom proposes to designate the 056 range as 'Voice over Broadband services'. Do you have any comment on this designation, for example, with respect to its reference to technology?

Conclusions to Section 4

- 4.34 As set out above, in making its proposals to designate 056 numbers for VoB services, Ofcom has taken into account that:
- there is a demand for appropriate numbering resource for VoB services;
 - from a regulatory perspective there are two variants of VoB service – PATS and non-PATS;
 - there are also two types of numbering resource for which prospective service providers have applied – geographic and non-geographic;
 - Ofcom's view is that non-geographic ranges already determined as available for allocation in the Plan do not fulfil all the requirements for an appropriate numbering resource for VoB services;
 - Ofcom sees similarities between VoB services and services developed for corporate use, which it is also proposing should be the designation for the 055 range;
 - accordingly, Ofcom has proposed the determination of a dedicated VoB number range – 056 - for use by PATS and non-PATS VoB services;
 - comments on this proposal are requested by 23 March 2004; and
 - whilst it believes that a dedicated non-geographic number range would be appropriate for VoB services, Ofcom is unsure whether the use of geographic numbers for VoB services would also be appropriate and its consultation on the issue is set out in section 5 of this document.

Legal tests

4.35 As stated in paragraph 4.1, it is Ofcom's duty when proposing a modification to the Plan and the introduction of a new telephone numbering application form that it shows how it considers that its proposals comply with the legal tests in the Act.

4.36 This consultation invites comments on the notification of proposals to modify the Plan at Annex D.

4.37 The effect of the modification will be to determine 056 Telephone Numbers as available for allocation for VoB services and the 055 range for corporate

numbering. Ofcom is satisfied that the proposal for a modification to provisions of the Plan meets the tests set out in Section 60(2) of the Act (see paragraph 2.12) being:

- objectively justifiable, in that it relates to Ofcom's duty to publish a Plan and is justified in order to ensure that appropriate numbering resource is available for VoB and corporate numbering to meet Communications Providers' requirements and to encourage innovation by making the numbering resource available;
- not unduly discriminatory, in that all Communications Providers eligible to apply for Telephone Numbers may apply to Ofcom for an allocation of 056 and 055 numbers;
- proportionate, in that the proposed modification to the Plan is the minimum revision to its provisions necessary to make 056 numbers available for allocation and determine the 055 range for corporate numbering. A modification of the Plan to determine a dedicated number range for VoB services is considered less burdensome than requiring innovative VoB services to meet the characteristics of existing number ranges; and
- transparent, in that the Notification proposing the modification to the Plan and its effect are set out in this consultation.

4.38 Ofcom considers that it is fulfilling its duty in Section 63 of the Act in making its proposals (see paragraph 2.14) by:

- securing the best use of appropriate numbers, in that the proposal would make available for allocation to eligible Communications Providers a new and dedicated non-geographic number range for VoB services, thus ensuring that appropriate numbering resource is available for VoB and for corporate numbering services. The proposal also takes account of the need to ensure sufficient future capacity for numbering resources; and
- encouraging efficiency and innovation, in that the proposal ensures that an appropriate numbering resource is determined as available for innovative services and that access to numbering resource on which to offer a service is not a barrier to the launch of new ECSs.

4.39 Ofcom considers that its proposals are consistent with its general duties in carrying out its functions as set out in Section 3 of the Act (see paragraph 2.15). In particular, it considers that the proposals further the interests of citizens in relation to communications matters and consumers in relevant markets by supporting the more widespread use of VoB services, thus promoting competition in communications. This also helps to secure the availability throughout the UK of a wide range of ECSs (which include VoB services and corporate numbering).

4.40 In proposing the modification to the Plan, Ofcom also has considered the Community obligations set out in Section 4 of the Act (see paragraph 2.16), particularly the first requirement to promote competition in the provision of ECNs and ECSs, in that it supports the development of innovative services and choices for consumers. Also, Ofcom has considered the fourth requirement to take account of the desirability of its carrying out its functions in a manner which, so far as practicable, does not favour (a) one form of ECN, ECS or AF or (b) one means of providing or making available such a network, service or facility, over another. In Ofcom's view, as explained in paragraphs 4.32 – 4.33 above, the determination of the 056 range for VoB services, whilst referring to a means of providing an ECS in the number range title, does so in order to make clear the main characteristics of service provided behind the number range and not to promote that means of provision above any other.

Question 8:

Ofcom proposes to modify the Plan so that 056 numbers are available for allocation for VoB services and 055 numbers are available for allocation for corporate numbering services? Do you have any specific comment on the proposals to modify the Plan in this manner?

Section 5

Consultation on allocation of geographic numbering for VoB services

The consultation

- 5.1 The purpose of this section of the document is to consult on whether it is appropriate for Ofcom to allocate geographic numbers to Communications Providers for the provision of VoB services in general and for different categories of VoB services in particular. Ofcom is unsure whether geographic numbers are suitable for VoB services, particularly for those which are not PATS (see paragraph 2.18), because of the potential it can foresee for consumer detriment stemming from expectations of what the service will provide.
- 5.2 As mentioned in section 4, current applications submitted by Communications Providers requesting numbering resource for VoB services are divided between requests for non-geographic and geographic numbering. As set out in that section, Ofcom's provisional view is that non-geographic ranges are suitable for VoB services of all types and that such a proposal meets the legal tests in the Act. However, Ofcom is unsure whether the allocation of geographic numbers is appropriate and is consulting on a number of options for the possible approach to geographic numbering and VoB services.

Arguments for and against the allocation of geographic numbers for VoB services

Definition

- 5.3 The first issue to consider is the following definition of geographic numbers taken from the Plan, which limits the scope of the applicable designation:

'a Telephone Number, from a range of numbers in Part A of this document ..(the Plan).., where part of its digit structure contains a Geographic Area Code..that is Adopted or otherwise used for routing of calls to the physical location of the Network Termination Point of the Subscriber to whom the Telephone Number has been assigned, or where the Network Termination Point does not relate to the Geographic Area Code but where the tariffing remains consistent with that Geographic Area Code'.

- 5.4 In considering whether geographic numbering is suitable for VoB services, Ofcom notes the following factors:
- the Geographic Area Code in the digit structure is used for routing of calls;
 - the call is routed to the physical location of the subscriber to whom the number has been assigned; and
 - where this does not relate to the Geographic Area Code, tariffing for the call remains consistent with the Geographic Area Code.

In section 3, which introduced VoB services, it was noted that the services would commonly feature mobility, meaning that 'the physical location of the

Network Termination Point of the Subscriber to whom the Telephone Number has been assigned' would habitually change and conceivably to a Geographic Area Code different from the one forming part of the number's digit string. This would have the likely result of the tariff being inconsistent with the Geographic Code Area. Therefore, with particular respect to the definition of geographic numbers, Ofcom's preliminary view is that geographic numbering is not suitable for VoB services featuring mobility.

Consumer perception

5.5 Aside from the regulatory definition of geographic numbers, Ofcom believes that there is the common understanding by consumers that a service with a geographic number is something with which they are familiar – that is, they have a general appreciation of the cost, the quality of the call and the consumer protection features associated, such as access to Emergency Organisations. It could be argued that if this most recognisable of numbering resource was to be used for new generation services, with features different from those associated with standard telephony voice services, then consumers might not be made adequately aware of the differences. This may not be such an issue if the VoB was a PATS, i.e. it offered access to Emergency Organisations and, hence, was subject to more regulatory obligations to offer consumer protection measures. However, if the VoB service was a secondary non-PATS service, important distinctions may be unappreciated. This is discussed further in paragraphs 5.17 – 5.19.

Legal requirements

5.6 As referred to elsewhere in this document (especially section 2), in carrying out its telephone numbering functions including making modifications to the Plan, Ofcom has a general duty to secure that best use is made of telephone numbers. It must also ensure that it complies with its statutory duties under Sections 3 and 4 of the Act and other relevant parts of Sections 56 to 63 of the Act (see paragraphs 2.8 – 2.17). Therefore, the outcome of this consultation on the appropriateness of using geographic numbers for VoB services must take those statutory duties into account and, in particular, be objectively justifiable, non-discriminatory, proportionate and transparent. In practice this means that there must be an objectively justifiable reason to deny allocation of geographic numbers to the providers of all or some types of VoB service, in order to demonstrate that particular ECNS or ECSs were not being discriminated against. It also means that Ofcom's regulation of numbers must be the least burdensome for Communications Providers.

Arguments in support of allocating geographic numbers for VoB services made by Communications Providers

5.7 It has come to Ofcom's attention, partially through current applications for numbering for VoB services, that some Communications Providers favour geographic numbering. They have stated the reasoning behind such preference as:

- **Recognisable number range:** it has been suggested that consumers' familiarity with a type of number range may influence whether service is taken from a particular Communications Provider and also whether consumers will make calls to that number. Consumers are accustomed to calling 01 and more recently 02 geographic numbers, arguably gaining some meaning from the number range (a 'normal' landline with a

perception of call charge). However, consumers may be unfamiliar with non-geographic numbers as a whole and would clearly be unaware of 05 numbers at this point in time, possibly resulting in concern regarding tariff and service;

- **Ease of competing with other services with geographic numbers:** it is vital in stimulating competition from new entrants and promotion of new services that barriers to entry are reduced. Access to the appropriate numbering resource is seen as a vital component of service provision. If service providers feel that if they are denied access to their chosen type of numbers, then they might feel that they are effectively being prevented from competing on an equal footing;
- **Portability of existing geographic number:** number portability, a facility enabling consumers to retain their existing number when changing their Communications Provider, is a key facilitator of consumer choice and effective competition in the telecommunications environment. Some Communications Providers may argue that the scope for competition would be reduced if the take-up of their service necessitated a different telephone number, because the existing geographic number provided by the current service provider could not be used to offer the new VoB service and therefore could not be ported. However, it should be noted that the right to port a number only exists between providers of PATS;
- **Retail price and interconnection arrangements:** interconnection and charging arrangements for calls to geographic numbers are well established, providing some certainty over call costs and the flow of revenue. Communications and service providers may feel that the lack of established arrangements for new ranges, such as 056 numbers, could leave them exposed. The retail tariff for calls to 056, whilst anticipated to be similar to headline geographic tariffs for calls from landlines, would not be established for calls from mobiles. The new VoB services generally offer personalised numbering and an element of mobility. It is likely that the services would be targeted as second lines for different members of the household, often teenagers, whose calling circle is likely to use mobile phones to make calls. Potential customers may question the desirability of being contacted on a telephone number that would cost their calling circle more money to access;

and

- **Eligibility for inclusion in calling options packages:** Communications Providers' calling options packages vary as to whether they include non-geographic calls within the packages (for example Calling Circle schemes, inclusive call allowances and 'all you can use' packages). Inclusion of calls to geographic numbers is more standardised, potentially offering substantial discounts to subscribing consumers. It has been suggested that consumers are becoming increasingly dissatisfied with the different treatment given to geographic and non-geographic numbers. As Terminating Communications Providers and service providers can not be assured of the treatment likely to be given to 056 numbers by Originating Communications Providers, they may feel their potential customers would be disadvantaged if non-geographic numbers were used.

Ofcom's views on allocation of geographic numbers for VoB services

5.8 It is Ofcom's duty to ensure that the best use is made of the UK's numbering resource, which entails making decisions on the appropriateness or otherwise, of a type of numbering for a particular type of service. Ofcom is uncertain whether geographic numbers are suitable for VoB services, in particular non-PATS services, and is concerned about the likely impact on consumer protection and available numbering resource, hence, it is consulting on the appropriateness of allocating geographic numbering for VoB services.

5.9 Section 4 of this document presents Ofcom's arguments for the appropriateness of determining a dedicated non-geographic range for VoB services. Paragraph 4.5 listed the reasons why a non-geographic range was considered to be preferential to a geographic range for VoB, which may be summarised as follows:

- IP networks are not geographically constrained; with many services offering an element of mobility;
- a distance-related call tariff structure would have little relevance for VoB;
- VoB services would have a personal rather than household focus;
- consumer protection issues would be raised for many VoB services, e.g. lack of access to Emergency Organisations; and
- there are different service characteristics, e.g. packet-switching, added features, personalisation.

5.10 Ofcom believes that the above arguments may support a view that geographic numbering is not appropriate for VoB services. Its initial view on the arguments put forward by Communications Providers are as follows:

- **Recognisable number range:** there may be some merit in the argument that consumers feel more comfortable making calls to recognisable numbers, but the growth of the VoB service will inevitably make consumer contact with 056 numbers more commonplace, as was the case with mobile numbers.
- **Ease of competing with other services with geographic numbers:** it may be that the outcome of this consultation is that PATS VoB services marketed as substitutes for traditional voice services may be allocated geographic numbers. This would ensure that broadly similar services (from a regulatory and consumer perspective) would have equal access to the geographic numbering resource. It could be argued that non-PATS services, which are marketed as secondary to traditional voice services, are not competing with traditional services using geographic numbers and therefore the argument that the services should have the same numbers to compete fairly is not justified.
- **Portability of existing geographic number:** number portability between providers of PATS is a consumer right and would be provided in line with current and future portability procedures if geographic numbering was to be allocated to PATS VoB services.
- **Retail price and interconnection arrangements:** arrangements would need to be negotiated for 056 numbers and could become more relevant to the VoB service than existing arrangements. Ofcom believes it is worth pointing out that the 056 range could evolve to offer a 'non-geographic'

version of the arrangements established for geographic services. Ofcom would be interested in hearing how Originating Communications Providers would plan to charge for calls to 056 numbers.

- **Inclusion in calling options packages:** as with the arrangements for retail price and interconnection, Ofcom believes that the successful use of 056 numbers for VoB services would be promoted if they were treated by Originating Communications Providers in a way similar to geographic numbers. This would mean the standard inclusion of 056 numbers in calling discount packages, allowing consumers discounts on calls in line with those they would have received if the call had been made to a geographic number. Again, Ofcom would be interested in hearing from Originating Communications Providers as to whether calls to 056 numbers would be eligible for discounts.

Question 9:

Communications Providers have put forward arguments (involving consumer perception and ease of competing with existing services) in support of allocation of geographic numbers for VoB services and Ofcom has provided its thoughts in response. What are your views?

Question 10:

Ofcom would be interested in hearing views from fixed and mobile Communications Providers as to how they might charge for calls to 056

Number capacity

5.11 Ofcom must also consider the impact of allocating geographic numbers for VoB on the availability of the geographic numbering resource, as part of its duty to ensure that best use is made of telephone numbers. VoB has the potential for exponential growth, particularly as service providers would not be geographically restricted to service areas with physical points of connection. New entrant service providers are likely to seek an allocation of numbers in many and possibly every Geographic Code Area in order to offer their services nationwide. Due to ECN routing constraints (and apart from Conservation Areas, which are Geographic Code Areas with 20 or fewer blocks available for allocation), geographic numbers are allocated to Communications Providers in blocks of 10,000 numbers. In most areas the majority of providers would require far fewer numbers; however, in order to have presence in each area, providers would need to be allocated the minimum 10,000 number block. The risk of running out of numbers has not previously arisen in many of the areas with limited available capacity, because it was extremely unlikely that providers would have entered into those areas using traditional access means. The direct result is that 5-digit code areas such as Hornby (015242), Hawkshead (015394), Wigton (16973) and Appleby (017683) would require a code change if new providers entered the market for communications provision in those areas.

5.12 A table included at Annex F demonstrates the effect on geographic numbers if one to ten service providers entered into the provision of VoB on a nationwide basis. To allocate geographic numbers in all code areas for VoB services would result in the very real threat of code changes. For instance, if

five new entrants requested a block in each area, there would be a need for an immediate code change in eleven areas. If a further five providers requested similar allocations, five more geographic area codes would need changing. It is likely that, in time, more than ten service providers would propose a similarly widespread VoB service, increasing the threat of additional code changes. There are strong indications that at least this number of providers will seek allocations of numbers for VoB services in the coming year.

Potential VoB services

5.13 Ofcom notes that there are different types of VoB services available and that this needs to be taken into account in determining whether geographic numbers are suitable for some or all types of VoB services.

Publicly Available Telephone Services (PATS)

5.14 Some VoB services aim to compete directly with the existing PSTN service and provide access to all the services an end-user would expect from traditional voice telephony including access to Emergency Organisations (e.g. 999/112 calls). Such services would be PATS.

5.15 Providers of VoB services considered to be PATS have a number of important obligations on them flowing from the General Conditions, for example, Condition 3: Proper and effective functioning of the network; Conditions 4 and 5: Emergency call numbers and planning; Condition 12: itemised bills and Condition 15: Special measures for end-users with disabilities – see Annex B for further detail. This ensures that although the voice service would be delivered via different technology, the end-user would enjoy the same facilities as users of more traditional voice telephony.

5.16 VoB services can potentially comply with these conditions, for example, by avoiding the public internet and employing a technical solution using the PSTN as a backup line solution or through the service provider using a managed IP network. Annex C outlines some of the technical issues that VoB providers need to consider if they are to offer a PATS service. Ofcom considers that it may be more likely that geographic numbers are suitable for VoB services which are PATS, as they are more akin to traditional telephony services (save for those which offer mobility – see paragraph 5.20 below).

Non-PATS VoB services

5.17 An alternative set of VoB services are marketed as secondary services to traditional PSTN voice telephony and do not offer access to Emergency Organisations. These typically rely on the public internet and are generally aimed at providing residential consumers with a means of making cheap calls and/or a cheap second line rental.

5.18 It is likely that some services will provide a price versus quality of service trade-off and provide cheap voice calls with a lower quality of service than traditional telephone services. This raises the question that if 'traditional' numbering (i.e. geographic numbering) was used to access these services, the calling party might not be aware in advance that they were calling a customer connected to a VoB service and would not be alerted to the possibility of a differing quality of service. Although Ofcom's preliminary view is that telephone numbering should not be associated with voice quality, it remains

that such a differentiation may be a useful consequence of using a dedicated numbering range for, at least, non-PATS VoB services.

5.19 As well as non-guaranteed quality of service, this set of VoB services often cannot provide access to 'lifeline' telephony. Lifeline telephony means not only access to the 999/112 emergency services, but to other nationally important helplines on which peoples' lives may depend, commonly termed 'safety of life' numbers. (For clarity, in the past, 'lifeline service' has also embraced the topic of line powering, however, for the purposes of this document, it is not included). Safety of life services include Childline (0800 1111), the National Health Service non-emergency number 'NHS Direct' (0845 4647) and the Royal National Institute of the Deaf (RNID) 'Typetalk' Text Relay Emergency Service (18000). This raises concerns if the service offered is accessed by means through which an end-user might reasonably expect to access lifeline telephony, particularly if the equipment used to make the call resembles traditional telephony equipment. Ofcom is separately considering the most appropriate means to address this issue and will be discussing proposals with stakeholders. However, it considers that these issues are also relevant in determining which numbering resource is appropriate for VoB services, because of the potential for consumer detriment stemming from expectations of level of service, which in Ofcom's view is likely to be influenced in part by the number range allocated to a service (although it recognises that at the point of use a user may not be aware of the number and is more likely to be influenced by the apparatus used to make the call, i.e. whether a normal telephone is used). Again, therefore, Ofcom is particularly unsure whether non-PATS services would be suited to a geographic numbering range.

VoB services offering mobility

5.20 It is expected that one of the defining features of VoB services will be an element of mobility, e.g. the use of laptops from any location with a broadband connection. In particular, in light of the definitional issues highlighted in paragraphs 5.3 – 5.4 above, Ofcom considers it unlikely that providers' of VoB services offering mobility should be allocated geographic numbers, but would welcome comments on this issue.

Question 11:

VoB services might offer an element of mobility – do you think that this raises definitional issues for geographic numbers?

Options under consultation

5.21 Ofcom is unsure at this stage whether geographic numbering is appropriate for some or all types of VoB services and as described above, has some concerns about the potential impact of allocating geographic numbering for VoB services. It has identified the following four options for stakeholders' consideration. Option one has five sub-options which reflects its impact on the numbering resource. In fact, each of the options would have an impact, to a varying extent, on consumers and on the electronic communications industry. Code changes and modifications to networks both cause considerable investment and Ofcom is hoping that informative data on the impact are included with responses to help it reach the most appropriate conclusion.

Option 1: Allocate to all VoB services

Option 1 would be to permit the allocation of geographic numbering for both sets of VoB services (PATS and non-PATS). No distinction would be made between a VoB and a PSTN voice call. This would have an inevitable impact on numbering conservation and one of the following sub-options would need to be initiated in order to make the necessary capacity available:

- 1a) 'Do nothing' – providers of all VoB services would be eligible to apply for allocations of geographic numbers. Numbers would continue to be allocated in 10,000 number blocks. Code changes would be necessary with, in some areas, limited forewarning.
- 1b) 'Set aside' – 1 x 10,000 number block in each geographic area is set aside for allocation at the 1,000 number block level (rather than the standard 10,000 number block level) for VoB services only, in order to conserve numbering capacity. Further 10,000 number blocks would be set aside when required – in some areas this would lead to a code change.
- 1c) 'Conservation policy' – all 01 geographic areas move to conservation status with allocation at 1,000 number block level. Timescales would need to be agreed with the electronic communications industry, but would need to be imminent. Currently there is controlled movement of areas to conservation A status when they are within two years of having less than ten spare 10,000 number blocks available for allocation.
- 1d) 'Wide Area Code policy' – wholesale move to Wide Area Codes, without moving to conservation measures to avoid code changes. Wide Area Codes encompass a much larger area than the Geographic Code Area, e.g. 028 for Northern Ireland. This option has the result of widespread code changes, many in areas before demand would have made a change necessary. This would have a major impact on citizen-consumers and the electronic communications industry.
- 1e) 'New geographic code area' – a new '01' code is created to act as a 'national' geographic code. It would essentially be a non-geographic code, providing negligible, if any benefit above existing non-geographic codes and the proposed 056 code and is likely to have complications for the electronic communications industry. There would also be no guarantee that the new 01 code would be treated as a geographic code by Originating Communications Providers in terms of call tariffs and inclusion in calling options packages.

Option 2: Allocate to PATS VoB only

Option 2 would permit the allocation of geographic numbers for VoB PATS services only, thus taking care of consumer protection concerns and reducing the impact on geographic numbering resource. Option 2 might still require some of the above a) to e) options designed to conserve capacity.

Option 3: Allocate to PATS VoB in abundant areas

Option 3 would permit geographic numbers for VoB PATS services only, and then only in areas with sufficient available numbering capacity (e.g. at least 20 blocks of numbering capacity available), thus taking care of consumer protection concerns and easing impact on geographic numbering resource.

Option 4: Allocation not permitted to any VoB services

Option 4 would not permit the allocation of geographic numbering capacity for any VoB services. Instead, depending on the outcome of the consultation outlined in section 4 of this document, only 056 numbers (or other non-geographic range if suitable, e.g. 055 numbers) would be available.

5.22 The effect of these options on eligibility to use geographic and 056 numbers is represented in the following table:

Service type	May be allocated geographic (01/02) numbers?	May be allocated 056 numbers?
Standard / traditional PATS	Yes (as present)	No – no VoB characteristics
VoB PATS offering mobility	Questionable under options 1 & 2 and in some areas under option 3	Yes
VoB PATS not offering mobility	Yes under options 1 & 2 and in some areas under option 3	Yes
VoB non-PATS offering mobility	Questionable under option 1	Yes
VoB non-PATS not offering mobility	Yes under option 1	Yes

Question 12:

Ofcom has identified four options for how it might allocate geographic numbers for VoB services. Which of the four options do you prefer and why? Are there any other options that Ofcom should consider?

Question 13:

If option one ('allocate to all VoB services') or option two ('allocate to PATS VoB only') were adopted, which of the five sub-options intended to ensure sufficient capacity was available for allocation would you favour and why?

Question 14:

What comments and quantitative data can Communications Providers supply on the likely impact and timescales for implementing the five approaches (sub options a – e) for ensuring that sufficient geographic numbering capacity is available to meet demand if allocated for VoB services?

Conclusions to Section 5

5.23 Ofcom's initial views on allocation of geographic numbering for VoB services may be summarised as follows:

- some VoB services might not fit the definition of geographic numbers, e.g. they offer an element of mobility;
- some Communications Providers would prefer allocations of geographic numbers for their VoB services due to the ease of competing with other service providers for consumers' business and the established framework for geographic numbering;
- Ofcom considers that the allocation of geographic numbers for VoB services might not be appropriate, particularly when an alternative, the 056 range, is proposed;
- Ofcom also has concerns about use of geographic numbering for VoB services from the numbering capacity perspective;
- from a regulatory perspective, there are differences in the emerging VoB services – PATS VoB, non-PATS VoB - and within those two categories, the element of mobility. The decision whether to allocate geographic numbers to a VoB service might depend on the service category and/or whether mobility is offered;
- Ofcom has proposed four options for consultation, which consider allocation of geographic numbers to a) all types of VoB (with sub-options on how to ensure sufficient numbering resource is made available), b) only to PATS, c) only to PATS in certain areas and d) no VoB services; and
- Ofcom is seeking comments and supportive data from stakeholders on the options 4 May 2004

Section 6

Draft Direction on an application form for 056 numbers

6.1 The purpose of this section of the document is to introduce Ofcom's consultation on a draft Direction relating to an application form for 056 Telephone Numbers under paragraph 17.9 of General Condition 17 of the General Conditions of Entitlement. Condition 17.9 states that:

*"When applying for an Allocation or Reservation of Telephone Numbers, the Communications Provider shall:
use an appropriate application form as directed by the Director from time to time as he thinks fit;
provide such information as is required by such application form"*

6.2 The effect of the Direction will be to specify the telephone numbering application form to be used to apply for 056 Telephone Numbers – a notification of the draft direction is at Annex E. Ofcom is satisfied that the draft application form is appropriate for application for 056 numbers and that the draft Direction meets the tests set out in Section 49(2) of the Act, in that it is:

- objectively justifiable, in that it relates to the need to ensure that appropriate application forms are used by Communications Providers to apply for numbering, to ensure that Ofcom has the requisite information available to assess applications and comply with its duty to ensure best use of numbering;
- non-discriminatory, in that all Communications Providers affected by the direction will have to use the same forms, and where there are differences in terms of the information requested in the forms this reflects differences between network providers and service providers. Service providers will need to provide details of the network over which their service will be provided each time and whether the service provider has tried to obtain a sub-allocation from a provider of a PECN. This is so that Ofcom can assess, in each individual case, whether the service provider is eligible for numbers in those circumstances. If the service provider has not tried to obtain a sub-allocation, and has no arrangements with a network provider such that the provider can provide a service, then Ofcom may determine that the service provider is not eligible for numbers in that particular case. Network providers will only need to complete network details once, unless the network varies depending on the type of services they are offering over the network;
- proportionate, in that the application form only requests the minimum information necessary for Ofcom to make a decision on whether the applicant is eligible to be allocated Telephone Numbers, or to be allocated further telephone numbers; and
- transparent in that the draft Direction, and its effect, have been set out in this consultation and will be set out in the forthcoming statement and determination.

- 6.3 In proposing the draft Direction, Ofcom has considered its general duties in carrying out functions as set out in Section 3 of the Act (see paragraph 2.15), in particular the requirement to further the interests of citizens in relation to communications matters and consumers in relevant markets, by making available the appropriate procedure for Communications Providers to request allocations of Telephone Numbers for VoB services, which may then be provided to citizen consumers in order to access such services. Access to the appropriate numbering resource is an important aspect of making a wide range of ECSs available throughout the UK, which promotes competition in the market for VoB services.
- 6.4 In proposing the draft Direction, Ofcom has also considered the Community obligations set out in Section 4 of the Act (see paragraph 2.16), in particular the requirement to promote competition in relation to the provision of ECNs and ECSs, as numbers should be allocated to as wide a range of Communications Providers as possible, thus ensuring that users of Telephone Numbers have as wide a choice as possible in terms of services and Communications Providers. Also, Ofcom has considered the requirement to take account of the desirability of it carrying out its functions in a manner which, so far as practicable, does not favour (a) one form of ECN, ECS or AF or (b) one means of providing or making available such a network, service or facility, over another. In Ofcom's view, numbers should be available equally to anyone who is eligible, and applications processed in date of receipt order, rather than by showing any preferential treatment to any particular Communications Provider. However, Ofcom does consider that only providers of PECNs or PECSs should be eligible for Telephone Numbers from the Plan, which only contains numbers suitable for use in relation to such networks or services.
- 6.5 Comments are invited on the draft direction by 23 March 2004. Clearly the direction will become redundant and will not be made unless the modification to the Plan is made making available 056 numbers for VoB services.

Question 15:

Do you have any comments on Ofcom's proposed telephone numbering application form (as set out in Annex E) for 056 numbers?

Section 7

The consultation process and next steps

How to respond to this consultation

7.1 Ofcom is publishing this consultation document so that interested parties may comment on the issues it addresses. The closing dates for submitting comments are:

23 March 2004 for comments on the notification of proposed modifications to the National Telephone Numbering Plan;

23 March 2004 for comments on the draft Direction proposing a telephone numbering application form for 056 numbers; and

04 May 2004 for comments on the consultation on allocation of geographic numbers for VoB services

Ofcom has combined the three consultations in the same document for ease of reference. However, the first two consultations are not dependant on the outcome of the last consultation and can, therefore, run according to different timescales.

7.2 Where possible, comments should be made in writing and sent by e-mail to elizabeth.greenberg@ofcom.org.uk. However, copies may also be posted or faxed to the address below. If any interested parties are unable to respond in one of these ways, they should discuss alternatives with:

Elizabeth Greenberg
Numbering Project Manager
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA

Tel: 020 7783 4163
Fax: 020 7783 4109

Copies of this document

7.3 This document can be viewed in the consultation section of Ofcom's website at

<http://www.ofcom.org.uk/consultations>

Publication of comments submitted by stakeholders

- 7.4 Ofcom believes it is important for everyone interested in an issue to see the views of others during a consultation and would generally publish all the responses received on its website. It is, therefore, preferable if people and organisations that respond to this consultation are happy for their submissions to be published. Requests for responses to be treated as confidential will be respected; however, these should be clearly marked.
- 7.5 Non-confidential responses will be made available on Ofcom's website in the 'past consultations' section. Hard copies may be viewed in the Knowledge Centre by appointment.

Consultation process

7.6 Ofcom is acutely aware of the effect of its actions on consumers and organisations and strongly believes that consultation has a vital role to play in its decision making process, allowing those who may be affected by or concerned about a particular issue to have their views taken into account. It is, therefore, important that Ofcom's consultation process is effective and to this end, it has devised seven principles which it will follow for each written consultation (see Annex A). With respect to this consultation, Ofcom is satisfied that it has met the principles in the following manner:

7.7 Discussions with stakeholders: it was important that Ofcom consulted on numbering arrangements for VoB services at the earliest opportunity, as potential service providers entry into the market depended on access to the appropriate numbering resource. Ofcom did not have an opportunity to engage with stakeholders during the drafting of this document, however, there will be an opportunity to explain the proposals at a discussion group meeting on VoB services (see

http://www.ofcom.org.uk/ind_groups/telecommunications/vob/?a=87101),

which includes a session on the numbering arrangements for VoB consultation.

7.8 Extent of consultation: this document is aimed at all stakeholders and particularly at Communications Providers, potential VoB service providers and users. It is a public consultation and responses from all interested parties are welcome. Annex G provides a self-contained list of consultation questions.

7.9 Consultation details: The document brings together various issues which contribute to the formulation of proposals on the appropriate numbering resource for VoB services. As a result, the document may appear long and complex and sometimes duplicates detail for clarity. However, as the issues are inter-related it was considered preferable to publish it as one document. The Executive Summary provides a précis of the document's main points and proposals under consultation.

7.10 Timetable for responses: the document contains three separate consultations, which equates to two timetables for responses. The consultation on use of geographic numbering for VoB services will last for the standard ten weeks, due to the complexity of the policy issues and the outcome's potential impact. The consultation on the modification to the Plan and the numbering application form for 056 numbers will run for the

statutory one month consultation period. Ofcom considers that it is necessary for a shorter consultation period than the standard ten weeks in order to provide numbering resource for VoB service providers and limit the delay in the launch of their services. The shorter timescale for responses will be 'red-flagged' to stakeholders where possible.

7.11 Review of responses to consultation: Ofcom values the consultation process and is committed to an open-minded review of the responses. Once the deadline for receipt has passed, Ofcom will take all submissions into account in the formulation of its policy, ensuring it remains accountable to its stakeholders.

7.12 Monitoring of the consultation process: consultation plays an important role in ensuring Ofcom's decisions are taken at the right time and in the right way. It is, therefore, important that the consultation process is effective and measures have been taken to ensure that this is achieved:

- Ofcom has published A guide to our consultation process, which can be downloaded at

http://www.ofcom.org.uk/consultations/consult_method/?a=87101.

This guide will be updated as Ofcom's approach to consultation develops over time;

- a 'consultation helpdesk' has been established, which is designed to help organisations such as small businesses and consumer and community groups to make their views heard in response to Ofcom's consultations. The telephone number for the helpdesk is 020 7981 3003;
- a 'consultation champion' has been appointed to ensure Ofcom follows its own guidelines and reaches the largest number of people and organisations interested in the outcome. Ofcom's current consultation champion is Philip Rutnam, Partner, Competition and Strategic Resources who can be contacted at philip.rutnam@ofcom.org.uk or on 020 7981 3585 or be written to at Ofcom (see paragraph 7.2 for address);
- current and past consultations are accessible from the consultation homepage on Ofcom's website at <http://www.ofcom.org.uk/consultations/?a=87101>; and
- provision of an automatic system which notifies those registered of updates to the Ofcom website according to subject matter.

General comments on Ofcom's consultation procedures may be emailed to consult@ofcom.org.uk

Next steps

7.13 Following the deadline for submissions to the consultations contained in this document, Ofcom will:

- ensure that all non-confidential responses are made available for public viewing on Ofcom's website and in the Knowledge Centre (see paragraphs 7.4 & 7.5);
- review all responses within the project team responsible for this consultation;
- formulate decisions based on those responses and any other important or relevant information available to the project team; and
- publish its decisions in a timely manner.

7.14 With regards to the consultations in this document, and subject to the submissions received, Ofcom will publish its decisions in the following manner:

- a Direction and accompanying statement on the telephone numbering application form for 056 numbers (assuming the proposed modifications to the Plan are adopted);
- the modification to the National Telephone Numbering Plan (assuming it is adopted) and accompanying statement; and
- a statement on allocation of geographic numbers for VoB services, together with any necessary statutory consultations.

Annex A

Ofcom's consultation principles

Ofcom has committed to meeting the seven tests for consultations set out below:

1. Hold discussions with stakeholders before issuing a major consultation document – so that Ofcom's thinking is subject to an early sense-test. If this is not possible, an open meeting to explain the proposals will be held soon after publication.
2. Be clear about who is being consulted, why, on what questions and for how long.
3. Make the document as simple and concise as possible – with a summary of no more than two pages - and make it easy to respond to. This may involve issuing a shorter version aimed at hard-to-reach groups, like SMEs.
4. Allow ten weeks for responses, other than on dispute resolution.
5. Analyse responses with care and an open mind. This involves giving reasons for subsequent decisions, and an account of the views expressed.
6. Monitor and evaluate consultations, and designate a consultation champion – an evangelist within Ofcom for better consultation and reach out, and a contact point for comments on our process.
7. Explain why Ofcom is departing from any of these tests if it has to – for example, because of urgency or confidentiality. If a shorter period is required, Ofcom will draw this to the attention of stakeholders, as a red flag item.

Annex B

Background on regulatory framework for providers

General Conditions relevant to PATS/PTN providers

Condition number	Condition title	Relevant providers
3	Proper and effective functioning of the network	Public Telephone Network (PTN) and/or Publicly Available Telephone Services (PATS) providers at a fixed location
4	Emergency call numbers	PTN and/or PATS providers
5	Emergency planning	PTN and/or PATS providers
8	Operator assistance, directories and Directory Enquiry Facilities	PATS providers other than Public Pay Telephone providers
10	Transparency and publication of information	Providers providing end-users with access to and use of PATS excluding public pay telephones
11	Metering and billing	PATS providers with a Relevant Turnover exceeding £40 million
12	Itemised bills	PATS providers
13	Non-payment of bills	PATS providers at a fixed location
15	Measures for end-users with disabilities	PATS providers
16	Provision of additional facilities	PTN providers

In addition, subscribers of non-PATS services would not have the right to port their telephone number to another provider.

Section from Consumer Protection for VoB discussion paper giving background to the regulatory framework for communications (full paper available at

“It is possible to group the General Conditions according to which type of network or service provider they apply to. In the case of providers of electronic communications networks, the conditions identify three types of providers: those who provide Electronic Communications Networks (ECNs); those who provide Public Electronic Communications Networks (PECNs); and those who provide Public Telephone Networks (PTNs).

A PTN is defined as an electronic communications network over which PATS are provided. A PTN provider is subject to more obligations than a provider of ECNs or a provider of PECNs. It is widely accepted that telephony, as a core service providing access to the emergency services, should be more heavily regulated than other electronic communications services (ECs).

In the case of providers of electronic communications services (ECs), the conditions distinguish between three types of providers:

those who provide ECs;

those who provide Public Electronic Communications Services (PECSs); and

those who provide PATS.

Again those who provide PATS are subject to more obligations than those who provide ECs and PECSs. Some general conditions only apply to PATS providers who are providing the service at a fixed location. This distinction is derived from the Directives.

Are VoB services subject to the same regulations as traditional voice services?

A Publicly Available Telephone Service (PATS) means ‘a service available to the public for originating and receiving national and international calls and access to Emergency Organisations...’ In practice, this includes the traditional telephone service which Ofcom regulates through the General Conditions.

VoB providers that fit this definition, including those offering access to Emergency Organisations (i.e. the ‘999’ service), are regulated in the same way as standard telephone services (i.e. PATS) and are subject to the General Conditions outlined above. These VoB providers might use a managed IP network (rather than the public Internet) to deliver their calls and as such have greater control over the reliability of their service.

Services that do not offer access to Emergency Organisations are not PATS. This includes the services of some emerging VoB providers that provide their service over the public Internet and therefore could not comply with all the PATS obligations. In particular, services relying on the public Internet would not be able to comply with General Condition 3, which requires them (amongst other things) to ‘take all reasonably practicable steps to maintain uninterrupted access to Emergency Organisations as part of any PATS offered at fixed locations’.

As a result of not offering a PATS service, these providers are not required to comply with other conditions which are relevant to providers of PATS.”

Annex C

Overview of technical issues for PATS VoB services

C.1 All communications providers that provide services that meet the definition of publicly available telephone service (PATS) must comply with those General Conditions that relate to PATS. This includes voice over broadband (VoB) services that meet the definition of PATS (discussed in Section 2 and referred to here as PATS VoB services). In addition, many conditions also apply to providers of networks used to provide PATS, these are known as public telephone network (PTN) providers.

C.2 See Annex B for a summary of the relevant General Conditions and

http://www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/2003/cond_final0703.pdf

for the full text of the General Conditions.

C.3 Compliance with these conditions for traditional telephone services using circuit switched technology is generally well established and understood. However, Ofcom considers that due to the technology typically employed for VoB services, PATS VoB service providers and network providers may need to take specific measures to ensure compliance with these requirements.

Overview of technical issues

C.4 Highlighted below are a number of areas where providers of PATS VoB services are likely to need to take particular steps to be able to comply with their regulatory obligations. This list is not intended to be exhaustive, nor is it a substitute for communications providers considering all relevant conditions and taking their own legal advice.

C.5 Ofcom urges companies that are intending to provide PATS VoB services to consider carefully their regulatory obligations and to ensure that they are able to comply with them before they begin offering such services. Ofcom is able to take enforcement action, including the imposing of penalties, on Communications Providers that breach these conditions.

Condition 3 – Proper and effective functioning of the network

C.6 Ofcom considers that providers of VoB services that simply rely on the public internet for conveyance of their service would not be complying with this condition. For example, a provider that relied solely on the public internet would not be taking “all reasonably practicable steps” to maintain (among other things) uninterrupted access to Emergency Organisations or availability of the service in cases of force majeure. Ofcom considers that service providers could take other steps to maintain such services, which might include use of a PSTN back-up line (see below) or use of an appropriate managed network.

C.7 For a VoB service provided solely over a managed packet network (and not the public internet), Ofcom would stress that the network and/or service provider may have to take reasonable additional measures in order to comply

with the requirements of this condition. In particular, the degree of network integrity appropriate for uninterrupted access to Emergency Organisations is likely to be higher than that of networks typically designed for broadband internet access.

- C.8 Ofcom does not at this stage intend to set out the specific technical measures that would be necessary in order for VoB providers to comply with this condition. However, Oftel has previously published guidelines on the interpretation of the network security and integrity provisions of condition 20 of the, now obsolete, Public Telecommunications Operators' (PTO) Licence. General Condition 3 broadly corresponds to PTO licence condition 20, and Ofcom considers that these guidelines are still relevant to providers of PATS VoB services (amongst other PATS providers). For further information see Guidelines on the essential requirements for network security and integrity and criteria for restriction of access to the network

http://www.ofcom.org.uk/static/archive/oftel/publications/ind_guidelines/esre1002.htm.

Condition 4 – Emergency call numbers

- C.9 This condition includes a requirement in relation to caller location information:

“4.2 The Communications Provider shall, to the extent technically feasible, make Caller Location Information for all calls to the emergency call numbers “112” and “999” available to the Emergency Organisations handling those calls.”

- C.10 Ofcom is aware that VoB services may offer a degree of mobility, so that the location of the device making the call may change. Therefore the responsibility on the provider is to ensure that location information is available and that it is kept up to date when the location of the end user equipment is changed. Ofcom considers that there are likely to be technically feasible means of achieving this.

Condition 15 – Special measures for end-users with disabilities

- C.11 Amongst other things, Condition 15 requires communication providers to ensure that its subscribers can access a text relay service. A text relay service provides translation of voice to/from text and conveyance of text to/from the customer's terminal. In addition text relay access should be provided to Emergency Organisations by dialling the 18000 code.
- C.12 It is unlikely that VoB services would be able to support traditional text relay service and terminal equipment without significant technical developments being implemented. Ofcom encourages VoB providers to support the development of an end-to-end IP service for access to text relay services. INCOM (Inclusive Communications), a sub-committee of the European Commission's Communications Committee (COCOM) is currently considering this issue and is expected to make recommendations to COCOM in February 2004 (see <http://www.forum.europa.eu.int>).

Condition 16 - Provision of additional facilities

C.13 General Condition 16 includes the requirement (subject to technical feasibility and economic viability) to provide tone dialling or Dual Tone Multi-Frequency (DTMF) (the technical term describing Touch Tone dialling, which combines one low frequency and one high frequency tones), such that the network supports the use of DTMF tones for end-to-end signalling throughout the network. Ofcom notes that end-to-end DTMF tones may not be carried reliably over the public internet.

Use of analogue telephone line back-up

C.14 It is possible for voice over IP telephones and VoIP gateway adaptors (for use with standard telephones) to provide an interface to the users analogue telephone line. This allows the telephone to be used for making and receiving calls over the analogue telephone as well as the broadband connection.

C.15 Ofcom encourages PATS VoB service providers to consider this option as a possible means of addressing the technical issues outlined above. In particular the analogue line could be used as a back-up to the VoB service, with equipment automatically switching to the analogue connection if any failure with the VoB service occurred. In addition, due to the higher resilience required for calls to Emergency Organisations, these could be automatically routed over the analogue line rather than the broadband line.

Annex D

Notification of proposals for a modification to provisions of the Plan under section 60(3) of the Act

1. OFCOM, in accordance with section 60 of the Act, hereby makes the following proposal for a modification to the provisions of the Plan.
2. The Condition has effect by reference to provisions of the Plan.
3. The draft modification to the Plan is set out in the Schedule to this Notification.
4. The effect of the modification is set out in Section 4 of the accompanying consultation document.
5. The reasons for making the proposal are set out in Section 4 of the accompanying consultation document.
6. OFCOM considers that the proposed modification complies with the requirements in section 60(2) of the Act.
7. In making the proposals referred to above OFCOM have considered and acted in accordance with the six Community requirements in section 4 of the Act as well as performed their general duties under section 3 of the Act and their duty as to telephone numbering in section 63 of the Act.
8. Representations may be made to Ofcom about the proposal by 23 March 2004.
9. Copies of this Notification have been made available to the Secretary of State.
10. In this Notification-
 - 'Act' means the Communications Act 2003;
 - 'Condition' means General Condition 17 of the General Conditions of Entitlement set by the Director by way of publication of a Notification on 22 July 2003;

 - 'Director' means the Director-General of Telecommunications as appointed under section 1 of the Telecommunications Act 1984;
 - 'Ofcom' means the Office of Communications; and
 - 'Plan' means the National Telephone Numbering Plan published by the Director on 22nd July 2003.

[Signed]
[Name]
[Job Title]
On behalf of Ofcom

[date]

Schedule

The following shall be deleted from Part A1 of the Plan -

05 Corporate Numbers

And shall be replaced with the following -

055 Corporate Numbers

056 Voice over Broadband services

In the Definitions and Interpretation section of the Plan the following definition shall be inserted-

<p>'Voice over Broadband' refers to services that allow end users to make and receive calls over a broadband connection and which differ from services provided using circuit switched technology.</p>
--

Annex E

Notification of proposals under section 49(4) of the Act

Proposal for making a Direction under paragraph 17.9(a) of the Condition relating to an application form for 056 numbers

1. The Office of Communications ('Ofcom') hereby makes the following proposal for a Direction to be given under paragraph 17.9(a) of the Condition.
2. The draft Direction is set out in the Schedule to this Notification.
3. The effect of the draft Direction is set out in section 6 of the accompanying Consultation Document.
4. The reasons for making the proposal for the Direction are set out in section 6 of the accompanying Consultation Document.
5. Representations may be made to the Ofcom about the proposed draft Direction
23 March 2004
6. Copies of this Notification have been sent to the Secretary of State.

[Signed]

Name
Job Title

On behalf of Ofcom
[date]

Schedule

Draft Direction under paragraph 17.9(a) of the Condition

WHEREAS-

A. paragraph 17.9(a) of the Condition provides that when applying for an Allocation or reservation of Telephone Numbers, the Communications Provider shall use an appropriate application form as directed by the Director from time to time as he thinks fit;

B. by virtue of the Transitional Provisions, references to the Director in General Condition 17 should be read as references to Ofcom.

C. for the reasons set out in the Statement accompanying this Direction OFCOM are satisfied that the application form in the Annex to this Direction is appropriate for use by Communications Providers when applying for an Allocation or reservation of Telephone Numbers;

D. for the reasons set out in the Statement accompanying this Direction OFCOM are satisfied that this Direction is:

- objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
- not such as to discriminate unduly against particular persons or against a particular description of persons;
- proportionate to what it is intended to achieve; and
- in relation to what it is intended to achieve, transparent.

E. for the reasons set out in the Statement accompanying this Direction OFCOM are satisfied that they acted in accordance with the relevant duties set out in Sections 3 and 4 of the Act;

F. a notification of a proposal to give this Direction was given under section 49(4) of the Act on [insert date of publication] (the 'Notification');

G. a copy of the Notification was sent to the Secretary of State in accordance with section 50(1)(b) of the Act;

H. in the Notification and accompanying consultation document OFCOM invited representations about any of the proposals therein by 23 March 2004;

I. by virtue of section 49(9) of the Act, OFCOM may give effect to the proposal set out in the Notification, with or without modification, only if-

- they have considered every representation about the proposal that is made to them within the period specified in the notification; and
- they have had regard to every international obligation of the United Kingdom (if any) which has been notified to them for this purpose by the Secretary of State;

J. OFCOM received responses to the Notification and have considered every such representation made to them within the period specified in the Notification and accompanying consultation document and these representations are discussed in [Chapter X of the Statement accompanying this Direction]; and the Secretary of State has not notified OFCOM of any international obligation of the United Kingdom for this purpose;

NOW, THEREFORE, OFCOM, PURSUANT TO PARAGRAPH 17.9(a) OF THE CONDITION, HEREBY DIRECT THAT-

1. for the time being the application form in the Annex to this Direction shall be used by Communications Providers when applying for an Allocation or reservation of Telephone Numbers for Voice over Broadband services.

2. in this Direction-

- 'the Act' means the Communications Act 2003;
- 'Allocation' shall have the same meaning as in the Condition;
- 'Communications Provider' shall have the same meaning as in the Condition;
- 'the Condition' means General Condition 17 of the General Conditions of Entitlement set by the Director on 22 July 2003 pursuant to section 45 of the Act by way of publication of a Notification pursuant to section 48(1) of the Act;
- 'the Director' means the Director-General of Telecommunications as appointed under section 1 of the Telecommunications Act 1984;
- 'OFCOM' means the Office of Communications;
- 'Telephone Number' shall have the same meaning as in paragraph 1 of Part 1 of the Schedule to the Notification published by the Director on 22 July 2003 under section 48(1) of the Act;
- 'Transitional Provisions' means sections 408 and 411 of the Act, the Communications Act 2003 (Commencement No.1) Order 2003 and the Office of Communications Act 2002 (Commencement No.3) and Communications Act 2003 (Commencement No 2) Order 2003.

3. Except in so far as the context otherwise requires, words or expressions shall have the meaning assigned to them. Otherwise, any word or expression shall have the same meaning as it has-
in the National Telephone Numbering Plan published by the Director on 22 July 2003 pursuant to section 56 of the Act [stakeholders note that this is proposed to be modified as set out in Annex D of this consultation document];
if, and only if, it has no meaning ascribed as mentioned in (i) above, and only if the context so permits, in General Condition 17 (entitled 'Allocation, Adoption and Use of Telephone Numbers') in Part 2 of the Schedule to the Notification published by the Director on 22 July 2003 under section 48(1) of the Act;
if, and only if, it has no meaning ascribed as mentioned in (i) and (ii) above, and only if the context so permits, in paragraph 1 of Part 1 of the Schedule to the Notification published by the Director on 22 July 2003 under section 48(1) of the Act; and
if, and only if, it has no meaning ascribed as mentioned in (i), (ii) and (iii) above, and only if the context so permits, in the Act.

4. The Interpretation Act 1978 shall apply as if this Direction were an Act of Parliament.

5. Headings and titles shall be disregarded.

[Signed]
On behalf of Ofcom

Annex to Direction
Form S56



VOICE OVER BROADBAND (VoB) NUMBERING APPLICATION

Definitions and Interpretation

1. Except in so far as the context otherwise requires, words or expressions shall have the meaning assigned to them. Otherwise, any word or expression shall have the same meaning as it has-

- (i) in the National Telephone Numbering Plan published by the Director on 22nd July 2003 pursuant to section 56 of the Communications Act 2003 (the 'Act');
- (ii) if, and only if, it has no meaning ascribed as mentioned in (i) above, and only if the context so permits, in General Condition 17 (entitled 'Allocation, Adoption and Use of Telephone Numbers') in Part 2 of the Schedule to the Notification published by the Director on 22nd July 2003 under section 48(1) of the Act;
- (iii) if, and only if, it has no meaning ascribed as mentioned in (i) and (ii) above, and only if the context so permits, in paragraph 1 of Part 1 of the Schedule to the Notification published by the Director on 22nd July 2003 under section 48(1) of the Act; and
- (iv) if, and only if, it has no meaning ascribed as mentioned in (i), (ii) and (iii) above, and only if the context so permits, in the Act.

2. The Interpretation Act 1978 shall apply as if this Application Form were an Act of Parliament.

(Applicants should ensure that all sections have been completed where relevant – incomplete Application Forms may not be processed within the 3-week deadline).

1. Your reference (optional):	
--------------------------------------	--

<p>2. <u>Applicant details and date of application:</u></p> <p>Your name, company name, address, direct telephone, direct fax, direct e-mail, mobile.</p> <p><i>(Where you are acting on behalf of a Communications Provider (e.g. a consultant, solicitor, etc), and if you have not previously supplied one, you should enclose a letter from that Communications Provider confirming that you are authorised to represent it).</i></p>	<p><u>Date of application:</u></p>
<p>3. <u>Communications Provider details:</u></p> <p>If different from 2. above (e.g. where you are a consultant, solicitor, etc), provide the name and address of the Communications Provider on behalf of whom you are applying for Telephone Numbers.</p>	
<p>4. <u>Declaration of ‘Public Electronic Communications Network’ or ‘Public Electronic Communications Service’</u></p> <p>The information requested in Annex A helps Ofcom to assess your eligibility to be Allocated Telephone Numbers.</p> <p>If you are a provider of a Public Electronic Communications Network:</p> <p>confirm whether you have previously supplied the information requested in Annex A (or information equivalent to it), to Ofcom’s Numbering Unit; or</p> <p>if not, you <u>must</u> complete in full all relevant questions in Annex A and submit it along with this form.</p> <p>If you have previously supplied the information in Annex A, then move onto the next question – you do not need to submit Annex A with this form.</p> <p>If you are a provider of Public Electronic Communications Services:</p> <p>you MUST complete all relevant questions in Annex A each time you apply for Telephone Numbers and submit it with this form.</p>	<p><i>(For providers of Public Electronic Communications Networks, please ensure you <u>have</u> previously supplied the information requested, before you confirm this – your application may be rejected if this is not the case).</i></p>

5. Telephone Numbers required:

In the table below, you should give a 1st and 2nd choice of number block for each VoB block applied for in case those you have selected are not available at the time the application is processed. A maximum of 10 blocks should be entered on this Application Form. A new Form S56 should be completed for further blocks.

		Code - first 4 digits after initial 'o' e.g. 5600, etc. (SABC)	Next 2 digits of number e.g. 34 (DE)	Planned 'In-Service' Date (N.B. applications should not be submitted more than 6 months prior to in- service date)	Forecast of expected Adoption in 1 st 12 months (%)	Forecast of expected Adoption in 2 nd 12 months (% cumulative)
e.g. 1 st Block	1 st Choice	5600	34	early Jul 2004		
	2 nd Choice	5600	64	early Jul 2004		
1 st Block	1 st Choice					
	2 nd Choice					
2 nd Block	1 st Choice					
	2 nd Choice					
3 rd Block	1 st Choice					
	2 nd Choice					
4 th Block	1 st Choice					
	2 nd Choice					
5 th Block	1 st Choice					
	2 nd Choice					
6 th Block	1 st Choice					
	2 nd Choice					
7 th Block	1 st Choice					
	2 nd Choice					
8 th Block	1 st Choice					
	2 nd Choice					
9 th Block	1 st Choice					
	2 nd Choice					
10 th Block	1 st Choice					
	2 nd Choice					

6. Service and Market

For each of the number blocks applied for above, give a brief description of the type of Public Electronic Communications Service for which the Telephone Numbers applied for will be Adopted, and the market to be served by the service e.g. VoIP for SME business customers in Preston, VoIP for residential customers nationwide, etc.

7. Adoption of existing Telephone Number blocks:

For each of the number blocks applied for above, you should provide details, in the table below, of any other Voice Over Broadband number blocks – consistent with its duty in the Communications Act 2003 to secure best use of numbers Ofcom requires a justification for applying for numbering capacity where there may be non-utilised numbers.

Code and Number (part) – first 6 digits after initial ‘0’ Show as ‘SABC’ ‘DE’		Total Numbers Allocated to End-Users: i.e., in use or ported out	Total Numbers not in use, but contracted out
(SABC)	(DE)	(Numbers or %)	(Numbers or %)
5600	59	66%	20%
5622	22	82%	5%
5623	24	85%	5%

EXAMPLE

Form S56 - Annex A

A1. Confirmation of Status:

Ofcom generally only Allocates Telephone Numbers to providers of Public Electronic Communications Networks.

Ofcom may also Allocate numbers, where number resource implications do not preclude allocation, to providers of a Public Electronic Communications Service. Ofcom would also normally expect to see that the provider has arrangements in place for its service to be carried over a network, and, where appropriate, would usually expect the provider to have taken reasonable steps to seek a sub-allocation of Telephone Numbers of the type applied for prior to making the application.

Providers of Public Electronic Communications Networks

It is not Ofcom's intention for a Communications Provider to be assessed more than once to determine whether or not it is a provider of a Public Electronic Communications Network.

Therefore, please now complete question A4. If you have answered 'yes' to question A4(a), you do not need to answer questions A1 (a) and (b) below.

If you have not registered i.e. you have answered no to question A4 (a), Ofcom needs certain information from you in order to determine whether or not you are a provider of a Public Electronic Communications Network.

Please provide details of:

a) the Electronic Communications Network on which the Telephone Numbers applied for are intended to be Adopted;

(a diagram may be useful to assist Ofcom in assessing your eligibility for Telephone Numbers)

b) the Electronic Communications Service which you are intending to provide over that network.

Providers of Public Electronic Communications Services

In order to determine whether or not you are a provider of a Public Electronic Communications Service, Ofcom needs certain information from you. Please provide details of:

c) the Electronic Communications Service which you are intending to provide with the Telephone Numbers applied for. Please also provide details of the network on which the numbers you are applying for will be Adopted.

<p>A2. <u>Applications from providers of Public Electronic Communications Services</u></p> <p>If you are applying for Telephone Numbers as a provider of Public Electronic Communications Services, where appropriate Ofcom would usually expect your company to have already taken reasonable steps to obtain a sub-allocation of Telephone Numbers of the type you are applying for from a provider of a Public Electronic Communications Network.</p> <p>a) Have you taken steps to obtain a sub-allocation of Telephone Numbers of the type for which you are applying? If not, would you please provide a justification for that; and</p> <p>b) If you have taken steps, would you provide a brief description of the steps you have taken, and state why did you not obtain a sub-allocation?</p>	
<p>A3. <u>Interconnection arrangements</u></p> <p>Describe your Interconnection arrangements (or those of the provider of a Public Electronic Communications Network on whose network the Telephone Numbers applied for would be Adopted), if any, with other Communications Providers – a simple network diagram may be useful.</p>	
<p>A4. <u>Register of providers of Public Electronic Communication Networks</u></p> <p>Ofcom maintains a voluntary register of providers of Public Electronic Communications Networks.</p> <p>a) Is your company listed on this register?</p> <p>b) If so, under which name is your company registered?</p> <p>c) If different from b), what is the ‘trading name’ under which your company will sub-allocate the Telephone Numbers applied for in this application?</p>	

Annex F

Potential effects on availability of geographic numbering resource if allocated for VoB services

F.1 The following table contains all areas, other than Conservation Type A areas, that have 20 or fewer blocks available or potentially available for allocation by Ofcom to Communications Providers. Conservation Type A areas are Geographic Code Areas that Ofcom believes are within two years of having less than ten spare 10,000 number blocks available for allocation. Subsequent to classification as a Type A conservation area, numbers are allocated in blocks of 1,000 to conserve capacity.

F.2 National-Dialling Only (NDO) blocks (which are geographic numbers that can only be adopted or otherwise used for purposes where end-users will not dial them) are not relevant for the purposes of this document and have not been included in this list.

F.3 Notes in relation to the table:

- the 011XX, 01X1X and 02 areas have not been included as these have expansion or other digits either open or planned, and therefore have sufficient capacity to accommodate the growth;
- 10k blocks protected for potential future numbering arrangements (e.g. code change planning) have not been included in the total of free blocks; and
- areas that at any point in the analysis would have three or less blocks available for allocation (highlighted in the table) also have the potential for exhaustion from normal allocation procedures.

Geographic Code Area	Area Name	Number of free 10k blocks	Category	Minus 1 block	Minus 3 blocks	Minus 5 blocks	Minus 10 blocks
01223	Cambridge	17	B	16	14	12	7
01252	Aldershot	15		14	12	10	5
01262	Bridlington	19		18	16	14	9
01332	Derby	15	B	14	12	10	5
01344	Bracknell	16	B	15	13	11	6
01347	Easingwold	17		16	14	12	7
01377	Driffield	16		15	13	11	6
01382	Dundee	19		18	16	14	9
013873	Langholm	3		2	0	- 2	- 7
01400	Honington	19		18	16	14	9
01439	Helmsley	14		13	11	9	4
01524	Lancaster	20		19	17	15	10
015242	Hornby	1		0	- 2	- 4	- 9
015394	Hawkshead	1		0	- 2	- 4	- 9

Numbering arrangements for Voice over Broadband services

015395	Grange over	4		3	1	- 1	- 6
015396	Sedburgh	5		4	2	0	- 5
01547	Knighton	12		11	9	7	2
01579	Liskeard	20		19	17	15	10
01591	Llanwrtyd	18		17	15	13	8
01603	Norwich	20		19	17	15	10
01604	Northampton	17	B	16	14	12	7
01635	Newbury	19		18	16	14	9
01653	Malton	16		15	13	11	6
01675	Coleshill	9		8	6	4	- 1
01676	Meriden	8		7	5	3	- 2
016973	Wigton	1		0	- 2	- 4	- 9
016974	Raughton	3		2	0	- 2	- 7
01698	Motherwell	15		14	12	10	5
01740	Sedgefield	17		16	14	12	7
01757	Selby	14		13	11	9	4
01759	Pocklington	7		6	4	2	- 3
017683	Appleby	1		0	- 2	- 4	- 9
017684	Pooley Bridge	2		1	- 1	- 3	- 8
017687	Keswick	3		2	0	- 2	- 7
01772	Preston	14	B	13	11	9	4
01776	Stranraer	15		14	12	10	5
01793	Swindon	16	B	15	13	11	6
01845	Thirsk	18		17	15	13	8
01864	Abington	10		9	7	5	0
01865	Oxford	18	B	17	15	13	8
01885	Pencombe	17		16	14	12	7
01904	York	20		19	17	15	10
01908	Milton Keynes	12		11	9	7	2
01924	Wakefield	18	B	17	15	13	8
01925	Warrington	16	B	15	13	11	6
01937	Wetherby	6		5	3	1	- 4
01942	Wigan	15	B	14	12	10	5
01944	West	13		12	10	8	3
019465	Gosforth	3		2	0	- 2	- 7
01968	Penicuik	12		11	9	7	2

[Source: the Scheme, as at 18 February 2004]

F.4 The table above demonstrates the impact on available geographic numbering resource if one, three, five and ten Communications Providers were allocated blocks of 10,000 numbers on a nationwide basis. In particular the table highlights that:

a) with one block allocated the following areas (all 5-digit code areas) would run out of available numbers for allocation (i.e. the available numbering resource would be exhausted):

015242	Hornby
015394	Hawkshead
016973	Wigton
017683	Appleby

b) with three blocks allocated the following additional areas (again all 5-digit code areas) would be exhausted:

013873	Langholm
016974	Raughton Head
017684	Pooley Bridge
017687	Keswick
019465	Gosforth

c) with five blocks allocated the following additional areas would be exhausted:

015395	Grange over Sands
015396	Sedburgh

And d) with ten blocks allocated the following additional areas would be exhausted:

01675	Coleshill
01676	Meriden
01759	Pocklington
01864	Abingdon
01937	Wetherby

Annex G

Summary of consultation questions

Question 1:

Ofcom believes that non-geographic numbers would be suitable for VoB services. Do you agree?

Question 2:

Ofcom's provisional view is that none of the non-geographic number ranges currently determined for allocation fully meet the requirements of VoB services. Do you agree?

Question 3:

Do you agree with Ofcom's proposal to make 056 numbers available as a dedicated non-geographic number range for VoB services and why?

Question 4:

Ofcom has not proposed a sub-structure for the 056 number range. Do you think one should be imposed and, if so, on what basis and for what advantage?

Question 5:

Ofcom suggests that the 056 range should have a tariff ceiling of no higher than 5ppm. What are your views on setting a tariff ceiling for 056 numbers at this level?

Question 6:

Ofcom suggests that fixed and mobile Communications Providers should consider treating 056 numbers like geographic numbers in terms of retail pricing and inclusion in calling options schemes. Do you agree that this would be a desirable approach?

Question 7:

Ofcom proposes to designate the 056 range as 'Voice over Broadband services'. Do you have any comment on this designation, for example, with respect to its reference to technology?

Question 8:

Ofcom proposes to modify the Plan so that 056 numbers are available for allocation for VoB services and 055 numbers are available for allocation for corporate numbering services? Do you have any specific comment on the proposals to modify the Plan in this manner?

Question 9:

Communications Providers have put forward arguments (involving consumer perception and ease of competing with existing services) in support of allocation of geographic numbers for VoB services and Ofcom has provided its thoughts in response. What are your views?

Question 10:

Ofcom would be interested in hearing views from fixed and mobile Communications Providers as to how they might charge for calls to 056 numbers and whether they are likely to be included in calling options packages.

Question 11:

VoB services might offer an element of mobility – do you think that this raises definitional issues for geographic numbers?

Question 12:

Ofcom has identified four options for how it might allocate geographic numbers for VoB services. Which of the four options do you prefer and why? Are there any other options that Ofcom should consider?

Question 13:

If option one ('allocate to all VoB services') or option two ('allocate to PATS VoB only') were adopted, which of the five sub-options intended to ensure sufficient capacity was available for allocation would you favour and why?

Question 14:

What comments and quantitative data can Communications Providers supply on the likely impact and timescales for implementing the five approaches (sub options a – e) for ensuring that sufficient geographic numbering capacity is available to meet demand if allocated for VoB services?

Question 15:

Do you have any comments on Ofcom's proposed telephone numbering application form (as set out in Annex E) for 056 numbers?

Annex H

Glossary

Associated facility (AF)

Any facility which is available for use in association with the use of an Electronic Communications Network or Electronic Communications Service.

ATM service

Data services using Asynchronous Transfer Mode technology.

Broadband

Higher bandwidth, always-on services.

Communications provider

A person who provides an Electronic Communications Network or provides an Electronic Communications Service.

Conservation Area

A geographic area that has a realistic expectation of number exhaustion within the foreseeable future. Type A Conservation Areas are those which Ofcom believes are within two years of having less than ten spare 10,000 number blocks available. Type B Conservation Areas are those which Ofcom believes are likely to become Type A Conservation Areas within ten years.

Corporate Number

A Telephone Number allocated to a Communications Provider where the number is to be assigned by that Communications Provider to a specific Customer and in this definition 'Customer' shall only refer to a customer which is a body corporate.

Electronic Communications Network

A transmission system for the conveyance, by the use of electrical, magnetic or electro-magnetic energy, of Signals of any description.

Electronic Communications Service

Any service consisting in, or having as its principal feature, the conveyance by means of an Electronic Communications Network of Signals.

Emergency Organisation

In respect of any locality:

- (a) the relevant public police, fire, ambulance and coastguard services for that locality; and
- (b) any other organisation, as directed from time to time by the Director as providing a vital service relating to the safety of life in emergencies.

Geographic Area Code

A Telephone Number identifying a particular geographic area.

Geographic Number

A Telephone Number, from a range of numbers in the National Telephone Numbering Plan, where part of its digit structure contains geographic significance used for routing calls to the physical location of the Network Termination Point of the Subscriber to whom the Telephone Number has been assigned, or where the Network Termination Point does not relate to the Geographic Area Code but where the tariffing remains consistent with that Geographic Area Code.

Integrated Services Digital Network (ISDN)

A Network based on the existing digital Public Telephone Network which provides digital links to Customers and end to end digital connectivity between them.

Internet telephony (also referred to as Voice over the Internet)

A specific type of VoIP service that uses the public internet to carry the IP traffic.

National Numbering Scheme (the Scheme)

The day to day record of telephone numbers allocated by Ofcom in accordance with the National Telephone Numbering Plan, and as provided for in Section 56(3) of the Communications Act.

National Telephone Numbering Plan (the Plan)

A document setting out Telephone Numbers available for allocation and restrictions on the Adoption and other uses of those numbers, and as provided for in section 56(1) of the Communications Act.

Network Termination Point

The physical point at which a Subscriber is provided with access to a Public Electronic Communications Network and, where it concerns Electronic Communications Networks involving switching or routing, that physical point is identified by means of a specific network address, which may be linked to the Telephone Number or name of the Subscriber.

Non-geographic Number

A Telephone Number from a range of numbers in the National Telephone Numbering Plan, the digit structure of which contains no geographic significance for routing calls.

Numbering Condition

General Condition 17 of the General Conditions of Entitlement.

Number Translation Services (NTS)

Telephone services using the following numbers: Special Service numbers (including freephone, special local rate and special national rate) and Premium Rate Services numbers (PRS) (services currently provided under 090 and 091 number ranges). Within these ranges calls to 0844 04 numbers for Surftime Internet access services and calls to 0808 99 for FRIACO (Flat Rate Internet Access Call Origination) are excluded.

Originating Communications Provider

The Communications Provider on who's Electronic Communications Network a call originates.

Pence-per-minute (ppm)

A retail price structure where the price of the call depends only on the duration of the call.

Personal Number

A Telephone Number, from the 070 range of numbers assigned by a Personal Numbering Service Provider, which allows a Subscriber to receive calls or other communications at almost any Telephone Number, including a Mobile Number.

Premium Rate Service (PRS)

A service that is paid for through the telephone bill of a Subscriber and is charged at rates above Special Services, where, in relation to Premium Rate Content Services, the revenue for the call, which comprises the price of the telephone call plus the content, product or service, is shared between the Communications Provider and the provider of the content, product or non communication service whether directly or indirectly.

Public Electronic Communications Network

An Electronic Communications Network provided wholly or mainly for the purpose of making Electronic Communications Services available to members of the public.

Public Electronic Communications Service

Any Electronic Communications Service that is provided so as to be available for use by members of the public.

Publicly Available Telephone Service (PATS)

A service available to the public for originating and receiving national and international telephone calls and access to Emergency Organisations and in addition may, where relevant, include one or more of the following services: the provision of operator assistance services, Directory Enquiry Facilities, Directories, provision of Public Pay Telephones, provision of service under special terms, provision of specific facilities for End-Users with disabilities or with special social needs and/or the provision of non-geographic services.

Public Telephone Network

An Electronic Communications Network which is used to provide Publicly Available Telephone Services; it supports the transfer between Network Termination Points of speech communications, and also other forms of communication, such as facsimile and data.

Public Telephone Network Number

Either a Geographic or a Non-geographic Telephone Number that is adopted or otherwise used on Public Telephone Networks.

Subscriber

Any person who is party to a contract with a provider of Public Electronic Communications Services for the supply of such services.

Subscriber Number

A Telephone Number allocated to a Subscriber.

Telephone Number

Subject to any order of the Secretary of State pursuant to section 56(7) of the Act, any number, including data of any description, that is used (whether or not in connection with telephony) for any one or more of the following purposes: (a) identifying the destination for, or recipient of, an Electronic Communication; (b) identifying the origin, or sender, of an Electronic Communication; (c) identifying the route for an Electronic Communication; (d) identifying the source from which an Electronic Communication or Electronic Communications Service may be obtained or accessed; (e) selecting the service that is to be obtained or accessed, or required elements or characteristics of that service; or (f) identifying the Communications Provider by means of whose network or service an Electronic Communication is to be transmitted, or treated as transmitted.

Terminating Communications Provider

The Communications Provider on whose network a call terminates.

Voice over broadband (VoB)

Services that allow end users to make and receive calls over a broadband connection and which differ from services provided using circuit switched technology.

Voice over Internet Protocol (VoIP)

Generic name for the transport of voice traffic using IP technology.