



Future regulation of GSM gateways under the Wireless Telegraphy Act

Consultation

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Section 1

Summary

- 1.1 This document consults on possible changes to the present regulations governing use of GSM gateways in the UK and discusses them in the light of Ofcom's statutory duties, its commitment to using the least intrusive regulatory mechanisms to achieve its policy objectives and relevant European law.
- 1.2 GSM gateways are devices containing one or more subscriber identity modules (SIMs) for one or more mobile networks, which enable calls from fixed telephones to mobile telephones to be routed directly into the relevant mobile network¹. A call made via a GSM gateway appears to the mobile network to have originated from a mobile 'phone registered to that network and so will often attract a cheaper call rate than an ordinary fixed to mobile call.
- 1.3 Ofcom has recently clarified² that it is entirely legal under UK law for end-users (whether businesses or ordinary consumers) to buy, install and use GSM gateways for their own use. However it is currently illegal under UK law for anyone to use GSM gateway equipment to provide a communications service by way of business to another person or organisation, irrespective of where the gateway equipment is located, or how many or few end-users are connected to each gateway. This prohibition on 'commercial' use applies equally to the mobile network operators (MNOs) as to other organisations, since the MNOs' licences do not currently extend to the installation and use of GSM gateways.
- 1.4 When it published its recent statement on these issues, Ofcom invited comments on its interpretation of the relevant legal instruments, and also sought evidence and views on a number of issues relating to GSM gateway use.
- 1.5 The responses to the statement broadly supported Ofcom's conclusion on the present legal position. (Fuller details are set out in decisions under the Competition Act 1998 (the 'Competition Act'), which Ofcom is publishing in parallel with this document, on complaints by two GSM gateway operators about cellular operators' refusal to provide services to them³) Views on the more general questions differed widely.
- 1.6 In the light of the responses to the more general questions, Ofcom is now considering whether the present restrictions on gateway use continue to be appropriate. This document analyses the available evidence and seeks views on a range of options for future regulation from outright prohibition to full liberalisation. These options are assessed in terms of their costs (eg the risk of harmful interference to other users of the mobile phone service and the problem of masking of originating caller identity and location) and the potential benefits for consumers arising from gateway use.

¹ GSM gateways can also be used to route mobile-to-mobile and international-to-mobile calls.

² Statement on the scope of the mobile operators' 2G cellular licences issued under section 1(1) of the Wireless Telegraphy Act 1949 and the legal status of GSM gateways, 3 March 2005, http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ocases/open_all/cw_805/gsmg/gsmg.pdf

³ Floe Telecom re-investigation: [http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ocases/open_all/cw_805/gsm/VIP Communications re-investigation :](http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ocases/open_all/cw_805/gsm/VIP%20Communications%20re-investigation%20) http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ocases/open_all/cw_806/gsm/

- 1.7 Ofcom has tentatively concluded that the chief difference between the appropriateness of each of the options is the risk of harmful interference and the extent to which such risk can be effectively managed. On the basis of its analysis to date, Ofcom believes that there is some scope to liberalise the use of gateways through a limited revision of the existing Exemption Regulations, and that this can be done without unacceptable risk of harmful interference. This exemption is unlikely however to extend to all types of gateway use.
- 1.8 This document also contains a discussion of other options, including maintaining the status quo and an individual authorisation regime.
- 1.9 It should be noted, moreover, that the acceptability of any liberalisation is likely to be dependent on the ability of Ofcom and/or the Home Office to impose and enforce obligations under the Regulation of Investigatory Powers Act 2000 (the 'RIPA'), or otherwise, to continue to ensure the success of activities carried out under the RIPA. Ofcom is pursuing this issue separately with the relevant government departments.
- 1.10 In the meantime, Ofcom would emphasise that commercial use of GSM gateways remains illegal. Ofcom has not as yet authorised the use of GSM gateways to provide electronic communications services by way of business to third parties, and until it does, such use will continue to be a criminal offence under the Wireless Telegraphy Act. If such use is brought to Ofcom's attention, Ofcom may take enforcement action, which could include prosecution under the Wireless Telegraphy Act.
- 1.11 Interested parties are invited to comment on any of the matters discussed in this consultation by **6 September 2005**.

Section 2

Introduction

2.1 In this consultation, Ofcom is consulting on the extent to which the establishment, installation and use of GSM gateways should in future be authorised in the UK and the means by which such authorisation should be given under the Wireless Telegraphy Act 1949 (the 'WTA'). Ofcom is consulting on these matters in the light of continuing interest in the commercial use of GSM gateways and in the context of Ofcom's new approach to spectrum management as set out for example in the Spectrum Framework Review⁴.

GSM gateways

2.2 GSM gateways are devices containing one or more subscriber identity modules (SIMs) for one or more mobile networks, which enable calls from fixed telephones to mobile telephones to be routed directly into the relevant mobile network⁵. A call made via a GSM gateway appears to the mobile network to have originated from a mobile 'phone registered to that network and so will frequently attract a cheaper call rate than an ordinary fixed to mobile call.

2.3 In addition to lower fixed to mobile call charges, gateways can offer flexibility to meet short-term communications needs, for example by providing a quasi-fixed line service to temporary premises, such as offices on building sites, without the need to install a fixed line.

The legal status of GSM gateway use in the UK today

2.4 Ofcom has recently clarified⁶ that it is entirely legal under UK law for end-users (whether businesses or ordinary consumers) to buy, install and use GSM gateways for their own use. However it is currently illegal under UK law for anyone to use GSM gateway equipment to provide a communications service by way of business to another person or organisation, irrespective of where the gateway equipment is located, or how many or few end-users are connected to each gateway. This prohibition on 'commercial' use applies equally to the mobile network operators (MNOs) as to other organisations, since the MNOs' licences do not currently extend to the installation and use of GSM gateways.

The UK regime for authorising the use of radio spectrum

2.5 The radio spectrum is a finite resource for which demand generally exceeds supply. This means that the use of frequencies needs careful planning in order to make the best use of the available spectrum while avoiding unacceptable interference to authorised radio users. Prior to 29 December 2003, the Radiocommunications Agency (the 'RA'), an executive agency of the Department of Trade and Industry, was responsible for managing the non-military radio spectrum in the UK. The RA's functions have now been transferred to Ofcom.

⁴ Ofcom Website | Spectrum Framework Review Statement

⁵ GSM gateways can also be used to route mobile-to-mobile and international-to-mobile calls.

⁶ Statement on the scope of the mobile operators' 2G cellular licences issued under the Wireless Telegraphy Act 1949 and the legal status of GSM gateways, 3 March 2005, http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ocases/open_all/cw_805/gsmg/gsmg.pdf

- 2.6 The current regime for authorising the use of the radio spectrum in the UK is established by the WTA and a series of regulations and orders made under the WTA. Section 1(1) of the WTA makes it a criminal offence to establish or use any station for wireless telegraphy or install or use any apparatus for wireless telegraphy except under the authority of a licence granted by Ofcom or unless exempted from the requirement for a licence by regulations made by Ofcom⁷. In accordance with the European framework for electronic communications networks and services, Ofcom must⁸ exempt from individual licensing the establishment, installation and use of radio equipment that is not likely to involve any undue interference.
- 2.7 Conditions attached to licence exemptions or individual licences must be objectively justified, non-discriminatory, proportionate and transparent⁹.

Ofcom's approach to spectrum management

- 2.8 Ofcom manages the radio spectrum in accordance with its regulatory principles. These involve operating with a bias against intervention but a willingness to intervene firmly, promptly and effectively where required, using the least intrusive regulatory mechanisms to achieve its policy objectives.
- 2.9 In line with its regulatory principles and as a light-touch regulator, Ofcom prefers where possible to rely on market mechanisms, such as spectrum pricing, auctions and trading, to manage the radio spectrum rather than central planning and regulation. This is because Ofcom believes that, in general, market mechanisms will be more effective at securing optimal use of the radio spectrum and promoting the interests of consumers. This vision has been articulated in Ofcom's Spectrum Framework Review and a number of other publications.
- 2.10 In managing the radio spectrum, Ofcom is required to balance a number of duties set out in sections 3, 4 and 154 of the Communications Act 2003. Ofcom's principal duty is to further the interests of citizens in relation to communications matters and to further the interests of consumers, where appropriate by promoting competition and to secure, *inter alia*, optimal use of the radio spectrum. In so doing, Ofcom must have regard to a number of considerations. Section 154 imposes a duty in managing the spectrum to have regard to the desirability of promoting efficient management and use, economic and other benefits, innovation and competition.

The structure of this document

- 2.11 The remainder of this document is structured as follows.
- Section 3 sets out the costs and benefits of different types of gateway use.
 - Section presents options for the future regulation of gateway use.
 - Section 5 contains information about responding to this consultation.
- 2.12 Interested parties are invited to comment on any of the matters discussed in this consultation by 6 September 2005. Details of how to respond are set out in section 5.

⁷ Prior to 29 December 2003, the power to grant exemptions from the requirement for a licence was exercised by the Secretary of State.

⁸ Section 1AA of the WTA added by section 166 of the Communications Act 2003. This implements Article 5(1) of the Authorisation Directive (Directive 2002/20/EC).

⁹ Article 6(1) of the Authorisation Directive.

Section 3

Costs and benefits of GSM gateway use

- 3.1 This section considers the costs and benefits of GSM gateway use and how those costs and benefits vary with the type of use.
- 3.2 To date Ofcom has identified three main types of GSM gateway use:
- a. *self-use*: a single end-user organisation establishes, installs and/or uses one or more GSM gateways for its own use (not to provide an electronic communications service by way of business to any other party);
 - b. *commercial single-user use*: a communications provider establishes, installs and/or uses one or more GSM gateways to provide an electronic communications service by way of business to a single end-user organisation (each individual GSM gateway being used to provide service to only one end-user organisation);
 - c. *commercial multi-user use*: a communications provider establishes, installs or uses one or more GSM gateways to provide an electronic communications service by way of business to multiple end-user organisations (each individual GSM gateway being used to provide service to two or more end-user organisations).
- 3.3 This section draws on responses to a previous statement¹⁰ to analyse the costs and benefits of these different types of use. These responses are summarised at Annex 1. The non-confidential ones have been placed on Ofcom's website.
- 3.4 This section considers the impact of gateway use in terms of:
- i. network congestion and service quality;
 - ii. the impact on emergency services and consumers of masking of caller location and identity;
 - iii. the impact on activities under the RIPA;
 - iv. reducing the cost of calls to mobiles.
- i. Network congestion and service quality**
- 3.5 Responses to the previous statement provide persuasive evidence that operation of gateways can have an adverse impact on quality of service. For example, one respondent submitted statistics for cell traffic illustrating an increase in peak load traffic in a cell from 5 to 35 erlangs¹¹ over a short period.

¹⁰ Statement on the scope of the mobile operators' 2G cellular licences issued under section 1(1) of the Wireless Telegraphy Act 1949 and the legal status of the use of GSM gateways, 3 March 2005, http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ocases/open_all/cw_805/gsmg/gsmg.pdf

¹¹ An 'erlang' is a unit of telecommunications traffic measurement.

Others submitted statistical evidence showing that gateways can generate substantial local congestion. Where this occurs, subscribers to the mobile network, and those attempting to call subscribers to the mobile network, are likely to suffer a degraded quality of service. This manifests itself through an increased likelihood of being unable to make or receive a call (call blocking), reduction in voice quality, dropped calls and increased interference on neighbouring cells. Ofcom considers these effects to constitute harmful interference as defined by the WTA¹².

- 3.6 Responses were divided on whether the type of gateway use affects the risk of interference. Most MNOs consider that the volume of traffic and capacity of the gateway, rather than the type of gateway use, determine whether congestion will arise; one MNO argued that gateway use should not be authorised at all in view of the potential of any gateway use to cause harmful interference; and another that the type of gateway use makes no real difference to the interference caused in urban areas where congestion is most marked. Gateway operators also considered that the regulation should not distinguish between different types of gateway use. One argued that such definitions are a *“construction of the regulators rather than a network or technical issue”*.
- 3.7 However, one MNO that had investigated usage patterns concluded that single-user gateways are unlikely to cause congestion in practice as a single company would be unlikely to generate sufficient call volume to cause a problem whereas multi-user gateways would inevitably cause congestion in busy areas. A typical corporate user, with a six-SIM card gateway, would generate around 30 minutes of traffic a day per SIM whereas the comparable figure for a multi-user gateway could be as high as 400 minutes per SIM (and gateways capable of accommodating up to 60 SIMs are commercially available).
- 3.8 In order to provide service, a gateway needs to access a mobile network. The previous statement sought views on whether subjecting commercial operation of gateways to the control of, or coordination with, MNOs would make a difference to the network congestion and service quality issues outlined above.
- 3.9 Responses to that question made the following points.
- There was reluctance on the part of MNOs to become involved in giving permission for gateways. Refusals would generate numbers of complaints to Ofcom and impose additional workload on MNOs and Ofcom.
 - MNOs also said that the majority of gateway operators would be unwilling to cooperate or coordinate with MNOs as it is not in their interests to do so, although one MNO response said that it had a reasonable relationship with users of single-user gateways and another operates a code allowing single-user gateways to register and operate under certain conditions, although this has been little-used.
 - Gateway operators were also sceptical and cited MNOs' general unwillingness to supply service.
 - However, certain respondents saw better coordination between MNOs and gateway operators as a possible solution.

¹² The WTA defines interference to be *“harmful” if it, inter alia, “degrades, obstructs or repeatedly interrupts”* any authorised broadcast or radio transmission.

Ofcom's conclusions on network congestion and service quality

- 3.10 It appears to Ofcom that harmful interference arises from the use of GSM gateways where the aggregate volume of peak load traffic originating from gateways in an area exceeds the capacity of the mobile network to cope with such traffic, in addition to the traffic originating from or terminating with ordinary mobile phone users, without reducing the quality of service on offer to an unacceptable level. In principle at least therefore, any use of a GSM gateway has the potential to cause harmful interference, either by itself, or in combination with other gateway use.
- 3.11 In practice however, it seems that certain types of gateway use are more likely to cause or contribute to harmful interference, whereas others are less likely to do so or can be dealt with more easily if harmful interference does arise.
- 3.12 The risk of harmful interference from gateways depends on the aggregate call volume that they transmit and their geographical distribution. A concentration of high-capacity gateways serving many originating callers is more likely to cause interference than a more even distribution of gateways, each of which serves relatively few originating callers.
- 3.13 On this basis, of least concern are lower capacity gateways that are located on the same premises as the originating caller. These will tend to be more dispersed geographically as no gateway will serve more than one premises, leading to a more even pattern of calls over the entire network; and the pattern of demand will be more stable as end-users tend to change their premises relatively infrequently.
- 3.14 Of greatest concern are higher capacity gateways that serve many end-users. These can be expected to create a less even pattern of demand as calls from many end-users will be concentrated at the gateway locations. Moreover, because such gateways serve several end-users, they are each likely to carry higher volumes of traffic. Finally, because the gateway location will be separate from the end-users' premises, they may be established anywhere in the country and can be relocated relatively easily. This will make patterns of demand harder for MNOs to predict and plan for and so make harmful interference more likely to arise.
- 3.15 For similar reasons, Ofcom also has concerns about the use of single-user gateways at locations remote from the originating caller. A cluster of such gateways would in many respects have the same potential to cause harmful interference as a single high-capacity, multi-user gateway and would carry a similar risk of harmful interference.
- 3.16 Whilst it would probably be possible to impose an aggregate limit on the capacity of gateways at a particular location through individual licensing, Ofcom considers it unlikely that it would be able to impose and/or enforce such a restriction in the context of licence exemption. Ofcom therefore considers it appropriate to seek to identify other characteristics of gateway use which might be useful indicators of the aggregate volume of traffic handled by a gateway (or cluster of gateways). In this regard, Ofcom believes that the distinction between single-user gateways located on the same premises as the originating caller and other types of gateway use has some merit. There is evidence from the responses that the use of single-user gateways presents less of a risk than the use of multi-user gateways, as the effect of the pattern of traffic from a single user is, as a general rule, less than that from multiple users.

- 3.17 Ofcom acknowledges that there are cases in which even single-user gateways can give rise to harmful interference. Yet the evidence suggests that this is relatively unlikely. In any case, the Exemption Regulations contain a general provision that requires exempt equipment to be operated in such a way as not to cause harmful interference. This would enable action to be taken if any gateway use that was exempt was to give rise to a serious problem of harmful interference.
- 3.18 Based on its consideration of the responses, Ofcom is minded to conclude that:
- the risk of congestion and reduced service quality arising from gateway use is capable of constituting harmful interference within the terms of the WTA;
 - the distinction in the Exemption Regulations between commercial and self-use may not be the best predictor of the risk of harmful interference as this appears better correlated with whether or not the gateway is used by a single user or many users and with whether the gateway is located at the same premises as the originating caller or elsewhere;
 - the risk of harmful interference from the use of single-user gateways located at the same premises as the originating caller would appear to be materially less than that from the use of multi-use gateways or single-user gateways located away from the originating caller's premises.

ii. Impact on emergency services and consumers of the masking of caller location and identity

- 3.19 Gateways mask the location and identity of the originating caller as the call appears to the mobile network to originate from the gateway rather than the originating line. This has potential implications for effective operation of emergency services as it makes identifying the source of an emergency call difficult if the gateway is not at the same premises as the originating caller. In addition, consumers may be adversely affected if they are unable to identify the originating caller before deciding whether or not to answer or return the call. One respondent also referred to the inability of the called party to correctly return a call that has been routed through a gateway, since any return call will be routed to the gateway rather than the original caller.
- 3.20 Condition 4 of the General Conditions¹³ that apply to providers of publicly available telephone services and certain other communications providers, which could include certain commercial gateway operators, requires that caller location information should, *“to the extent technically feasible”* be made available to the emergency organisations handling emergency calls. In addition, condition 16 requires calling line identification (CLI) facilities to be provided where *“technically feasible and economically viable”*.
- 3.21 Ofcom's Guidelines for the Provision of Calling Line Identification Facilities¹⁴, clarify that it is not sufficient for a communications service provider to refuse to supply CLI facilities just because they are not supported by its network. The service provider would be expected to develop a programme of work, with milestones, aimed at

¹³ The General Conditions of Entitlement, Final statement issued by the Director General of Telecommunications - 9 July 2003, available at:

<http://www.ofcom.org.uk/static/archive/oftel/publications/licensing/2003/cond0703.htm>

implementing a solution and would not be justified in refusing to supply CLI facilities unless the difference between the cost of providing them and the revenue of the service was demonstrably excessive, and hence disproportionate.

- 3.22 The responses gave differing views on the extent to which it would be technically feasible for CLI to be made available for calls routed through GSM gateways, although one respondent indicated that solutions were available in some cases as long as the correct infrastructure is in place.
- 3.23 It was argued that it would be disproportionate to ban particular equipment on grounds that it cannot readily comply with regulations on the provision of caller location information and CLI facilities. Ofcom should adopt a technology-neutral approach that leaves it to the market to decide whether or not it is economical to design and manufacture equipment that complies with the requirements. Responses, including from a major fixed network operator, further pointed out that, barring an error in configuring the customer's PBX or gateway, calls to emergency services will not be presented to the gateway but will be subject to specialised routing by the first connected exchange for a fixed line call and by the connected network for a mobile call and will be routed directly to an emergency call handler such as BT. It was also pointed out that caller location information would be accurate where the gateway is located at the originating caller's premises.

Ofcom's conclusions on the masking of caller location and identity

- 3.24 Ofcom takes very seriously the concerns that have been expressed about the masking of caller location and identity, particularly in relation to the implications for the effectiveness of the emergency services.
- 3.25 However, it appears to Ofcom that use of gateways is unlikely to impede the emergency services in responding to emergency calls. This is because, as pointed out in the responses to the previous statement, emergency calls should not be routed through gateways. In any case, General Condition 4 already imposes obligations that will apply to certain gateway operators and could be extended if necessary. Accordingly, there seems no need to impose restrictions under the WTA on gateway use for the purpose of making caller location information available to emergency services.
- 3.26 Ofcom accepts that lack of CLI facilities for calls directed through a gateway is a potential detriment and inconvenience to consumers. On the other hand, under regulation 10 of the Privacy and Electronic Communications Regulations 2003¹⁵, callers generally have the right to withhold their CLI from the called party so there is no certainty that the information will in any case always be available.
- 3.27 Accordingly, Ofcom is minded to conclude that there is no justification for restricting use of gateways under the WTA to make caller location information and CLI facilities available to emergency services or consumers.

¹⁵ SI 2003 No. 2426

iii. Impact on activities under the RIPA

- 3.28 The responses gave differing views on the extent to which it would be technically feasible for CLI to be made available for calls routed through GSM gateways, although one respondent indicated that solutions were available in some cases as long as the correct infrastructure is in place.
- 3.29 The previous statement sought views on the implications of the use of gateways for activities under the RIPA and on whether the impact depends on the type of use to which the gateway is put (eg single- or multi-user).
- 3.30 The responses on this issue, some of which were confidential, confirm Ofcom's understanding that the use of gateways could affect activities under the RIPA. Accordingly, it might be necessary to introduce conditions in order to counter this impact if use of GSM gateways were further liberalised. These conditions might be imposed under the WTA or by other means. Ofcom will discuss these matters further with relevant government departments before deciding how to proceed.

iv. Reducing the cost of calls to mobiles

- 3.31 The responses to the previous statement reveal differing views on whether use of gateways would promote or detract from consumer welfare. On the one hand, it is argued that gateways provide a way for consumers to obtain lower prices for calls to mobiles by avoiding the imposition of call termination charges for calls that originate on one network but terminate on another. The resulting lower call charges would, it is claimed, provide a direct benefit to consumers. Conversely, maintaining current restrictions on lawful gateway use to non-commercial operation would limit the ability of consumers to benefit from cheaper calls.
- 3.32 On the other hand, it is argued that the retail mobile market is already competitive; that widespread use of gateways would distort the retail market; and that charges would end up being rebalanced or changed in a way that would be to the detriment of consumers overall.
- 3.33 This is a complex issue. Lower prices can usually be expected to benefit consumers and one of Ofcom's principal duties is to further the interests of consumers in relevant markets, where appropriate by promoting competition. However, for reasons discussed below, Ofcom is doubtful whether changing the legislation on commercial use of gateways would by itself result in significant consumer benefits.
- 3.34 The nature of the consumer benefits resulting from commercial use of gateways is dependent upon the type of gateway use. The magnitude of the benefits from single-user commercial gateways is broadly comparable to the benefits already available from self-use as both involve similar types of use and user, distinct from multi-user gateways. By contrast, it has been argued that the consumer benefits available from multi-user gateways would be significantly greater, as multi-user gateways could be used to carry calls to mobiles originating from all types of user, thereby allowing all consumers to benefit from cheaper calls to mobiles.
- 3.35 These benefits appear to derive entirely from the exploitation of an arbitrage between the regulated rates charged by the MNOs for call termination on their networks and

the (unregulated) retail rates that the MNOs choose to charge for on-net mobile-to-mobile calls. Ofcom has seen no evidence to suggest that GSM gateways are an intrinsically more efficient method of delivering calls to mobiles. Achievement of these benefits is therefore dependant on the ability of GSM gateway operators to access cheap on-net mobile-to-mobile call rates. For the reasons set out below, Ofcom does not currently consider it likely that such access would continue to be widely available if multi-user GSM gateway use were legalised.

- 3.36 If the use of multi-user gateways were legalised, it seems likely that fixed network operators and service providers would increasingly seek to use them to access discounted call termination rates. Widespread exploitation of the arbitrage opportunity arising from the current difference between retail on-net mobile calls rates and wholesale call termination rates could impact upon the commercial viability of the MNOs' retail pricing policies and it is likely that they would consider it necessary to take some form of action in response.
- 3.37 There are several legally acceptable ways in which they could do so. For example, MNOs have not been found to have significant market power (SMP) in the retail market and, from an ex ante regulatory perspective, are therefore entitled to discriminate between customers. Hence, to the extent that it is compatible with their obligations under ex post competition law, the MNOs might lawfully decide to refuse to provide a retail service to multi-user gateway operators or to discriminate in price between them and other users¹⁶. This discrimination could be expected to result in multi-user gateway operators paying higher call prices, more reflective of the costs imposed by their use of the MNOs' networks, and would in all likelihood be at least as high as the rates charged by the MNOs for ordinary call termination on their networks.
- 3.38 In response to such action, multi-user gateway operators could request the MNOs to provide them with a wholesale call termination service (delivered via a GSM gateway or otherwise). MNOs are obliged to provide call termination services as they have been found to have SMP in the wholesale market for call termination on their individual networks¹⁷. Moreover the rates which MNOs charge in the termination market are regulated by Ofcom. However a 'no undue discrimination' obligation also limits the extent to which they may offer different (wholesale) customers different termination rates.
- 3.39 Were the MNOs to respond as suggested above, it seems likely that the benefits of the use of GSM gateways would be largely if not entirely eliminated. It therefore appears to Ofcom that any beneficial effect of the use of GSM gateways on the prices paid for calls to mobiles could only be guaranteed if Ofcom were to take additional regulatory action to enforce continuance of the arbitrage which GSM gateways exploit.
- 3.40 In this context, we acknowledge the point made in a number of responses to Ofcom's earlier statement that gateways and their regulation cannot be considered in isolation from the general issue of the regulation of calls to mobiles (CTM). One respondent sought acknowledgement from Ofcom that the issues of the regime for GSM gateways and CTM are "*inevitably intertwined*". Ofcom agrees that the issues are related and for this reason Ofcom is considering whether such further regulatory action would be desirable as part of the CTM review.

¹⁶ Ofcom understands that the MNOs already impose conditions on certain retail price packages with the objective of making them unavailable or unattractive to (illegal) commercial gateway operators.

¹⁷ http://www.ofcom.org.uk/consult/condocs/mobile_call_termination/wmvct/

- 3.41 If, as a result of that review, Ofcom were to alter its regulation of the call termination market in order to reduce call termination charges, it would in all probability do so by acting to reduce charges directly in a technology-neutral manner across the board rather than indirectly through discriminating in favour of a particular technology such as gateways, especially if that technology has the potential to increase spectrum congestion and interference. Therefore, those reduced call termination charges would in all probability not be limited to multi-user gateway operators and any resulting consumer benefits would be achieved with or without gateway liberalisation.

Ofcom's conclusion on reducing the cost of calls to mobiles

- 3.42 Based on the evidence and information currently available, Ofcom is minded to conclude that the case for gateways on grounds of the effect on the price for calls to mobiles is weak. It seems unlikely that authorising gateway use would lead to substantial and sustainable reductions in the price of such calls under the present CTM regime. Possible changes to that regime are being considered as part of the CTM review, but, if that regime were altered to achieve lower mobile voice call termination rates, those reduced rates would be likely to become available to all operators and not just to the operators of GSM gateways.

Gateway regulation elsewhere in Europe

- 3.43 As part of its analysis, Ofcom has researched how GSM gateways are regulated by other European administrations. Note that the position recorded here should not be regarded as definitive as some administrations have yet to confirm the accuracy of Ofcom's understanding.
- 3.44 Austria, Denmark, Estonia, Greece, Hungary, Romania, Malta, the Netherlands, Norway, the Slovak Republic and Sweden all appear to authorise GSM gateway use, in some cases subject to compliance with the RTTE Directive¹⁸, or have no specific GSM regulation. Other administrations, as summarised in the following table, restrict GSM gateway use or have expressed an opinion on the undesirability of certain types of use.

Country	Position on GSM gateway use
Belgium	Gateways may be installed for personal use and for commercial use only if MNO gives consent. Consent may be refused if request is unreasonable or installation would be incompatible with certain requirements, eg operational security, network integrity, interoperability, data protection.
Bulgaria	Ordinance on interconnection does not contemplate terminal devices such as gateways.
Czech Republic	No specific decision but PTOs have rejected interconnection through gateways. Regulator has characterised this rejection to be "legitimate".

¹⁸ Directive 1999/5/EC.

France	Regulator judges gateways to be technically and economically inefficient in terms of usage of radio spectrum.
Germany	Regulator differentiates between corporate use of gateways and their use to provide interconnection. The latter is not judged to be a proper use of frequencies assigned for mobile networks.
Irish Republic	Single-user gateways are permitted. Use of gateways to provide interconnection is not.
Portugal	Gateways not allowed for commercial purposes because they decrease quality of service and are detrimental to users and MNOs. Single-user gateways appear to be permitted.
Slovenia	Multi-user gateways are prohibited. Own use gateways are tolerated.
Switzerland	No specific regulation but gateway operators are subject to the same obligations as other telecommunications service providers, including on transmitting CLI and in regard to lawful interception.

- 3.45 It can be seen that the position of gateways varies throughout Europe. Some administrations tolerate gateway use with minimal restrictions. Others prohibit the use of multi-user gateways or commercial provision of gateway services or impose restrictions that make them impracticable but allow the use of single-user gateways. One administration, Belgium, makes commercial provision of gateways services subject to MNO control and imposes a framework for the exercise of that control. In view of the range of regimes, it is difficult to draw any firm conclusions, except that there seems to be a degree of consensus as to the policy considerations that gateways raise.

Question 1: Do you agree with Ofcom's conclusions on the costs and benefits of gateway use?

Section 4

Options for future regulation of GSM gateway use

- 4.1 This section presents and discusses options for the future regulation of GSM gateway use under the WTA.
- 4.2 As stated in section 2 above, as part of its new approach to spectrum management, Ofcom aims to remove restrictions on the use of radio spectrum wherever possible. Ofcom is a light-touch regulator with a general preference for using market mechanisms as opposed to central planning and regulation as we believe market mechanisms are generally better at securing optimal use of the radio spectrum in the interests of all. However, we recognise that markets need a framework of regulation and also that there are circumstances in which it may continue to be necessary to impose restrictions, for example for the purposes of preventing harmful interference or correcting market failure.
- 4.3 In the case of gateways, Ofcom considers there are specific factors that make it necessary to retain restrictions on their operation. As discussed in the previous section, widespread use of gateways would be likely to impose costs on consumers, for example in terms of an increase in harmful interference. The challenge is to identify as accurately as possible those types of use that are unlikely to give rise to harmful interference and that can therefore be generally authorised (exempted from licensing) as distinct from those for which the risk of harmful interference is too great and which must therefore be individually licensed or prohibited entirely. In either case Ofcom must consider what conditions to attach to such authorisations in the light of its statutory duties, including, but not limited to, securing the optimal use of the radio spectrum.
- 4.4 Responses to the previous statement expressed a range of views on the appropriate extent of future regulation of gateway use. These ranged from advocating an absolute prohibition on gateways (because their use carries too great a risk of harmful interference or other disbenefit) to total liberalisation (on the grounds that the current prohibition is disproportionate and unnecessary). Some considered that unrestricted use of gateways would be undesirable but considered that the impact of single-user gateways would be less.

Options

- 4.5 The main options for the future regulation of gateway use appear to Ofcom to be the following¹⁹.
- i. Maintain the status quo. Use of gateways would be lawful only if operated on a non-commercial basis by the end-user.
 - ii. Outright prohibition - revise the Exemption Regulations so that no gateway use is exempted.

¹⁹ In all cases, the Exemption Regulations would, as foreshadowed by the Government's statement of 18 July 2003, be amended to clarify that equipment may be fixed or moving.

- iii. Liberalise the Exemption Regulations to allow commercial use of single-user GSM gateways located at the same premises as the originating caller.
- iv. Individual authorisation of gateways, potentially including multi-user gateways, with conditions imposed to reduce the risk of harmful interference to other legitimate users.
- v. Exempt all use of gateways, including multi-user gateways.

4.6 Option iv could be combined with any of options i, ii or iii.

Comparison of options

- 4.7 As discussed in the previous section, it appears to Ofcom that there is little to choose between the options in respect of economic benefit and impact on emergency services and consumers of loss of caller location information and CLI facilities.
- 4.8 As far as network congestion and service quality are concerned, Ofcom agrees that there is a risk of harmful interference that depends on the way in which the gateway is used.

Status quo: option i

- 4.9 Ofcom is not inclined to favour this option as it would prohibit all commercial use of gateways even though some forms of commercial use do not appear to give rise to an unmanageable or unacceptable risk of harmful interference.

Changes to Exemption Regulations: options ii, iii and v

- 4.10 Option ii (outright prohibition) does not appear to Ofcom to be an appropriate way of regulating GSM gateway use, as it would prevent use of gateways even in circumstances in which the risk of harmful interference appears manageable and acceptable.
- 4.11 Option iii (exempting use of single-user gateways at the same premises as the originating caller) would control the level of harmful interference and should keep it within manageable bounds. As pointed out in some responses, it is possible for even the use of a single-user gateway to cause congestion if it carries enough traffic. However, this is expected to be comparatively unusual and the general provision in the Exemption Regulations requiring that exempt equipment should be operated so as not to cause harmful interference would enable enforcement action to be taken in such cases if harmful interference was to arise that could not be resolved through commercial negotiation between the MNO affected and the user concerned. This option would not extend exemption to multi-user gateways or single-user gateways located on premises remote from the originating caller. This seems proportionate given the apparently greater risk of harmful interference from such use. However, as discussed below, there may be scope to allow such gateways on a case-by-case basis under option iv.
- 4.12 Option v (exempting all gateway use) would offer greatest flexibility but also carries the greatest risk of harmful interference. Although it may be possible for MNOs to control interference, for example through registration and coordination procedures introduced on a contractual basis, it is in practice likely to be difficult for MNOs to

exercise ex ante control. By the time a MNO has detected and disconnected an interfering gateway, other customers of the network will already have suffered the effects. Without the threat of enforcement action by Ofcom against gateway operators that cause such harm, there would be little or no effective deterrent against gateway operators that did not comply with the MNOs' requirements.

Individual authorisation: option iv

- 4.13 Individual authorisation does not seem necessary for all gateway use, as use of single-user gateways located at the same premises as the originating caller does not appear likely to cause an unmanageable risk of harmful interference. For other types of gateway use, however, option iv could provide scope for further liberalisation, while enabling a degree of control to be exercised on a case-by-case basis to manage the risk of harmful interference.
- 4.14 There are various ways in which this option might be implemented. For example, Ofcom could extend the scope of the existing 2G (GSM) licences to authorise the MNOs to use such gateways and then rely upon the mechanism of spectrum trading to allow such authorisation to be transferred to other gateway operators. Alternatively Ofcom could authorise individual gateways, or authorise individual gateway operators, with or without a requirement to notify Ofcom of the individual gateways to be operated.
- 4.15 The first approach would be most consistent with Ofcom's general approach to spectrum management, in particular its policies towards the spectrum usage rights of incumbent licensees in the context of the introduction of spectrum trading and liberalisation. Ofcom would normally only deviate from such policies if it had concerns about potential market failure that appeared likely to give rise to outcomes that would be inconsistent with Ofcom's statutory duties and wider policy aims. That said, Ofcom has not as yet extended spectrum trading and liberalisation to the GSM spectrum for reasons that have been set out in Ofcom's *Spectrum Framework Review: Implementation Plan* consultation²⁰.
- 4.16 Were Ofcom to decide to authorise (license) individual gateways or gateway operators, there are various forms of licence terms and conditions that could be imposed to manage the risk of harmful interference. For example, to the extent that the risk of harmful interference could be mitigated through the provision of information to the relevant MNO(s) in advance of the commencement of gateway operation, the licence could require the provision of such information to the MNO(s). Operation of any gateway that was not consistent with such information would be outside the scope of the licence and hence illegal. The information to be provided could, for example, include: the location of the gateway; the IMEI of the gateway; and the number and identity of the SIMs to be installed in the gateway. Alternatively, if the provision of information would be insufficient to control the risk of harmful interference, it could perhaps be made a condition of the licence that the gateway operator coordinated the use of their gateway with the relevant MNO(s).
- 4.17 Any individual licensing approach would, however, not be without its costs. In particular there would be the cost to Ofcom (and hence potentially to licensees) of administering the licensing system. The magnitude of these costs would be likely to depend materially on the complexity of the licensing process, and in particular on the extent to which Ofcom needed to make licensing decisions.

²⁰ <http://www.ofcom.org.uk/consult/condocs/sfrip/>

- 4.18 There could also be costs for MNOs in assessing the risk of harmful interference from proposed gateways and mitigating that risk. This would require a detailed knowledge of network configuration and traffic levels and MNOs would inevitably have to undertake much of this work. The costs of this to the MNOs could in principle be recovered through the price they charged for serving the gateway if they decided to provide service²¹. Even if a particular GSM gateway were to be licensed, the MNOs might lawfully refuse to supply service. If that was to happen, the licence could be nugatory.
- 4.19 Ofcom notes comments in responses to the effect that MNOs are unlikely to cooperate with gateway operators over connecting gateways to their networks as there is a conflict of interest. On the other hand, the fact that one MNO has introduced a code for gateway connection indicates that there may be scope for commercial negotiation that could be developed with good will on both sides to allow gateways to be connected, even if they fall outside the scope of the Exemption Regulations, and some respondents considered that better coordination with MNOs could provide a way forward.
- 4.20 Option iv may therefore offer some scope for liberalisation of gateway use that is not exempted, while managing the risk of harmful interference that might arise. However, given the additional costs this option could impose on the MNOs and Ofcom and the fact that the licences could not be utilised unless the MNOs were prepared to supply service to the licensed gateways, it might not on balance be worth proceeding with this in the absence of a commitment by the MNOs to cooperate with such use, or a change in the regulatory environment to require them to do so.

²¹ See paragraph 79 below. MNOs are under no a priori obligation to supply retail service to GSM gateways.

Summary of risk analysis

4.21 The following table summarises the risk analysis for the options.

	<i>Congestion and service quality</i>	<i>Effect on emergency services and consumers of masking caller location and identity</i>	<i>General comment</i>
<i>i. Status quo – gateways authorised for non-commercial use only</i>	Acceptable risk – no change	Acceptable - no change	Distinction between single-user and multi-user use may be more appropriate going forward
<i>ii. Outright prohibition on gateway use</i>	Acceptable – eliminates risk	Acceptable – no use of gateways allowed	Not objectively justified on interference or CLI grounds
<i>iii. Authorise single-user gateways on same premises as originating caller</i>	Acceptable risk – manageable by Exemption Regulations	Acceptable - location identified by gateway location and controllable by General Conditions	Appears to be objectively justified and proportionate
<i>iv. Individual authorisation of gateways or operators subject to conditions to mitigate risk of harmful interference</i>	Acceptable – risk taken into consideration in licensing decision and mitigated through licence conditions	Acceptable – controllable by General Conditions	Case for individual authorisation unclear. Absent further intervention, which may not be justified, only likely to be of value with the cooperation of the MNOs
<i>v. Unconditional authorisation</i>	Unacceptable – lack of effective control of interference	Acceptable – higher risk but controllable by General Conditions	Not appropriate, given lack of effective control of interference

4.22 It should be emphasised that this consultation is focussed on the issue of the extent to which GSM gateway use should be authorised under the WTA and the means by which such authorisation should be effected. Nothing in this consultation should be interpreted as proposing the imposition of any additional obligation on any MNO to supply any particular service to any particular customer. Even if GSM gateways were to be further authorised under the WTA, MNOs would continue to be at liberty to decide whether or not to supply services to gateway operators and on what terms, provided that they complied with their general and specific legal and regulatory obligations. Consideration of the impact that a specific GSM gateway might have on their network or other customers could be a legitimate consideration for them when deciding whether or not to supply services to such a gateway and on what terms.

Conclusions

- 4.23 The choice between the options depends principally on an assessment of the risk of harmful interference and the implications for activities conducted under RIPA.
- 4.24 As far as harmful interference is concerned, option iii would confer general authorisation where the risk of harmful interference is considered sufficiently low. Option iv could provide some additional flexibility to allow the other types of gateway use to be authorised on an individual case-by-case basis where the risk is judged too high to justify general authorisation. However, this would impose additional costs on Ofcom and the MNOs and may not be worthwhile without commitment from the MNOs to cooperate or other changes in the regulatory environment. Ofcom would welcome views on this conclusion.
- 4.25 In coming to a final decision on these matters Ofcom will also take account of the outcome of discussions with the relevant government departments on the potential implications of gateway use for activities conducted under the RIPA.

Enforcement

- 4.26 Some responses to the previous statement urged Ofcom to play a more active role against unauthorised use of gateways. They argued that it is difficult for MNOs to prevent unauthorised use of gateways ex ante and by the time they have detected and disconnected an unauthorised gateway, other customers of the networks will already have suffered the effects.
- 4.27 In view of the evidence of harmful interference to mobile networks and their customers and of the practical difficulties for MNOs in exercising ex ante control over connection of gateways to their networks, Ofcom agrees that it would be appropriate to take enforcement measures against unauthorised use of gateways. This would principally involve investigating reports of harmful interference and/or reports of unauthorised operation of gateways. Investigations could lead to sanctions ranging from warnings and formal cautions to prosecutions which, if proved, would result in criminal convictions.

Question 2: Do you agree with the analysis in this document of options for the future regulation under the WTA of the use of GSM gateways?

Question 3: Are there other options that Ofcom should consider?

Question 4: Are there other considerations that Ofcom should take into account in assessing the options?

Next steps

- 4.28 Ofcom will consider in the light of the responses to this consultation and further discussions with government departments how to proceed. If it decides to amend the Exemption Regulations, it will then consult on the amending regulations as required by section 403 of the Communications Act 2003.

Annex 1

Responding to this consultation

How to respond

Ofcom invites written views and comments on the issues raised in this document, to be made by **5pm on 6 September 2005**.

Ofcom strongly prefers to receive responses as e-mail attachments, in Microsoft Word format, as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response cover sheet (see Annex 3), among other things to indicate whether or not there are confidentiality issues. The cover sheet can be downloaded from the 'Consultations' section of our website.

Please can you send your response to diana.kennedy@ofcom.org.uk.

Responses may alternatively be posted or faxed to the address below, marked with the title of the consultation.

Diana Kennedy
Competition & Markets
4th Floor
Ofcom
Riverside House
2A Southwark Bridge Road
London SE1 9HA

Fax: 020 7783 4103

Note that we do not need a hard copy in addition to an electronic version. Also note that Ofcom will not routinely acknowledge receipt of responses.

It would be helpful if your response could include direct answers to the questions asked in this document, which are listed together at Annex 4. It would also help if you can explain why you hold your views, and how Ofcom's proposals would impact on you.

Further information

If you have any want to discuss the issues and questions raised in this consultation, or need advice on the appropriate form of response, please contact Diana Kennedy on 020 7783 4201.

Confidentiality

Ofcom thinks it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, www.ofcom.org.uk. We will do this on receipt of responses, unless respondents request otherwise on their response cover sheet.

All comments will be treated as non-confidential unless respondents specify that part or all of the response is confidential and should not be disclosed. Please place any confidential parts of a response in a separate annex, so that non-confidential parts may be published along with the respondent's identity.

Ofcom reserves its power to disclose any information it receives where this is required to carry out its functions. Ofcom will exercise due regard to the confidentiality of information supplied.

Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use, to meet its legal requirements. Ofcom's approach on intellectual property rights is explained further on its website, at www.ofcom.org.uk/about_ofcom/gov_accountability/disclaimer.

Next steps

Following the end of the consultation period, Ofcom intends to make a statement and consult on draft exemption regulations around the end of November.

Please note that you can register to receive automatic notifications of when Ofcom documents are published, at http://www.ofcom.org.uk/static/subscribe/select_list.htm.

Ofcom's consultation processes

Ofcom is keen to make responding to consultations easy, and has published some consultation principles (see Annex 2) which it seeks to follow, including on the length of consultations.

If you have any comments or suggestions on how Ofcom conducts its consultations, please call our consultation helpdesk on 020 7981 3003 or e-mail us at consult@ofcom.org.uk. We would particularly welcome thoughts on how Ofcom could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumers, whose views are less likely to be obtained in a formal consultation.

If you would like to discuss these issues, or Ofcom's consultation processes more generally, please contact Tony Stoller, Director of External Relations, who is Ofcom's consultation champion:

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2A Southwark Bridge Road
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Fax: 020 7981 3630
tony.stoller@ofcom.org.uk

Annex 2

Summary of responses to statement of 3 March 2005

A2.1 This Annex summarises responses to Ofcom's statement of 3 March as they relate to the issues on which views are sought in this consultation. 17 responses were received, of which 9 were confidential. The non-confidential responses are being placed on Ofcom's website with this document.

Interference network congestion and service quality

- A2.2 MNOs stated that use of GSM gateways has significantly increased traffic on their networks. They have been unable to plan for the increase in traffic and the increased loading on individual base stations has meant that the customers of MNOs have been unable make and receive calls. MNOs expect a significant increase in call volume if multi-user gateways were to be legalised. Creating additional capacity is difficult because of restrictions on planning permission for new cell sites and also the difficulty in finding new sites. Where insufficient capacity in an area has led an MNO to disconnect a gateways operator, such operators have relocated causing the same problems in other areas. This has made it difficult for the MNOs to plan their capacity and provide for other users. It is easy to move a GSM gateway so disconnection is not an adequate solution to the problem.
- A2.3 Floe stated that coping with the demand from gateways should be part of the MNOs' normal business as a network operator and did not consider the issues raised by GSM gateways to be any more complicated than the routine functions within fixed line interconnect agreements. It did not believe that the use of the GSM gateways makes any difference to the issue of congestion. Equally, Gamma did not believe that the issues raised are harmful interference as defined by Article 2(b) of the Authorisation directive.
- A2.4 Certain respondents saw better coordination between GSM gateways operators and MNOs as a solution to managing the risk of network congestion and service quality reduction.

Single- vs multi-user gateways

- A2.5 MNOs stated that multi-user gateways cause less efficient use of scarce spectrum and have a negative impact on the competitive access and call origination market. They generally agree that the current regime is the best way forward permitting use by individual subscribers and prohibiting their use by third parties. They called for Ofcom to play a greater role in policing GSM gateways, especially once the legal position has been clarified because otherwise it would be very simple and cheap for gateways operators to set-up their operations again once they have been cut off. Another respondent explained that even if Ofcom were to make GSM gateways illegal, there would be a significant risk that certain suppliers would continue to operate such equipment which would undermine other operators' ability to be competitive in the market.

Caller location and identity

- A2.6 Most respondents saw provision of caller identity and location information as important issues in the context of future regulation of GSM gateways.
- A2.7 Where a gateway is used by a single user, the CLI of the SIMs that are used in that gateway would represent the user. Where a gateway is used to provide a service to multiple end users, the CLI presented will bear no relation to the actual caller. Each SIM in the network will be used to connect calls as it becomes free so there is no relationship between the SIM and the end-user; this can have major implications for the emergency services and affect the provision of other services. Solutions to the issues raised by this limitation varied. A few respondents considered that there are technical solutions to all of the problems raised and Gamma stated that such solutions have already been developed in other countries. However, most respondents advised caution.
- A2.8 One respondent explained that, in general, a GSM gateway will only carry traffic which terminates on that particular mobile network. In principle, there should be no emergency traffic presented at the GSM gateway because it should be routed directly through to BT. However, gateways are “Customer Premises Equipment” and as such under the control of the customer. So if the gateway or “Private Business eXchange” is incorrectly configured, or used as an overflow it is possible that an emergency call could be routed through a GSM gateway. This could lead to confusion because the caller ID could be lost or incorrectly presented. However, Floe Telecom Limited (a GSM gateway operator) stated that emergency calls would never be routed through its GSM gateways in the first place because they are subject to specialised routing by the first connected exchange for a fixed line call and by the connected network for a mobile call.
- A2.9 One MNO stated that it is only possible to locate single user gateway devices because the information comes from a reference to the cell from which the call originates; in the case of gateways, this is the location of the gateway. The MNO did not anticipate that it would be feasible to provide information through gateway devices that could override the cell ID.
- A2.10 Some respondents felt that market incentives will not be sufficient to ensure that communications providers will correctly handle CLI information because correct identification of the end-user requires the collaboration of network providers.
- A2.11 Floe argued that the same issues that affect GSM gateways affect VoIP and therefore the same solution should be applied. If in respect to VoIP it is decided that it may not always be technically feasible to make caller location information available such as for nomadic services then the same view should be taken for GSM gateways. However, Floe stated that it is technically feasible to provide CLI for calls routed through GSM gateways. This would be achieved through the use of roaming fields or by using the GSM gateways’ ability to send two numbers plus separators to the called number field. Floe went on to say that successful trials have been carried out with major GSM gateway manufacturers and mobile operators outside the UK. Floe did not consider that there should be any differentiation between public, private, single or multiple user gateways. Gamma took a similar view, stating that arguments relating to CLI are overstated and a

technology-neutral approach should be adopted. Requirements should be in the form of conditions of entitlement and operators should be free to find technical solutions to deal with the issues raised.

Activities under the RIPA

- A2.12 Several responses expressed concerns that use of gateways could affect activities under the RIPA and that the effect could be greater in the case of use of multi-user gateways. There were different views on how these effects might in practice be countered.

Economic benefits

- A2.13 A number of respondents believed that the initial growth in GSM gateways was triggered by the high prices charged for mobile call termination and the price differential between on- and off-net calls. One respondent went on to say that if GSM gateways are held to be illegal then it is essential that other incentives are in place to ensure that mobile network operators reduce their termination charges.
- A2.14 A number of respondents stated that they had decided not to comment more fully at this time as they would be doing so in the context of the future investigation into mobile call termination charges. One such respondent commented that Ofcom should not make any decisions without proper consideration of the impact of both price controls & GSM gateways. Another respondent, while supporting spectrum liberalisation in general, considered that liberalisation of gateway use should not be considered in isolation from Ofcom's review of mobile call termination. Despite these comments, it saw a role for permitting use of GSM gateways on an individual company basis or gateway operator basis but recognised that they could be a disruptive force in the market if not correctly regulated.
- A2.15 One respondent commented that, as a provider to residential fixed line customers, it would like to provide lower priced fixed to mobile calls and considered that commercial use of gateways would help achieve this. On the other hand, one MNO saw use of its network by gateways as free-riding because the gateway operator did not have to invest in the infrastructure necessary to provide the service.
- A2.16 The MNOs noted that they had invested in obtaining rights to their spectrum and rolling out a mobile infrastructure. Gateways operators provide a means of financial arbitrage between on-net and off-net pricing. The MNO pointed out that this pricing structure is an entirely legitimate and already subject to price controls. Furthermore, to require MNOs to undertake investment in order to reduce congestion and facilitate the use of gateways would constitute an unjustified interference with the MNOs' property rights including their exclusive use of scarce radio frequencies. The MNO stated that the GSM system was not designed to handle gateways systems or any similar type of devices and that sensitivity to building new base stations and difficulty in finding new sites make it problematic to adjust capacity to meet demand in a timely manner.
- A2.17 The MNOs did not believe there to be any economic benefits from GSM gateways use. In particular, they raise the issue of inefficiency because gateways use an increased number of connections to make a call and increase the likelihood of errors in making connections.
- A2.18 One respondent suggested that the issue of cross-subsidisation could be overcome by liberalising GSM gateways. This would force operators to increase charges for

on-net calls and reduce call termination charges. It believed that this would be in the best interests of fixed line consumers. Floe stated that the market should be able to decide on the most efficient use of the radio spectrum and that the use of GSM gateways has been proven to add value to the end user.

Annex 3

Ofcom's consultation principles

Ofcom has published the following seven principles that it will follow for each public written consultation:

Before the consultation

- A3.1 Where possible, we will hold informal talks with people and organisations before announcing a big consultation to find out whether we are thinking in the right direction. If we do not have enough time to do this, we will hold an open meeting to explain our proposals shortly after announcing the consultation.

During the consultation

- A3.2 We will be clear about who we are consulting, why, on what questions and for how long.
- A3.3 We will make the consultation document as short and simple as possible with a summary of no more than two pages. We will try to make it as easy as possible to give us a written response. If the consultation is complicated, we may provide a shortened version for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.
- A3.4 We will normally allow ten weeks for responses to consultations on issues of general interest.
- A3.5 There will be a person within Ofcom who will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organisations interested in the outcome of our decisions. This individual (who we call the consultation champion) will also be the main person to contact with views on the way we run our consultations.
- A3.6 If we are not able to follow one of these principles, we will explain why. This may be because a particular issue is urgent. If we need to reduce the amount of time we have set aside for a consultation, we will let those concerned know beforehand that this is a 'red flag consultation' which needs their urgent attention.

After the consultation

- A3.7 We will look at each response carefully and with an open mind. We will give reasons for our decisions and will give an account of how the views of those concerned helped shape those decisions.

Annex 4

Consultation response cover sheet

- A4.1 In the interests of transparency, we will publish all consultation responses in full on our website, www.ofcom.org.uk, unless a respondent specifies that all or part of their response is confidential. We will also refer to the contents of a response when explaining our decision, without disclosing the specific information that you wish to remain confidential.
- A4.2 We have produced a cover sheet for responses (see below) and would be very grateful if you could send one with your response. This will speed up our processing of responses, and help to maintain confidentiality by allowing you to state very clearly what you don't want to be published. We will keep your completed cover sheets confidential.
- A4.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their cover sheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.
- A4.4 We strongly prefer to receive responses in the form of a Microsoft Word attachment to an email. Our website therefore includes an electronic copy of this cover sheet, which you can download from the 'Consultations' section of our website.
- A4.5 Please put any confidential parts of your response in a separate annex to your response, so that they are clearly identified. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your cover sheet only so that we don't have to edit your response.

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title: Future regulation of GSM gateways under the Wireless Telegraphy Act

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

CONFIDENTIALITY

What do you want Ofcom to keep confidential?

Nothing Name/contact details/job title

Whole response Organisation

Part of the response If there is no separate annex, which parts?

If you want part of your response, your name or your organisation to be confidential, can Ofcom still publish a reference to the contents of your response (including, for any confidential parts, a general summary that does not disclose the specific information or enable you to be identified)?

DECLARATION

I confirm that the correspondence supplied with this cover sheet is a formal consultation response. It can be published in full on Ofcom's website, unless otherwise specified on this cover sheet, and I authorise Ofcom to make use of the information in this response to meet its legal requirements. If I have sent my response by email, Ofcom can disregard any standard e-mail text about not disclosing email contents and attachments.

Ofcom seeks to publish responses on receipt. If your response is non-confidential (in whole or in part), and you would prefer us to publish your response only once the consultation has ended, please tick here.

Name

Signed (if hard copy)

Annex 5

Consultation questions

Question 1: *Do you agree with Ofcom's conclusions on the costs and benefits of gateway use?*

Question 2: *Do you agree with the analysis in this document of options for the future regulation under the WTA of the use of GSM gateways?*

Question 3: *Are there other options that Ofcom should consider?*

Question 4: *Are there other considerations that Ofcom should take into account in assessing the options?*

Annex 6

Glossary

Authorisation Directive

Directive 2002/20/EC on the authorisation of electronic communications services. One of a suite of EC directives dealing with the regulation of electronic communications services, including management of the radio spectrum.

Caller location information

Facility to indicate the geographical position of the originating caller.

CLI

Calling line identification - the facility to identify the number of the originating caller.

Communications Act

The Communications Act 2003, which transfers powers from legacy regulators to Ofcom and defines Ofcom's statutory duties.

CAT

Competition Appeal Tribunal, the body that considers appeals against most of Ofcom's decisions, including on competition complaints.

End-user

The business or other entity that uses electronic communications services for its own purposes that do not include providing electronic communications services to others. See also user and originating caller.

Erlang

A unit of measurement of traffic intensity in a telecommunications system. The erlang describes the total traffic volume of one hour, or 3600 seconds. Network designers use the erlang to understand traffic patterns within a voice network and use the figures to determine how many lines are required between a telephone system and a central office or between network locations.

Exemption Regulations

The Wireless Telegraphy (Exemption) Regulations 2003 (the Exemption Regulations) made under section 1(1) and section 3(1)(a) and (b) of the WTA. They are the principal regulations defining which radio equipment does not have to be individually licensed.

General authorisation

A legal framework ensuring rights to provide electronic communications services or networks without the need for a specific administrative act or decision (in contrast to individual licensing of each operator). Exemption from the need for a licence under the WTA constitutes a general authorisation for these purposes.

GSM

Global System for Mobile communications. International operating standard for second generation of digital cellular telephones.

GSM Gateway

A device containing one or more subscriber identity modules (SIMs) for one or more mobile networks, which enable calls from fixed telephones to mobile telephones to be routed directly into the relevant mobile network.

General Conditions

General conditions imposed by Ofcom under the Communications Act on those providing electronic communications services.

Harmful interference

Interference is harmful if it "degrades, obstructs or repeatedly interrupts" any authorised broadcast or radio transmission.

IMEI

International Mobile Equipment Identity, a unique number given to every mobile telephone.

Interference

The effect of unwanted signals upon the reception of the wanted signal in a radio system, resulting in degradation of, obstruction of, or interruption to the wanted signal.

Liberalisation

Process of removing or reducing restrictions imposed on the use of spectrum.

MNO

Mobile Network Operator.

Multi-user gateway

A GSM gateway that serves a number of end-users.

Ofcom

The Office of Communications established to replace five legacy communications regulators, including the RA. Ofcom assumed its functions on 29 December 2003.

Originating caller

The individual person who originates a call. See also end-user and user.

PBX

Private Branch Exchange

RA

Radiocommunications Agency, an executive agency of the DTI. Responsible before 29 December 2003 for managing most non-military spectrum in the UK and representing UK internationally on spectrum matters.

RIPA

Regulation of Investigatory Powers Act

2000, which governs lawful interception of communications in the UK and the provision of communications data.

RTTE Directive

Radio and Telecommunications Terminal Equipment Directive. EC Directive 1995/5/EC that governs the placing on the market of equipment, including radio equipment, and mutual recognition of its conformity.

SIM

Subscriber Identity Module. A card that fits in a mobile telephone (or gateway) to identify the subscriber to the mobile network.

Single-user gateway

A GSM gateway that serves a single end-user.

Undue interference

Interference is undue if it is harmful interference.

User

The person responsible for the purposes of the WTA for installing and operating a gateway. See also end-user and originating caller.

WTA

The Wireless Telegraphy Act 1949, the principal legislation governing the use of radio spectrum in the UK. Requires installation or use of radio equipment to be authorised. Authorisation may be by licensing or exemption.

WT Act licences

Licences issued under the Wireless Telegraphy Act 1949.

