



Commission for  
**Communications Regulation**

## Response to Consultation

### Addressing Geographic Number allocations for hybrid fixed-mobile services

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## Contents

Foreword.....	3
<b>1 Introduction.....</b>	<b>4</b>
1.1 LIST OF RESPONDENTS .....	6
<b>2 Broad Consultation Issues .....</b>	<b>7</b>
2.1 STRATEGIC PLAN VERSUS TACTICAL APPROACH.....	7
2.2 NO NEED FOR GEOGRAPHIC NUMBERS FOR MOBILE OPERATORS .....	7
2.3 CONFERRING ADVANTAGE ON THE MOBILE SECTOR .....	8
2.4 MARKET RELATED ISSUES .....	9
2.5 COMREG PRELIMINARY VIEW.....	10
<b>3 Responses to ComReg Questions .....</b>	<b>12</b>
3.1 CONSUMER TRANSPARENCY ISSUES .....	12
3.1.1 <i>Views of Respondents on risk of high charges</i> .....	13
3.1.2 <i>Commission's Position on risk of high charges</i> .....	13
3.1.3 <i>Views of Respondents on using fixed-line charges</i> .....	14
3.1.4 <i>Commission's Position on using fixed-line charges</i> .....	14
3.1.5 <i>Views of Respondents on need to restrict termination charges</i> .....	15
3.1.6 <i>Commission's Position on need to restrict termination charges</i> .....	15
3.1.7 <i>Views of Respondents on using a market-based approach</i> .....	16
3.1.8 <i>Commission's Position on using a market-based approach</i> .....	16
3.2 GEOGRAPHIC LOCATION INFORMATION: .....	16
3.2.1 <i>Views of Respondents on restriction to the designated MNA</i> .....	17
3.2.2 <i>Commission's Position on restriction to the designated MNA</i> .....	18
3.2.3 <i>Views of Respondents on how MNOs control their home-zonal areas</i> .....	19
3.2.4 <i>Commission's Position on how MNOs control their home-zonal areas</i> .....	19
3.3 CALLING LINE IDENTIFICATION (CLI) .....	19
3.3.1 <i>Views of Respondents regarding CLI</i> .....	20
3.3.2 <i>Commission's Position regarding CLI</i> .....	20
3.4 ALLOCATION OF GEOGRAPHIC NUMBERS.....	21
3.4.1 <i>Allocation of Geographic Numbers to non-Fixed Line Operators</i> .....	21
3.4.2 <i>Long-term availability of Geographic Numbers</i> .....	21
3.4.3 <i>Views of Respondents on allocating geographic numbers</i> .....	21
3.4.4 <i>Commission's Position on allocating geographic numbers</i> .....	22
3.4.5 <i>Views of Respondents on fixed operators hosting HZ numbers</i> .....	23
3.4.6 <i>Commission's Position on fixed operators hosting home-zonal numbers</i> .	23
3.5 NUMBER PORTABILITY .....	24
3.5.1 <i>Implementation of Number Portability</i> .....	24
3.5.2 <i>Beneficial Impact on Location Portability</i> .....	25
3.5.3 <i>Views of Respondents on GNP for MNOs</i> .....	25
3.5.4 <i>Commission's Position on GNP for MNOs</i> .....	25
3.5.5 <i>Views of Respondents on GNP benefit for location portability</i> .....	26
3.5.6 <i>Commission's Position on GNP benefit for location portability</i> .....	26
3.6 TECHNOLOGY NEUTRALITY AND PROMOTING COMPETITION.....	27
3.7 EMERGING SERVICES.....	27
3.7.1 <i>Views of Respondents on technology neutrality etc.</i> .....	27
3.7.2 <i>Commission's Position on technology neutrality</i> .....	28
3.7.3 <i>Views of Respondents on amendments to Conventions</i> .....	29
3.7.4 <i>Commission's Position on amendments to Conventions</i> .....	29
3.7.5 <i>Views of Respondents on other matters</i> .....	30
3.7.6 <i>Commission's Position on other matters</i> .....	30
<b>4 RIA Assessment .....</b>	<b>31</b>
4.1 PROPOSAL .....	31

Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services	
4.2	VIEWS OF RESPONDENTS ..... 31
4.3	COMMISSION POSITION ON RIA-RELATED ISSUES ..... 34
4.3.1	<i>Failure to consider alternative options</i> ..... 34
4.3.2	<i>Failure to consider additional strain on numbering resources</i> ..... 34
4.3.3	<i>Failure to consider loss in value of characteristics of Geo-Numbers</i> ..... 35
4.3.4	<i>Failure to consider impact on overall communications efficiency</i> ..... 36
4.3.5	<i>Failure to consider impact of a Receiving Party Pays (RPP) Model</i> ..... 36
4.3.6	<i>Failure to consider impact on existing GNP and GLUMP processes</i> ..... 36
5	Next Steps ..... 38
Appendix A – Legal Basis ..... 39	
A1.1	POLICY OBJECTIVES ..... 39
A1.2	NUMBER ALLOCATION ..... 40
A1.3	GEOGRAPHIC NUMBER ..... 40
A1.4	NUMBER PORTABILITY ..... 40
A1.5	PUBLIC CONSULTATIONS ..... 41
A1.6	TECHNOLOGY NEUTRALITY AND PROMOTING COMPETITION ..... 41
Appendix B – Revision of National Numbering Conventions ..... 42	
1.1	ANNEX 6: DESIGNATIONS FOR NUMBERS ..... 42
1.2	SECTION 11: CONDITIONS OF USE FOR NUMBERS ..... 42
Appendix C – List of Directions and Decisions ..... 44	
Appendix D – Regulatory Impact Assessment ..... 45	
1.1	COST, BENEFITS AND OTHER IMPACTS OF POLICY OPTIONS ..... 45
Appendix E – Abbreviations ..... 47	

## Foreword

ComReg is aware that its objectives as set by the Communications Regulation Act 2002 are important to consumers. The recent consultation on hybrid fixed-mobile telephone services, which is reported on in this document, goes to the core of two of those objectives, namely the promotion of competition and promotion of the interests of end-users in the Community. The consultation deals with elements of fixed-mobile substitution (FMS) and fixed-mobile convergence (FMC), based on a mobile product with localised features, called “home-zone” in the consultation document (and home-zonal service henceforth). This product has the potential to increase marketplace competition while also opening new opportunities for more flexible services, and in many cases cheaper services, to be provided to end-users.

The key decisions in this document of opening the geographic number base to mobile operators in certain circumstances is an innovation for Ireland, which recognises that communications convergence is occurring in a whole range of fields. The document also recognises that this development should only be the start and that circumstances are sure to arise in the near future in which fixed-line operators will be justified in seeking allocations of mobile numbers for specific purposes.

In making the decisions in this document that it has, ComReg is conscious that the new competitive pressures will not be universally welcomed, particularly by some smaller operators. ComReg is convinced however, that those organisations are among the most agile and innovative and that they will find their own solutions to continue and reinforce their positions in the market. This is an exciting time in communications, and innovative organisations have unprecedented opportunities to find new ways in which to exploit the latest market developments. ComReg is confident that with all such advances, it is the customer who will be the biggest winner.

**Mike Byrne**  
**Chairperson**

## 1 Introduction

ComReg received enquiries about the possibility of introducing new ‘hybrid fixed-mobile’ telephone services, based around a “home-zone” or “local-zone”, to the Irish market. Under these home-zonal services, a phone that is in or within range of a particular location operates as a fixed-line, but when the same phone is taken beyond that location, it operates as a mobile. These services are broadly similar to services that have already started to appear in other countries and their introduction here could increase overall competition, thereby benefiting users. These home-zonal services could also bring additional location flexibility for end-users as well as the convenience of combined fixed-mobile telecoms usage based on a common handset. The promotion of competition and promotion of users’ interests are key objectives for ComReg<sup>1</sup>

The introduction of home-zonal services would involve changes to the numbering framework that must be considered with care. Specifically, the allocation and porting of geographic numbers, which up to now have been restricted to fixed-line and [VoIP](#)<sup>2</sup> operators would need to be extended to include mobile operators, albeit with certain safeguards related to geographic coverage and pricing. Each geographic number would be additional to a user’s mobile number (i.e. each handset would have two associated telephone numbers), so tight management to avoid number wastage would be necessary.

ComReg opened a public consultation on these home-zonal products on 4 August 2006, with a closing date of 15 September, which – upon request by an affected respondent – was extended to 29 September.

The home-zonal service discussed in the consultation (see ComReg 06/33) would enable persons calling a mobile home-zonal user’s geographic number to benefit from fixed-line rates, by virtue of the geographic number that is called. Other attractions of the service could include lower rates for outgoing calls made from within the home-zonal area or perhaps even free calls within that area where multiple users are located there (e.g. within an academic or corporate campus).

Under this service, a call to the home-zonal geographic number arriving at the home-zonal operator’s interconnection point would be converted by the operator to a mobile call and delivered to the customer’s mobile handset, provided the customer is currently within his home-zonal area<sup>3</sup>. If the customer moves outside that area, the call would typically be delivered to voicemail or (for additional payment by the called party), would be forwarded to the customer’s present location. An attractive feature of this set-up is that within the home-zonal area, a customer’s mobile handset can be used as a universal ‘untethered’ tool for (a) receiving normal mobile calls, (b) making outgoing mobile calls at special home-zonal rates or (c) receiving fixed-line calls.

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<sup>1</sup> See sub-section 12(1) of the Communications Regulation Act, 2002.

<sup>2</sup> VoIP operators are considered to be operators offering connection at a fixed location, notwithstanding their opportunities to support nomadicity.

<sup>3</sup> Regardless of whether a subscriber is inside or outside of their home-zone area it is expected that calls to their mobile number will continue to be delivered as normal mobile calls.

Users of the home-zone service could manage their mobile calls pattern to take advantage of the service by monitoring an icon or label that notifies their presence in the home-zonal area. Other users are not misled about the source of home-zonal calls as the user's mobile Calling Line Identification (CLI)<sup>4</sup> is presented.

In document 06/33, ComReg noted the importance of ensuring that the benefits of home-zonal service are not obtained at the cost of a reduction in the levels of protection currently enjoyed by consumers. A key issue is consumer confidence in the pricing and general location information<sup>5</sup> conveyed in a geographic number and ComReg indicated strongly that it would be reluctant to facilitate any changes to the numbering regime that might undermine that confidence. The primary risk identified by ComReg was that of a steady migration of home-zonal retail charges upwards towards regular mobile levels (i.e. consequent upon rising home-zonal mobile termination rates), especially as the recipient mobile operator is unlikely to have to deal directly with the customer calling the home-zonal geographic number.

However, damage to the trust placed by users in the reliability of the location information inherent in geographic numbers must also be avoided. Location knowledge is used by consumers to select 'local' service providers, whose traceability and permanence is often assumed precisely because of the geographic number type. ComReg suggested the solution might be the obligatory registration of a physical customer address within the relevant minimum numbering area (MNA) for each home-zonal geographic number allocated and also that location-based technology should be used to ensure the geographic number is used only within the home-zonal area. ComReg proposed a relaxation for mobile operators of the rule obliging use strictly within the MNA by permitting the home-zonal area to overlap into directly adjacent MNAs, in order to facilitate home-zonal customers living within MNA border areas. ComReg suggested this would have no practical harmful effects (due to the obligation to have an address in the appropriate MNA) and would be unlikely to be abused by mobile operators, whose financial incentive would be to keep home-zonal areas as small as possible.

ComReg noted in document 06/33 that Geographic Number Portability (GNP) would be an essential cornerstone of a home-zonal service, as a high proportion of potential customers might wish to port their existing geographic numbers to mobile suppliers. GNP related to home-zonal services would therefore be an important force for competition. The Universal Service Directive provides support for porting between fixed<sup>6</sup> and mobile networks, although it does not actually mandate it. To operate GNP at a practical level in Ireland, mobile operators would need to be given access to the GNP database. ComReg also noted an additional benefit of such fixed/mobile

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<sup>4</sup> The mobile operator's interest is to have the mobile number displayed in CLI so that return calls reflect mobile rates. ComReg proposed in document 06/33 that certain defined exceptions could be permitted, where the CLI recipient will not be disadvantaged by it.

<sup>5</sup> Geographic numbers are associated with specific areas, in principle. Call-forwarding can blur this association in some cases, but as there is a service charge for forwarding, its use is limited and does not affect the vast majority of calls.

<sup>6</sup> More specifically, between "networks providing services at a fixed location".

Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services portability for users moving location within an MNA but to a new Switch area<sup>7</sup>, as they would no longer need to surrender their geographic numbers.

ComReg 06/33 described the above issues in some detail and set out a series of questions for interested parties, in order to seek views which would guide its decisions on these matters. A total of nine responses was received, expressing views on the issues raised by ComReg that varied significantly according to market sector and positioning but which were in all cases well considered. ComReg has taken those views into account in this response to consultation document and it thanks the respondents for the valuable insights they provide. ComReg's primary decisions are to open geographic number allocation and GNP to mobile operators for home-zonal purposes, subject to adequate justification. ComReg will also be open to allocation of mobile numbers and to permitting Mobile Number Portability (MNP) to fixed-line operators, subject to adequate justification. The legal context of the decisions made in this document is contained in Appendix A, below. The following table lists the respondents to ComReg 06/33.

## 1.1 LIST OF RESPONDENTS

Respondent	Category
ALTO	Alternative operators' association
BT Ireland	Fixed-line Operator
<i>eircom</i> Ltd.	Fixed-line Operator
Gaelic Telecom	Fixed-line Operator
imag!ne	Fixed-line Operator
Magnet Networks Ltd.	Fixed-line Operator
Meteor	Mobile Operator
O <sub>2</sub>	Mobile Operator
Vodafone	Mobile Operator

<sup>7</sup> Such relocation currently results in a de-facto forced number change due to practical *eircom* restrictions on moving numbers. For technical reasons, other operators dependent on use of *eircom* copper pairs, are similarly affected.

## **2 Broad Consultation Issues**

In responses to this consultation, a number of issues were raised that were not specifically catered for within ComReg's questions and which ComReg feels it can best address under the umbrella of the broad themes that encompass them. Some other issues that were covered by questions resulted in such wide-ranging responses that it is more appropriate to now address them in a more comprehensive way than inclusion in the scope of any single question would allow. Accordingly, both categories of responses are treated as comprehensively as possible in this chapter, while the more direct responses to ComReg's questions are treated in the subsequent chapters. The interlinked nature of many of the former broad issues makes this the most favourable approach with the reader in mind.

### **2.1 Strategic plan versus tactical approach**

Two respondents were concerned that ComReg's approach to home-zonal services represents an isolated tactical move as opposed to the wider strategic approach they felt was necessary. Others, as discussed more fully below, were concerned that the initiative represents an intervention on behalf of one sector of industry.

ComReg has taken this home-zonal initiative in response to a specific expression of interest in providing such a service. ComReg's proposals meet a number of ComReg's objectives under the Communications Regulation Act, 2002 as home-zonal service is an innovation that could benefit competition and consumers. Concerning the wider strategic balance, ComReg has identified at various points in this document that it is open to equivalent services from fixed-line operators and to the opening to them of mobile numbers, given the appropriate circumstances. Insofar as strategic issues are at stake, ComReg considers these relate to convergence of one form or another and the steps that ComReg is taking (or refers to herein) in respect of widening the possible uses of specific number types are in support of convergence.

### **2.2 No Need for Geographic Numbers for mobile operators**

Objections to allocation/porting of geographic numbers to mobile operators were received principally from fixed-line operators, with mobile operators basically in favour. The former view was that it created an imbalance in approach by ComReg (see discussion in 2.3 below) and anyway there was no need for it as some home-zonal services exist in Europe using mobile numbers. One respondent pointed to ComReg's statement that "the primary benefit of the home-zonal service is to allow subscribers, while in their home zone to avail of reduced call rates", noting again that it is not necessary to use Geographic numbers for this facility which could be provided using the existing mobile numbers. Furthermore, one mobile operator also noted that "home-zone services could be introduced without any changes to the numbering regime as there is no direct link between the establishment of home-zone retail origination tariffs and the association of geographic numbers with mobile subscriptions"

A countervailing view was that

- "the considerations are similar to those that arose in consultation ComReg 04/72 on the provision of Geographic services by VoIP networks – if the service matches the criteria and characteristics established for the service then it is irrelevant what underlying technology is used to deliver it."; and



Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services

- “If an [ECS](#) provider wishes to provide a Geographic service conforming with the accepted standards for this service, then they should be allocated Geographic numbers, regardless of their type of network.”

ComReg has taken account of the inputs received on this matter, as well as the related comments specifically oriented towards the issue of technology neutrality and has concluded that the real issue is whether there is a legitimate reason to prevent mobile operators having access to geographic numbers, going forward. ComReg agrees with the response which stated that “The geographic association is the key defining characteristic of Geographic numbers”, though ComReg also considers that confidence in their perception of (low) price is at least as important to many end-users of geographic numbers. Consequently, provided those elements are guaranteed to be preserved, the consumer should be fully protected and ComReg concludes that under such conditions there would be no reason to withhold geographic numbers from mobile operators.

### 2.3 Conferring advantage on the mobile sector

A number of fixed-line respondents took the view that this consultation represented an imbalanced approach to regulating the industry, suggesting that it opens new opportunities to mobile operators in the fixed-line domain, without any apparent *quid pro quo* for fixed-line operators in the mobile domain. Some of these proposed that home-zonal services could be a positive development if such a counter-opportunity was made available. Typical of these positions are the following comment extracts:

- “Some ALTO members hold the view that the homezone service will enhance competition in the fixed markets only (which is welcomed), but that competition is also required in the mobile markets.”
- “It [the ComReg proposal] prefers additional rights of access to these convergent services on the existing [MNOs](#), without due consideration for fixed line operators. It could lead to a potential distortion in the market structure. For the wording to be agreed we first need to prioritise who can offer such services and how ComReg envisages an equitable market allowing all market participants equal ability to participate.”
- “Fundamental questions of ... the lack of equivalent access [by fixed operators to mobile networks] have not been addressed by ComReg in the questions posed.” And
- “Consistent with technology neutrality, ComReg should also foresee the allocation and porting of mobile numbers for fixed operators or on hybrid networks involving VoIP, [UMA](#), [Wi-Fi](#), [WiMAX](#) or other technologies.”

ComReg understands the concerns of fixed-line operators at the prospect of increased competition in their domain. However, in contrast to the underlying message of some responses, the issue is more one of ensuring ComReg does not act as an impediment to such competition, rather than of ComReg driving it. The action requested of ComReg is to permit the use of geographic numbers by mobile operators, and ComReg concludes it has a duty to do this provided the appropriate safeguards can be put in place (see Section 2.2 above). However, ComReg also sees no significant barrier to the corresponding use of mobile numbers by fixed-line operators for services that are genuinely of a mobile nature and which meet

Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services equivalent safeguards for the consumer<sup>8</sup>. It is conceivable, for example, that carefully structured Wi-Fi plus WiMAX services might meet the necessary criteria. It is therefore up to the fixed-line operators themselves to set the scene for the *quid-pro-quo* that they seek.

Furthermore, one fixed-line operator suggested that ‘ComReg’s proposals’ might be more acceptable if they were structured in a way that permits fixed-line operators to provide the relevant geographic number, to be used in conjunction with a call forwarding service to mobile operators. One mobile operator also supported the idea that such a service could be acceptable, with the following words “It is technically possible that fixed operators might facilitate arrangements for mobile termination of calls to geographic numbers. While a number of routing solutions are possible, in all cases the geographic number would reside on the fixed network and inbound calls would be onward routed to the mobile operators for termination on the end user’s mobile. Fixed termination rates would apply between interconnected operators and the fixed network hosting the geographic numbers.” This suggestion raises issues as to whether the current National Numbering Conventions would be breached, as discussed under Q9 below, but ComReg is open to consideration of any proposals from fixed and/or mobile operators for such service ideas, so long as these do not lead to deterioration of the trust by consumers in their fixed or mobile numbers.

**Decision No. 1. ComReg will consider justified applications for mobile numbers by fixed-line operators in the future, provided such applications indicate that a worthwhile<sup>9</sup> advantage will pass to consumers as a direct result of the issuing of mobile numbers to fixed-line operators.**

## 2.4 Market Related Issues

Mobile operators (excluding Hutchison 3G Ireland) currently have an obligation to charge cost-oriented prices to other operators who wish to terminate calls on their networks. These mobile termination rates ([MTRs](#)) are substantially higher than the equivalent charges raised by a fixed-line operator for terminating a call. If a mobile operator was to charge its MTR or any rate that significantly exceeds fixed termination rates for terminating a geographic number on its mobile network then, either the originating operator would incur a loss, or the principle of retail tariff transparency would be undermined. While the issue of what is the appropriate wholesale price for terminating a call to a geographic number on a mobile network is of importance, it is outside the scope of this consultation. ComReg stated in ComReg 06/33 that it considered this issue could be addressed in the context of obligations imposed as a result of a finding of significant market power ([SMP](#)) in the relevant wholesale market.

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<sup>8</sup> No such requests have been made to ComReg to date. However, a very preliminary view of ComReg’s concerns in this context, where the starting point is higher mobile origination charges, is that there must be transparency of pricing and transparency of the real service implementation being supplied. Furthermore, protections could be needed against revenue sharing with the called party – which might be facilitated by high mobile-like origination rates - that would place the service within the definition of a premium rate service.

<sup>9</sup> “Worthwhile” in this context means after taking account of the extra complexity this introduces to numbering management and any dilution of certainty for consumers in the usage of the number.

Respondents to ComReg 06/33 nevertheless offered useful comments which will be passed to the ComReg market analysis team for their consideration.

One respondent, while noting that high wholesale termination charges for home-zonal services would be passed through into higher retail calling charges by originating providers, also pointed out the serious risk that *“calls to these numbers could be excluded from retail charge bundles by originating providers. The attractiveness of calling these numbers would be diminished, undermining the rationale for geographic numbers in the first place.”*

Another suggested that *“In the context of a bundled mobile offering ... attempts to inappropriately constrain pricing on call termination can only lead to a reduction in the eventual choice and value available to consumers. Home-zone products are being rolled out successfully in other European countries without such regulatory intervention.”*

Two respondents, referring to the need to treat mobile operators in the same way as fixed-line [OAOs](#) in order to avoid competitive distortion, offered the suggestion that *“ComReg ... should implement a [RIO](#) to regulate such termination charges to reasonable levels.”*

One respondent addressed the market issue directly, by saying *“ComReg should review the analysis of each relevant market to determine which of these the product falls within. However, regardless of this it is possible/probable that ComReg would find that any provider would hold SMP in that market. As a consequence, and consistent with existing decisions, obligations of cost orientation and non-discrimination are likely to apply. In this event, the tariff for termination of calls could not be significantly different than existing tariffs for termination of calls on mobile networks.”* The respondent also stated *“Price control based on market analysis must be applied consistently and exceptions not be carved out on the basis of different numbers for a particular service.”*

ComReg’s Market analysis team will review these representative comments as well as all others received. However, it has been clear from the outset that existing obligations of cost orientation and non-discrimination are not affected by this consultation. ComReg’s insistence in ComReg 06/33 that fixed-line pricing for geographic numbers must not be compromised by new home-zonal services was balanced by recognition that the mobile pricing structure for the home-zonal service must involve some formula that doesn’t violate those obligations. ComReg referred in document 06/33 to the possibility of a home-zonal subscription charge covering the balance of costs, though the actual solution adopted is up to the home-zonal service provider.

## **2.5 ComReg Preliminary View**

In addition to the above topic-related subjects, some respondents took issue with ComReg’s preliminary view “that on balance the benefits of ‘home-zonal’ services easily outweigh the disadvantages” in the absence of quantitative analytical evidence.

## Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services

ComReg is the designated manager of the national numbering resource and would therefore be expected to have formulated an initial view on the use of numbers, which should be made available to the consultation. That does not imply in any way that ComReg's position is fixed or the initial opinion prejudices the consultation outcome. Section 5.2 of ComReg 06/33 states: "*ComReg provisionally considers that on balance the benefits of 'home-zone' services easily outweigh the disadvantages and is in favour of allocating geographic numbers to mobile operators. However, it is seeking industry and consumer viewpoints before coming to any definitive conclusions on the matter.*"

### 3 Responses to ComReg Questions

#### 3.1 Consumer Transparency Issues

Whilst the facilitating of new services brings benefits for competition, ComReg needs to balance these benefits against the risks and disadvantages that might arise from the extension of the allocation and porting of geographic numbers to include mobile operators. Foremost is the need to ensure that consumers are afforded at least the same level of protection as they currently enjoy. A key issue in this regard is consumer confidence in the information conveyed in a geographic number, including that of fixed-line-level price indication, and ComReg stated in document 06/33 that it would be reluctant to facilitate any changes to the numbering regime that might diminish that confidence in any way. Critically, home-zonal services must not become a mechanism to facilitate the introduction of mobile-level prices for calls to geographic numbers, whether overtly or (especially) in any non-transparent fashion. The allocation of geographic numbers for use with home-zonal services must therefore be dependent on a convincing framework being established that assured such protection. The perceived risk was that high mobile termination rates for calls to home-zonal geographic numbers would lead (at least in due course) to corresponding rises in some or all geographic retail rates.

ComReg opened consultation on these matters by seeking views on whether there really was a risk of home-zonal termination charges for inbound calls rising towards mobile levels, with knock-on consequences for retail charges to the calling consumer (see Q. 1 below). ComReg followed up on this question by seeking views on whether typical fixed line charges would be appropriate also for mobile home-zonal services and secondly, whether *eircom*'s rates might form a benchmark for this (see Q. 2 below). ComReg concluded that line of questions by asking whether respondents actually agreed that specific measures were needed to constrain such termination charges to acceptable levels (see Q. 3 below). In that respect, ComReg suggested that any extra cost beyond fixed-line termination costs might be recovered from the home-zonal service end-user.

ComReg identified two possible mechanisms for safeguarding the consumer; it could either use its numbering powers or it could use market analysis and market remedies steps, with the latter being preferred. The views of respondents on this specific choice are summarised after Q. 4 below, while a more in-depth discussion of the market-related issues is included in Section 2.4 above. ComReg indicated that any viewpoints on market-related matters received in this consultation would be passed to the market review team.

**Q. 1. Do you agree with ComReg's assessment that there is a risk of inappropriately high termination charges developing in a home-zone service context, which could have detrimental knock-on effects on retail charges for the (calling) consumer? Please comment.**

*3.1.1 Views of Respondents on risk of high charges*

While the mobile operators disagreed with ComReg's assessment, all other respondents considered there was a real risk of inappropriately high charges developing, which would have negative consequences for consumers.

The arguments against such a scenario developing were that the Irish mobile market is highly competitive, fixed-line operators wield considerable interconnection power and it would be self-defeating for mobile operators to obtain geographic numbers, whose characteristics are so valued, and then proceed to devalue them. One mobile operator noted the risk to mobile operators that calls to home-zonal geographic numbers could be excluded from retail charge bundles by originating providers if excessive rates were applied.

Against these views, other respondents felt that a clear risk existed and that this should be avoided. In some cases, the risk was considered to arise from enforcement of the MNOs non-discrimination obligation (i.e. not treating mobile home-zonal call termination rates differently from those for regular mobile calls). One such respondent suggested that this extra cost (c.f. fixed-line rates) in turn would need to be passed by call originators in one of two ways:

- a. If the calls are separately identifiable, then a higher retail charge might apply for the individual calls. This would effectively change the current simple tariff indication that exists for calls to Geographic numbers.
- b. If the calls are not separately identifiable, then it would be necessary to recover the additional cost over all Geographic calls, thereby increasing tariffs.

*3.1.2 Commission's Position on risk of high charges*

ComReg acknowledges the mobile operators confidence that an unrestricted allocation process for geographic numbers would work satisfactorily with them but notes that that confidence is not shared by others. ComReg considers that a very high confidence barrier must be passed before risks are taken with the high degrees of public trust in geographic telephone numbers and the consultation responses do not provide the necessary assurances. Accordingly, formal market remedies or equally robust market solutions are needed to deliver a solution that offers a sufficient degree of confidence that termination rates (and hence retail rates) will remain reasonable. ComReg's views on the issue of funding extra home-zonal costs were discussed in ComReg 06/33 and are repeated in 2.4 above. Alternative solutions put forward in this consultation which would retain the home-zonal geographic numbers within the control of fixed-line operators might offer another solution.

**Q. 2. Do you agree that, in principle, the termination charges used by fixed network operators are also appropriate for mobile operators providing home-zone services and that *eircom*'s figures may be used as the formal reference (benchmark) for this purpose? Please comment on your reasons for agreeing or disagreeing.**

### 3.1.3 Views of Respondents on using fixed-line charges

Responses were split on this question and indeed the differences again existed within both fixed-line and mobile sectors. Some of the negative responses, as for question 1, related to a belief that their non-discrimination obligations would prevent mobile operators from applying fixed-line tariff levels. One respondent suggested that if mobile operators were permitted to charge fixed-line rates this could in practice result in cost recovery through higher termination prices charged for fixed-to-mobile and mobile-to-mobile off-net calls.

A fixed-line respondent noted that a variety of fixed line tariff structures exist, while a mobile operator proposed that fixed-line rates should be used only as an informal benchmark in the event of disputes.

Using *eircom* as the benchmark for fixed-line rates was considered to be a suitable approach by some respondents but was strongly resisted by others, although no specific alternative was put forward. One respondent stated that any such benchmarking of mobile operators against *eircom* would not be appropriate so long as fixed-line OAOs do not undergo the same benchmarking.

### 3.1.4 Commission's Position on using fixed-line charges

The consultation responses generally support ComReg's position regarding the application of fixed-line tariffs, if the issue of mobile operators' non-discrimination obligations is extracted from the discussion. As there is no disagreement from any side that those obligations must continue to be met, ComReg believes that the outstanding issue is therefore one of deciding how to define "fixed-line tariffs", so that unfair deviations can be identified. *Note: A brief re-affirmation of the non-discrimination obligations is included at 2.4 above.*

ComReg's proposal to use *eircom*'s rates as the relevant yardstick seems to be the only viable option, in view of the absence of alternative suggestions for measurement from the consultation responses. This has the merit that *eircom*'s rates, being regulated, are available for comparison purposes. ComReg disagrees with the view proposed by one mobile operator that using the incumbent fixed operator's termination charges for mobile operators providing service over an entirely different network with entirely different cost structures is inappropriate, as the issue is one of comparison with an existing fixed-line pricing structure, not one of network differences. As ComReg states in document 06/33, the issue of geographic number allocation (and thereafter price comparison) should only arise in a context where the mobile operator is able to support (in a non-discriminatory manner) fixed-line pricing levels for home-zonal service termination.



**Q. 3. If you agree with this assessment, do you also agree that specific requirements are needed to restrict such termination charges to (those) acceptable levels? Please comment.**

*3.1.5 Views of Respondents on need to restrict termination charges*

While the same considerations about non-discrimination as in questions 1 and 2 were repeated for this question, the respondents generally saw the need for restraints on excessive termination charges for home-zonal calls to geographic numbers. One such response demonstrated the broad concerns well by explaining that *“If ... higher termination charges than for fixed services were charged, serious technical issues for real-time charging services (e.g. calling card services, call barring services and payphones) would arise. It would place unacceptable demands on real-time services dependent on pricing information, which would be required to carry out look-ups of number portability databases in real-time. In particular, the calling-card business is highly competitive and price margins would not sustain the additional look-up cost. There would be significant costs and time required to develop solutions for real-time services. While similar services currently exist in mobile (e.g. pre-paid pay-as-you-go mobile), average per-minute call charges are significantly higher than fixed, justifying the investment in real-time charging systems.”*

Two fixed-line operators considered that implementation of a RIO was a suitable mechanism for regulation of charges, without suggesting further details of this. Another noted that ComReg is given advance notice of any change/new rate during contract negotiations and suggested adaptation of that process to give ComReg the power to reject a proposed termination charge if it was not at an acceptable level. A mobile operator similarly noted that *“Parties requiring interconnect with MNOs to terminate geographic numbers are entitled to refer disputes to ComReg in the event of a failure to agree rates.”*

*3.1.6 Commission’s Position on need to restrict termination charges*

ComReg notes that if geographic numbers are to be allocated and ported to mobile operators as proposed, most respondents would be concerned that suitable measures should be implemented to provide protection against inappropriate termination charges (i.e. charges out of line with fixed-line rates). ComReg agrees with that position and appreciates the suggestions put forward by the respondents. Accordingly, geographic numbers will only be allocated/ported if a suitable protective framework can be devised (i.e. one that does not conflict with existing regulatory positions). ComReg’s Market teams will consider the suggestions submitted, along with any other options in arriving at its final position on this.



**Q. 4. Do you have views on the market-based approach being taken by ComReg to protect against excessive termination charges, (i.e. market-based obligations and remedies, rather than use of numbering powers)? (Please refer also to Section 9 before answering and please add your comments). If you do not agree, please describe the alternative(s) you prefer.**

*3.1.7 Views of Respondents on using a market-based approach*

The consultation responses almost all supported a market-based approach to addressing the termination charges issue, with some uncertainties but no dissenting opinions.

One respondent suggested that if the fixed-line operators were permitted to offer a call forwarding service to the mobile operators' home-zonal service this would resolve the issue.

Another respondent noted that it is probable that ComReg would find that any provider would hold SMP in that market and re-iterated that consequently obligations of cost orientation and non-discrimination would apply. In that event (and especially as home-zonal location functions could only bring some additional costs), the tariff for termination of calls could not be lower or significantly different than existing tariffs for normal termination of calls on mobile networks.

*3.1.8 Commission's Position on using a market-based approach*

ComReg concurs with the general view that using Market Analysis and corresponding remedies is the best way forward and will therefore follow this approach (see 2.4 above). If necessary, interim steps may be investigated, should a faster outcome be necessary than the full Market Analysis route can provide.

The issue of retail charge to callers to home-zonal geographic numbers in the context of cost orientation and non-discrimination is discussed in 3.1 above.

## **3.2 Geographic Location Information:**

In addition to call price indication, many telephone callers rely on the dialled geographic number to indicate the geographic location of the called party. Geographic numbers convey a sense of permanence and traceability with perceived possibilities for redress in respect of the number-holder. The same level of comfort is not generally accepted from mobile numbers and this is in part because a caller does not assume that the called party is and/or will continue to be traceable by way of a billing address that can be easily accessed.

In order to preserve the existing location indication regime, ComReg proposed in ComReg 06/33 that each home-zonal recipient of a geographic number should be required to have a registered address within the Minimum Numbering Area (MNA) from which the relevant number is issued. This obligation would align with the requirement for fixed-line services to terminate in their relevant MNAs.

ComReg also noted in document 06/33 that, unlike fixed-line services, mobile services are currently unable to locate a user's position with high precision and this

Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services could cause difficulties in providing the home-zonal service to users living alongside MNA boundaries. To deal with this, ComReg proposed allowing home-zonal areas to overlap into adjacent MNAs to the true home-zonal MNA. This would only apply to actual use of the home-zonal service as the customer would still be expected to hold a registered address in the correct MNA.

**Q. 5. Do you agree with ComReg that:**

- (a) to ensure proper management of the home-zone/geographic number relationship, including support for number portability processes, all customers of home-zone services should be registered in respect of name and address, which must lie within the MNA to which the geographic number applies?**
- (b) the boundaries of home-zones (within which calls to the geographic numbers must terminate) could be permitted (from a regulatory perspective) to extend up to the boundaries of the registered home MNA plus any adjacent MNAs – but not beyond?**

*3.2.1 Views of Respondents on restriction to the designated MNA*

There was broad agreement with ComReg’s position that each home-zonal user should be required to register an address within the MNA from which their geographic number is issued. However, respondents were evenly split over the question of permitting home-zonal usage within adjacent MNA areas in addition to the home-zonal one.

One respondent indicated that a relevant precedent for the association of geographic numbers with physical addresses already exists, as fixed wireless access ([FWA](#)) operators, despite their dependence on wireless technology, are obliged to respect the geographic boundaries of MNAs. The same response emphasised that it is essential that existing MNA boundaries of geographic numbers be respected (i.e. MNOs must restrict access to the [Cell-ID](#) of the registered address) so that – following number porting - a fixed network operator is able to deliver service on the same number at a future date using physical infrastructure.

Those supporting extension of usage into adjacent MNAs argued *inter alia* that “it would maximize the benefits to the end user, which is the bedrock of any competitive market” and “We believe that maximum flexibility should be given to MNOs in dimensioning the size of their home-zone.”

Typical of the responses from those opposed to extension into adjacent MNAs was the following response: “*The consultation acceptance of allowing geographic numbers to be delivered into adjacent MNA’s departs from previously accepted rules (the National Numbering Conventions) and the consequences should be considered. In a technological neutral approach, can fixed operators have similar flexibility as is being offered to the home zone service?*”

3.2.2 *Commission's Position on restriction to the designated MNA*

As there is general acceptance that a registered address in the relevant MNA should be provided by anyone seeking a geographic number, ComReg will follow that approach in respect of home-zonal services.

ComReg takes note of the significant degree of opposition to formally permitting use of home-zonal service in MNAs adjacent to the home-zonal MNA, while also noting that there was a fair degree of support for this suggestion. The proposal was an attempt to facilitate operators and end-users in the very real situations where location technology is incapable of distinguishing in which of two MNAs a user is currently located. Even envisaged improvements in location technology may not eliminate such problems.

ComReg has considered this situation, taking into account also the remarks made by some respondents about the need to maintain a technologically neutral approach. ComReg's conclusion is that the key factor at issue, and the point of comparability between different network types (i.e. when implementing technological neutrality) is simply the registered address of the home-zonal user. That address is the formal termination point for mobile home-zonal calls, in the same way that the registered address of a VoIP user of a geographic number is the formal termination point for a VoIP call to that number.

In further observance of the principle of technological neutrality, ComReg notes that mobile roaming over the home-zonal MNA border and the use of fixed-line [DECT](#) phones outside the MNA by border residents are comparable in principle (even if not in scale, for reasons which are technology dependent in each case). Furthermore, nomadic operation by VoIP users of geographic numbers bears a certain (albeit limited) similarity to such mobile roaming and ComReg has already accepted short term nomadic use outside the MNA in that case (see 4.1.3 of ComReg 04/103).

ComReg has therefore decided to limit its rules<sup>10</sup> on geographic usage to requiring users to have a registered address within the MNA concerned, while accepting that available location technologies are often incapable of guaranteeing that usage outside the MNA boundary has not occurred. This means that no formal acceptance will be accorded to mobile use within MNAs adjacent to the home MNA, as was proposed in ComReg 06/33 but a realistic view will be taken of networks capabilities to ensure usage does not stray across the MNA boundary. This provides fair comparability in the treatment of fixed-line, mobile and IP-based technologies and involves no reference in the rules to any specific technology. As the geographic number is assigned to the registered address rather than the user's location at any moment, the option of porting the geographic number is unaffected.

*Note: ComReg is satisfied that in practice mobile operators will limit cross-MNA-border usage as far as they are able as, in the words of one such mobile operator, "the commercial imperative for MNOs is to accurately control [their] home-zone sizes"; in other words, larger sizes would unnecessarily risk cannibalising their normal mobile services.*

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<sup>10</sup> This slightly revised approach to the rules will be included in the National Numbering Conventions in due course.

**Decision No. 2. A condition of use for geographic numbers, in the context of providing or receiving a home-zonal service, will be that the number-holder must have his or her registered address within the MNA to which the number block is assigned. In addition, use of the geographic number shall be contained within that MNA, to the extent that the network's location capabilities will support.**

**Q. 6. How do you suggest that ComReg can – in the least intrusive manner – reliably ensure that mobile operators granted geographic numbers are capable of controlling their user's home-zone positioning and that they subsequently do so in practice?**

### *3.2.3 Views of Respondents on how MNOs control their home-zonal areas*

Two fixed-line respondents offered a solution that each MNO could map and clearly identify its home-zonal areas, making these known to each household/business concerned, with policing by an independent body (probably ComReg). A third suggested a similar approach but with an obligation on MNOs to measure the consumer's location to an accuracy of 100 m.

One mobile operator felt that there was not a need for special compliance measures while a second implicitly concurred with this by pointing out the commercial incentive for mobile operators to restrict home-zonal size as far as possible. Another suggested it was up to each candidate home-zonal provider to propose its own solution and to demonstrate to ComReg how its compliance can be assured.

### *3.2.4 Commission's Position on how MNOs control their home-zonal areas*

ComReg is minded to accept the views of those mobile operators who point out the strong financial incentive for them to minimise home-zonal sizes, thereby also minimising outside-MNA presence of home-zonal users. Consequently, and also for reasons discussed more fully in 3.2.2 above, ComReg has now concluded that applying rules which target moment-by-moment home-zonal user location is unnecessary, so long as a within-MNA registered address is recorded, and could be bordering on a non-technology-neutral approach. Mobile operators can currently use Cell-ID technology and will in future have better location techniques. ComReg is satisfied they will use these responsibly to control their home-zonal services, without specific regulatory intervention.

## **3.3 Calling Line Identification (CLI)**

In addition to pricing and geographic information, telephone numbers also convey information as to identity of the calling party. [CLI](#) presentation informs the called party of the caller's identity, even before the call is accepted, provided the caller or network hasn't blocked it. In the case of geographic numbers it also informs about the geographic area from which the call is originated, which in some circumstances can be important (i.e. it may assist with affording/rejecting priority for the call compared to other tasks and it assists with more rapidly identifying callers). CLI arises as an issue in two contexts so far as home-zonal services are concerned:

## Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services

- i. Where a mobile operator providing home-zonal services is originating calls from a home-zonal customer, in all normal<sup>4</sup> circumstances the CLI transmitted to any interconnected operator should be the regular mobile number of that customer, rather than the geographic number; and
- ii. Where a fixed-line operator is forwarding geographic calls to a mobile operator to terminate, the CLI sent forward into the mobile network and seen by the customer should not change from the original fixed-line CLI (e.g. to any fixed/mobile gateway-type CLI).

**Q.7. Do you agree with ComReg's comments regarding CLI in Section 3.3 above? Do you agree with the wording used in Appendix C for this? Please comment on your reasons for agreeing or disagreeing.**

### *3.3.1 Views of Respondents regarding CLI*

Respondents were fairly evenly split as to whether geographic CLI could be used for outgoing calls, instead of mobile CLI. Furthermore, a minority felt it should be up to the client to decide which CLI to use. The main argument in favour was that a potential home-zonal subscriber may wish to use a fixed line CLI so its customers recognise the geographic area where their services are offered, and can make return calls at local rates.

An alternative viewpoint was that as a mobile phone is being used, there should be no change in location clarity from an emergency services perspective when calling from a mobile within the home-zonal area; mobile operators should always present a call to an emergency service number.

One respondent welcomed ComReg's recognition that some customers may want the capability to originate calls using the geographic CLI and that this would be possible subject to agreeing processes with ComReg.

### *3.3.2 Commission's Position regarding CLI*

Having reviewed the consultation responses, ComReg believes that the most appropriate approach to CLI in the home-zonal context is for the mobile number to be the normal CLI presented. The arguments in favour of allowing either CLI to be used are persuasive to a degree but the most important consideration is to not mislead the emergency services. An emergency call received from a geographic number will usually be assumed to originate from the home-zonal user's registered address, even though the emergency services will generally attempt to lock down the emergency location more precisely. An emergency call from a mobile number, on the other hand, will be treated from the outset as one carrying no implied caller location and determination of that location will be given the highest priority; this is appropriate when one considers the potentially large size of current home-zonal 'cells'.

ComReg believes this situation should be open to further discussion and possible change, especially in view of the expected future improvements in location technologies. Accordingly, interested parties should feel free to raise such requests within the context of the industry Numbering Advisory Panel (NAP) and if changes are agreed in that forum they can be reflected in an update of the NAP CLI

Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services recommendation NAP80 and subsequently in the National Numbering Conventions. In the meantime, as signalled in ComReg 06/33, ComReg will consider favourably on a case-by-case basis any strong arguments for individual situations where geographic number CLI might be more suitable.

### 3.4 Allocation of Geographic Numbers

#### 3.4.1 Allocation of Geographic Numbers to non-Fixed Line Operators

ComReg is reluctant to introduce any changes that might erode the existing well tested relationships between geographic numbers and indication of price and location, which are currently safeguarded in legislation<sup>11</sup> and in the National Numbering Conventions. The scope of any amendments to number allocation rules to facilitate home-zonal services should therefore be carefully circumscribed to avoid such erosions. In ComReg 06/33, ComReg proposed that for geographic numbers assigned to mobile operators, the equivalent of the regular fixed termination point (i.e. the “*physical point at which a user is provided with access ...*”) should be defined as the mobile subscriber’s registered address. This would be without prejudice to the operator’s right to permit day-to-day use anywhere within the designated MNA area for the number concerned.

#### 3.4.2 Long-term availability of Geographic Numbers

In document 06/33, ComReg stated it was concerned that the allocation of number blocks for home-zonal services could put additional strains on the national geographic numbering resource, which might prove to be an issue in the longer term. However, ComReg provisionally considered that the benefits of home-zonal services outweighed the disadvantages and so it was generally in favour of allocating geographic numbers to mobile operators. ComReg sought consumer viewpoints before coming to any definitive conclusions on the matter.

**Q. 8. Do you agree with ComReg that geographic numbers should be allocated to mobile network operators which have a need for this for new convergence services?**

#### 3.4.3 Views of Respondents on allocating geographic numbers

Respondents were fairly equally divided in terms of a straight yes/no answer to whether mobile operators should receive allocations of geographic numbers for home-zonal purposes. However, good support was indicated for such allocations if a *quid pro quo* arrangement could be devised that allowed fixed-line operators to benefit correspondingly from these kinds of convergence products. In that context, one respondent suggested the development of an overall strategic framework for fixed-mobile convergence services while a further two specifically referred to the provision of mobile numbers for services based on VoIP, Wi-Fi, WiMAX, UMA platforms.

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<sup>11</sup> The Universal Service Regulations define a geographic number in terms of its relationship to a physical network termination point.



## Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services

One mobile respondent requested ComReg to acknowledge that home-zonal type tariffs could be implemented without geographic numbers and consequently the benefits associated with the use of geographic numbers would be just a sub-set of the consumer benefits estimated overall in respect of home-zonal services.

Finally, one respondent noted that *“If an Electronic Communications Service provider wishes to provide a Geographic service conforming with the accepted standards for this service, then they should be allocated Geographic numbers, regardless of their type of network.”*

### 3.4.4 Commission’s Position on allocating geographic numbers

ComReg recognises the concerns of fixed-line operators in respect of opening the geographic number range to mobile players but considers it is ultimately the context of use of the numbers that must be taken into account, rather than the actual network implementing the numbers. In the past the question of fixed location usage with fixed-line (retail) costs did not arise in respect of mobile networks so allocation of geographic numbers to those networks was not at issue.

ComReg also believes that new situations are opening up in respect of mobile-like opportunities for fixed networks – of the kinds referred to in 3.4.3 above by respondents. ComReg believes there is no inherent reason why mobile numbers should be withheld from fixed-line operators for such services if they meet the relevant criteria, with consumer protection (especially in respect of transparency) being the main factor. *Note: No such applications have been received to date.*

ComReg agrees with the views of one respondent which wrote:

*“Like wireless-[LAN](#) and VoIP, fixed-mobile hybrid services have the power to reconfigure traditional approaches to the supply of voice telephony. They could stimulate wider mobile voice and data use, improving national competitiveness. They would also lead to greater competition as different provider types (fixed, VoIP and mobile) compete for business and consumer customers alike.”*

That response encapsulates the wide range of opportunities presented by converged services for all types of players. In agreement with it, ComReg has now concluded that applications should be accepted from mobile operators for geographic numbers, subject to a satisfactory basis being determined for avoiding termination rates rising beyond fixed-line levels. This proviso is discussed further under the Market heading in Section 2.4 above.

**Decision No. 3. ComReg will consider well justified applications for geographic numbers from mobile operators in the future, provided it is satisfied that a worthwhile<sup>12</sup> advantage will pass to consumers as a result of granting the application, and that there is no attendant serious risk of retail charges for calls to geographic numbers rising unduly above existing fixed-line rates.**

<sup>12</sup> “Worthwhile” in this context means after taking account of the extra complexity this introduces to numbering management and the dilution of certainty for consumers in the usage of the number.

**Q. 9. Do you agree that fixed line operators might come to arrangements for mobile termination of calls to geographic numbers, as described in Section 3 (of ComReg 06/33)? If you foresee alternative scenarios for mobile termination of calls to geographic numbers, by fixed-line operators, please describe these.**

*3.4.5 Views of Respondents on fixed operators hosting HZ numbers*

There was a limited response to this question. One mobile respondent conceded that it is technically possible for fixed operators to facilitate arrangements for mobile termination of calls to geographic numbers. It noted that indeed operators with both mobile and fixed arms could use this combination of networks to introduce hybrid fixed-mobile type services for themselves. The respondent added “*While a number of routing solutions are possible, in all cases the geographic number would reside on the fixed network and inbound calls would be onward routed to the mobile operators for termination on the end user’s mobile. Fixed termination rates would apply between interconnected operators and the fixed network hosting the geographic numbers.*”

Two other respondents, observed the same possibility, though with concern and suggested that in their view “*Fixed Line Network Operators*” means *eircom*, which has its own mobile subsidiary, Meteor.

A fourth respondent agreed with ComReg that one possible scenario is for the fixed operator to receive its termination rate and in effect forward the call to the relevant mobile operator. This respondent felt that that should be the preferred solution (“*until fixed-line operators get equivalent access to mobile network bottlenecks*”).

One respondent felt it was unclear in the context of this question whether the current National Numbering Conventions prohibit arrangements in which the fixed-line operator hosts the relevant geographic number but forwards incoming calls to it onwards for delivery by a co-operating mobile operator. The respondent added that from the calling customer’s viewpoint (and that of any interconnected operator), there is no difference between calling a number which terminates on the fixed operator's network or one which ultimately terminates in a subsequent mobile home-zonal area. It was proposed that ComReg should develop an amendment to the conventions if it believes such arrangements between fixed and mobile operators should be possible.

*3.4.6 Commission’s Position on fixed operators hosting home-zonal numbers*

ComReg is encouraged to note that both fixed-line and mobile operators consider that co-operation on home-zonal service provision is possible, as such a mutually beneficial arrangement could afford additional opportunities for both sectors to advance their services to consumers. Increased retail charges for geographic calls are avoided where the geographic number is retained by the fixed-line ‘partner’ in such an arrangement. ComReg does not consider that such innovative arrangements are outside the current National Numbering Conventions so long as the called party is based within the relevant MNA for the geographic number concerned. ComReg considers this should also be true for fixed contractual arrangements in which handover of calls from fixed-to-mobile occurs outside the MNA concerned so long



Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services as customer termination occurs in the MNA. However, an amendment<sup>13</sup> or explanatory note to the conventions is needed to establish this more clearly. In particular, it is important that an effective inter-operator agreement exists to ensure the arrangement does not impede number portability options in any way and the contractual arrangements between the parties must be such that portability processes can be handled in the normal manner by the party hosting the geographic number. ComReg will therefore amend the National Numbering Conventions accordingly at their next review point but in the meantime will implement this understanding, as necessary.

**Decision No. 4. ComReg will amend the National Numbering Conventions to ensure that where geographic numbers are hosted by a fixed-line operator on behalf of another terminating operator, handover of calls between those two operators outside the MNA is not excluded, provided that termination to the called party occurs within the MNA (so that the fixed-line operator's ability to support the industry number portability processes is unaffected).**

*Note: Analogous situations might arise in the future regarding mobile numbers or numbers hosted by mobile operators on behalf of fixed-line operators, in which case ComReg will consider at that time and in those circumstances what rules should apply.*

### 3.5 Number Portability

This Consultation dealt with the extension of Geographic Number Portability (GNP) to include mobile operators, in addition to the allocation of new geographic numbers. The availability of GNP is likely to be critical to the commercial attractiveness of any home-zonal service offerings as it would facilitate seamless migration to a 'mobile-only' solution for the existing bulk of fixed-line customers. The attractions of this may be very strong for consumers who are already considering a mobile-only solution, but who – for business or personal reasons – are reluctant to give up their 'normal' geographic number. The avoidance of the cost and inconvenience of a number change are of huge importance in such instances.

#### 3.5.1 Implementation of Number Portability

ComReg stated that the most obvious porting solution is for ported geographic numbers to continue to be included in the GNP database, regardless of whether the number-block holder is a fixed or mobile network. This means that mobile networks with home-zonal service would directly interwork with both fixed and mobile porting databases and would use the corresponding porting processes.

ComReg considered that extending GNP to mobile operators would involve a detailed review and update of the GNP processes, which would need to be factored

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<sup>13</sup> The immediate issue to be tackled in the amendment or note is the currently ambiguous position of a fixed operator hosting the geographic number for the customer of a subsequent terminating operator and handing it over outside the MNA (i.e. to the co-operating mobile operator which then delivers it within the MNA). This implies a special operation of some kind (typically a number translation at the inter-operator interconnection point that is transparent to calling and called end-users).

Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services into the relevant work programmes. Any decision to extend GNP would need a relatively minor change to the National Numbering Conventions.

### 3.5.2 *Beneficial Impact on Location Portability*

ComReg referred to a practical limitation on location portability in Ireland that concerns consumers wishing to move within an MNA (as permitted by the National Numbering Conventions) but unable to retain their number(s) as they are moving to a new *eircom* switch area. This affects other operators also as they are in most cases dependent on *eircom* support in respect of the consumer's physical copper wires.

ComReg noted that the extension of geographic numbers to mobile operators would overcome this hurdle. Whole-MNA location portability for users would be achieved quite automatically by customers porting to a mobile operator.

**Q. 10. Do you agree with ComReg that GNP should be extended to mobile network operators which have a need for this for new convergence services and specifically for home-zone type services?**

### 3.5.3 *Views of Respondents on GNP for MNOs*

The consultation responses generally supported the extension of GNP to mobile operators. This support varied from unconditional support, to dependency on a prior decision to allocate (new) geographic numbers to mobile operators, to a dependency on access by fixed operators to mobile numbers.

One respondent emphasised that the home-zonal business case would be critically undermined by a failure to provide GNP while another noted that allocation of geographic numbers in the first instance would imply automatic rights to porting, under the Universal Service Regulations, as all the operators involved would be categorised as [PATS](#)<sup>14</sup>. Other respondents emphasised the need to cover GNP porting from one mobile operator to another, and back from mobile to fixed-line.

Several respondents felt that the GNP process must be reviewed to ensure it could cope with the new requirements and two of these listed difficulties they perceived in that regard (see bulleted list at end of Section 4.2 below). One noted at a more general level that there could well be a commercial impact on all fixed-line operators.

### 3.5.4 *Commission's Position on GNP for MNOs*

Having reviewed the responses, ComReg considers that GNP should be accorded to mobile operators contemporaneously with the allocation of new geographic numbers. ComReg also considers that GNP for geographic numbers must work in all directions (fixed-mobile-VoIP-cable).

The various concerns related to the operation of GNP that were expressed by respondents and that are discussed in Section 4.3.6 below are not new to ComReg, which has been engaged with industry from the beginning in the GNP and [GLUMP](#)

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<sup>14</sup> Publicly available telephone services; this is a formal status under the Universal Service Regulations.

Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services processes. The GNP process is now quite old and – despite the heavy efforts that have gone into it over the years - is neither efficient nor convenient. An improved system would benefit all parties and seems to be essential even without consideration of home-zonal issues. The additional home-zonal needs, VoIP, the new emergency access system under consideration by [DCMNR](#) and difficulties with GLUMP are driving towards a fundamental overhaul of the system. ComReg has already taken early steps with industry in respect of some of these matters and that process will now be accelerated<sup>15</sup>.

ComReg has considered the meaning of ‘provision of service at a fixed location’ and concluded that that is essentially what a home-zonal service does. In the case of a home-zonal service, the fixed location is the registered address of the home-zonal customer within the relevant MNA. To the extent that mobile networks, all of which are currently PATS, provide such a service, they are entitled under Regulation 26(1) of the Universal Service Regulations to offer GNP to consumers wishing to port their geographic numbers (see Section A1.4 below). Therefore, ComReg has determined that Decision No. 5 below shall be implemented. This is also in accordance with Recital 40 of the Universal Service Directive, which states that Member States<sup>16</sup> may apply provisions for porting numbers between networks providing services at a fixed location and mobile networks.

**Decision No. 5. Geographic Number Portability (GNP) shall also be extended to mobile operators for home-zonal purposes, contemporaneously with the allocation to them of blocks of geographic numbers.**

**Q. 11. Do you agree that such [GNP] extension would be of great significance to (a limited group of) consumers moving location to a new switch area within an MNA, by averting the need to give up their well-established geographic numbers (i.e. through the automatic location portability that would exist in a mobile operator’s home-zone area)?**

#### 3.5.5 Views of Respondents on GNP benefit for location portability

Three respondents agreed that there would be benefit to consumers in terms of enhanced location portability, though recognising that only a limited group of people would be affected. Two noted that location portability does exist for those moving within an *eircom* switch area. One mobile operator suggested that if the home-zonal boundaries were less restricted then the location portability advantages for consumers would be even greater. One respondent noted the possibility that other networks (e.g. [IP](#)) could also be less limiting.

#### 3.5.6 Commission’s Position on GNP benefit for location portability

ComReg agrees that location portability is enhanced with home-zonal service, thus avoiding the need for a small group of consumers to give up valuable geographic numbers when moving location within an MNA but outside the reach of *eircom*’s

<sup>15</sup> ComReg considers that in the longer term a more integrated fixed-mobile NP process could become the most efficient solution and will keep that option in mind.

<sup>16</sup> ComReg, as the National Regulatory Authority has responsibility for numbering issues in Ireland under Regulation 22 of the Framework Regulations.

Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services local switch. Some VoIP services might also achieve this, though it is probable that many consumers would hesitate to switch over totally to VoIP for the present.

### 3.6 Technology Neutrality and Promoting Competition

Geographic numbers, because of their physical location dependence, have traditionally been closely associated with fixed networks. With the publication of ComReg 04/103<sup>17</sup>, Irish geographic number usage was opened up to VoIP, while maintaining the restriction to individual MNAs. Home-zonal services open the opportunity for mobile networks to avail of geographic numbers within the MNAs<sup>18</sup> concerned. Similarity with the fixed-line networks is maintained by requiring a registered fixed address within the MNA concerned, for each geographic number allocated or ported. These changes not only implement a technology neutral approach but they promote competition in geographic services. ComReg is open to similar technology neutral proposals based on mobile numbers.

Nomadcity within an MNA would not be difficult for VoIP or mobile users to support, though mobile networks would probably limit this as far as possible, for legitimate commercial reasons. ComReg notes the similarity of such limited nomadcity to the use of DECT and other wireless terminations on fixed-line services. Therefore it is becoming apparent that technology neutrality is coinciding with the convergence of services and/or networks.

Technology neutrality is discussed more fully within the legal and [RIA](#) contexts below, in Appendix A and Appendix D, respectively.

### 3.7 Emerging Services

While fixed and mobile telephony are well developed services, there are other emerging services which may have to be integrated into the existing call services regime in the future. These include still-developing VoIP as well as Next Generation Network (NGN) based services. Although inter-working of fixed-line and mobile numbers at this stage will set precedents that might present unforeseen difficulties in the future, ComReg does not consider that these potential difficulties of themselves are reasons to not support the emergence of home-zonal services now.

**Q. 12. Do you have comments concerning technology neutrality, promotion of competition or emerging services? If so, please elaborate as necessary. Note: Comments concerning Section 9 are addressed within Q. 4 above.**

#### 3.7.1 Views of Respondents on technology neutrality etc.

A respondent noted that “*Homezone brings additional choice for consumers and so is welcomed in principle. Competition and innovation in the communications markets, and new services or methods of delivering an existing service are welcome, if introduced in a manner that protects competition and consumers, is balanced and*

<sup>17</sup> ComReg 04/103: VoIP services in Ireland; Numbering and related issues.

<sup>18</sup> The whole point of a geographic number is that it relates to a specific geographic zone. The actual zone boundaries are amended from time to time, following consultation, within the scope of national number changes.

Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services *is non-discriminatory.*” However this respondent added that “*ComReg can not allocate Geographic numbering to different networks with different conditions attached, so mobile networks cannot be allowed greater flexibility in defining minimum numbering areas than that applicable to fixed ([PSTN](#) or IP) networks.*”

Several fixed-line operators reiterated their views that technology neutrality was not being assisted if home-zonal service meant unbalanced advantages to mobile operators, with two of these suggesting that “*fixed line operators may elect to exit the market thereby reducing the overall choice to end consumers.*”

Another stated “*In consultation on universal service (ComReg 06/29), ComReg referred to the limitations of mobile in meeting the requirements of the universal service obligation ([USO](#)) and in it “**ComReg’s position**” states: “It should be noted that mobile access, though offering service on a national basis, **does not meet the legal requirement of access at a fixed location**, while many alternatives to wireless do not have national licences, and none have roll-out on a national basis.”. In this [current] consultation and the Briefing Note on UMA, however, ComReg recognises the market reality that MNOs and other operators are considering the use of cellular and other wireless technologies to provide services at a fixed location. It follows that a USO operator should be allowed discharge its USO via appropriate use of wireless technologies.” The respondent added: “In May 2005, the European Commission emphasised: “The principle of technological neutrality allows universal service providers to use any technology, whether wired or wireless, which is capable of delivering that service at a fixed location (see Recital 8, EU Universal Service Directive).””*

One respondent proposed that the launch of home-zonal services should trigger a review of the universal service requirement (USO) for providing access at fixed locations. The respondent suggested that there potentially could be several alternative providers who may be able to provide this access at lower cost than *eircom*.

A mobile operator commented that “*A key barrier to realizing the full range of innovative convergent services is legacy national regulation of geographic numbers - in particular, national regulation of geographic numbers which is not technologically neutral but reflects historical delivery of voice calls using copper pairs to a network terminating point on business or consumer premises. It also now permits local geographic mobility using radio technologies such as DECT, Wi-Fi etc. Comreg must ensure that all technologies can compete on an equal basis, including the delivery of inbound geographical number calls to an identified office or home location using GSM / 3G networks.*”

### 3.7.2 Commission’s Position on technology neutrality

ComReg has dealt with the first sets of respondents’ views expressed above in earlier sections of this document.

ComReg has examined the relevant section of ComReg 06/29 but has not identified any inconsistency between its statements referred to above and the positions put forward in either ComReg 06/33 (i.e. this consultation) or ComReg 06/43 (Briefing Note on Unlicensed Mobile Access). ComReg 06/29 stated that it considered provision of access at a fixed location means such provision being made to premises. ComReg believes that the home-zonal concept, which has only recently been proposed in Ireland, can potentially meet that description. However, ComReg does

Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services not propose to reopen the matter of USO on the back of early home-zonal services, as proposed by one respondent, though of course home-zonal issues would be taken into consideration in any future review of USO.

**Q. 13. Do you agree with the wording used in Appendix C for amendments to the National Numbering Conventions, regarding home-zone services?**

*3.7.3 Views of Respondents on amendments to Conventions*

Respondents felt the wording of Appendix C reflects the general thrust of the consultation but some fixed-line operators considered this to favour mobile network operators and thus to be unacceptable. One respondent felt the proposed new Convention 11.2.1-3b (i.e. calls treated as unavailable when the home-zonal user is away) may be overly prescriptive, while another felt that this requirement was service related and not technologically neutral. The latter also added that the amendment should focus on the number *per se* and not the user, as that was confusing.

One respondent felt the second sentence of proposed new Convention 11.2.1-6 (i.e. use of the geographic number only within the MNA or adjoining MNA) may be overly prescriptive, while a second felt it was acceptable pending the introduction of better location capabilities. A third respondent could not accept usage of a geographic number outside its MNA (i.e. no adjoining MNAs), while a fourth considered it confusing for this amendment to be covering both allocation and use.

*3.7.4 Commission's Position on amendments to Conventions*

ComReg thanks respondents for their inputs and will take these into account when amending the conditions attached to rights of use for geographic numbers if the latter are allocated to mobile operators (or to be ported to them). The National Numbering Conventions will also be updated accordingly. The revised amendments following this consultation can be found in Appendix B of this document. The revisions:

- discard the proposed convention 11.2.1-3b that concerns user presence within the MNA. [ComReg agrees with respondents that this convention risked being over-prescriptive and would be difficult to enforce. Furthermore, ComReg has accepted earlier in this document that formally allowing mobile users to operate within adjacent MNAs is not desirable.]
- retain the original number 11.2.1-3 for the former 11.2.1-3a [doc numbering only]
- amend 11.2.1-3 by deleting the word “usually” from “calls to geographic numbers are usually routed ...” and also drop the proposed insertion “or a mobile end-user registered ...”. [The former removes a potential ambiguity and in the latter cases the inserted words will be replaced by a short explanatory note after convention 11.2.1-3 saying that for mobile networks the “fixed destination” referred to in the convention is the user’s registered address, which means that delivery of a call should be to the mobile cell containing that address. This preserves network neutrality but leaves no doubt about the handling of calls within the less certain location environment of a mobile network.]



Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services

- amend convention 11.2.1-6 by converting it to 2 conventions 11.2.1-6 dealing with allocation (new 11.2.1-6) and use (new 11.2.1-7).

**Q. 14. Do you have general comments on the topic of home-zone services or on other sections of this document? If so, please elaborate as necessary.**

#### *3.7.5 Views of Respondents on other matters*

In responding to this question, a number of the issues covered above were reiterated. In particular, fixed-line operators took their opportunity to again object to what they felt was preferable treatment for mobile operators. The following response is a fair representation of their views “*ComReg should consider reciprocity in terms of market structures and only facilitate progress if an equitable competitive environment that does not prefer any sectors of the Market or any individual operator is retained. We believe [this] has enormous consequences for ourselves and other Fixed Line Operators and ComReg should not permit the allocation and porting of geographic numbers to/between mobile operators as fixed line operators are seriously disadvantage and being virtually ignored with regard to this emerging market.*” It was also suggested by some that *eircom*, as the dominant fixed-line operator, could further gain by leveraging its new mobile acquisition, Meteor, thus making the situation even worse for OAOs.

One respondent drew attention to the differences in call quality between fixed and mobile, as well as customer’s expectations of the former when dialling a geographic number.

#### *3.7.6 Commission’s Position on other matters*

ComReg has addressed most issues raised by Q14 in other sections of this document. The issue of call quality difference between fixed and mobile services is a valid consideration but ComReg considers it is one with which customers have already become familiar. Mobile quality is generally accepted for a huge proportion of communications today and this issue arises even in the case of DECT phones attached to fixed-line terminations.

## 4 RIA Assessment

In ComReg 06/33, in conjunction with the analysis contained within the main body of the Consultation document, ComReg undertook a regulatory impact assessment (RIA) which examined the various policy options open to ComReg for dealing with home-zonal services. RIAs can help improve the decision-making process by providing a framework for weighing up the costs and benefits of the various policy options under consideration. In doing so, RIAs encourage greater transparency and better ensure that market interventions are properly justified.

### 4.1 Proposal

This RIA relates to the potential policy options to facilitate, if at all, the introduction of home-zonal services in the Irish market. In document 06/33 ComReg identified four policy options that it could potentially choose to adopt. A summary table of these options, along with the costs, benefits and other impacts associated with each option is contained in Appendix D. The options identified were:

- Option #1: Maintain the existing regulatory regime ('No change');
- Option #2: Extend the allocation and porting of geographic numbers to include mobile operators and encourage the commercial negotiation of termination rates ('Market-based only');
- Option #3: Extend the allocation and porting of geographic numbers to include mobile operators and address the issue of safeguards for termination rates within the relevant wholesale Market Review ('Market Review approach');
- Option #4: Extend the allocation and porting of geographic numbers to include mobile operators and address the issue of safeguards for termination rates by attaching conditions on the use of geographic numbers in the National Numbering Conventions. ('Conditions of use approach').

In document 06/33, ComReg indicated that it was then of the view that Option #3 ('Market Review approach') represented the most appropriate means of contributing to the achievement of its overall objectives. However, it was highlighted that this was still a provisional view and that ComReg may need to be change this view depending on market circumstances and consultation responses.

### 4.2 Views of Respondents

In relation to its RIA ComReg received a quite diverse range of comments, although some points were made by more than one respondent. In the list below ComReg has sought to best reflect these comments by briefly summarising the key points made by respondents in relation to the RIA.



## Summary of Key Points made by Respondents in relation to the RIA

*Failure to consider alternative options*

A number of respondents considered ComReg's RIA to be inadequate and incomplete in that it focused only on the allocation and porting of geographic numbers and did not consider a broader range of policy options such as:

- ▶ the use of call forwarding;
- ▶ the allocation of personal numbers;
- ▶ the allocation of mobile numbers; or
- ▶ the allocation of numbers from a new non-geographic range.

*Failure to consider additional strain on numbering resources*

Two respondents felt that the RIA failed to properly consider the risk of additional strain on the geographic numbering resource from the introduction of home-zonal services.

*Failure to consider loss in value of characteristics of geographic-numbers*

One respondent felt that the RIA failed to properly consider the loss of value in the characteristic features of geographic numbers (e.g. user location, low cost to caller, expected higher fixed voice quality).

*Failure to consider impact on overall communications efficiency*

One respondent considered that the RIA failed to give adequate consideration to how home-zonal services would encourage end-users to migrate from 'inherently cheaper' fixed-line network to 'more expensive' mobile networks thereby resulting in a reduction in overall communications efficiency.

*Failure to consider potential impact of a RPP charging model*

The same respondent also argued that the consultation and RIA failed to take proper consideration of how the introduction of home-zonal services and potentially a receiving party pays (RPP) charging model might be introduced to the market.

*Failure to consider potential impact on existing GNP and GLUMP processes*

Two respondents felt that a more detailed regulatory assessment should be undertaken to consider the technical difficulties, timescales, and (additional) costs that the proposed introduction of home-zonal services would have on the fixed-line sector and on the current NP and associated unbundled local loop (GLUMP) processes e.g:

- ▶ Would the existing portability database be able to cope with home-zonal services and would there be a need for real-time look-ups)?
- ▶ How would a geographic number be ported from a cable network operator to an MNO and vice versa?
- ▶ How would GNP be implemented for multi-line and multi-number accounts?

### 4.3 Commission Position on RIA-related Issues

#### 4.3.1 *Failure to consider alternative options*

ComReg refutes the argument that it failed to consider the alternative options outlined above in its RIA. ComReg would firstly highlight that some of these 'options' could be undertaken without any change to the regulatory framework. For example, there is nothing to prevent operators from making use of call forwarding or personal numbering solutions to provide hybrid fixed-mobile services. As such ComReg considers that such approaches are covered by the RIA, falling as they do within the scope of Option #1 ('No change').

In relation to the alternative suggestions put forward – i.e. allocating mobile numbers or allocating numbers from a new numbering range, ComReg believes these suggestions are clearly sub-optimal to the other policy options identified and hence does not consider their inclusion in the RIA to be warranted. In relation to the first of these suggestions – i.e. that a home-zonal service could be provided by allocating mobile numbers only, ComReg believes that this suggestion is flawed in that it fails to properly appreciate the true value of the home-zonal proposition. If a home-zonal service was provided using a mobile number only, then the calling party would not be able to benefit from the significantly reduced rates of calling a home-zonal subscriber on a geographic number. Such a service would, in effect, be a mobile service with simply reduced tariffs for outgoing calls made within the home environment. This does not reflect the service being considered in this Consultation, which is one that facilitates reduced rates for both making **and** receiving calls. As such ComReg does not consider the allocation of mobile numbers to be a valid option for consideration in the RIA.

Similarly, ComReg considers that the other option suggested, that of allocating numbers from a new non-geographic range, is also sub-optimal to the other policy options identified and hence is not a realistic alternative. Such an approach is likely to introduce additional complexity into the home-zonal service for no apparent gain. A new tariff structure would need to be developed for the new number range and end-users' confidence in this tariff structure would need to be developed over time. Furthermore, consuming a whole new code for a new numbering range would increase pressure on existing numbering resources. Given these drawbacks and the lack of apparent benefits, ComReg does not consider the allocation of numbers from a new numbering range to be a valid option for consideration in the RIA.

#### 4.3.2 *Failure to consider additional strain on numbering resources*

ComReg rejects the assertion that it failed to properly consider the additional strain that a home-zonal service would put on numbering resources, as the RIA did indeed highlight that some additional demand would be placed on the geographic numbering resource. It was also noted that the overall impact of home-zonal service on additional numbers was expected to be relatively low (<100k nationwide p.a.). This view was based on the assumption that a home-zonal service, initially at least, would be of most interest to end-users who were already paying for both a fixed and

Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services mobile service<sup>19</sup>. For certain of these end-users, a home-zonal service has the attraction of enabling them to dispense with their fixed-line subscription while still seamlessly receiving incoming calls to their geographic number on their mobile. Hence these users could save money on their fixed subscription, although such savings are likely to be at least partly offset by the monthly rental on the home-zonal service<sup>20</sup>. As these users would already have a geographic number and hence would be porting it over to the home-zonal service, one would not expect any material increase in demand for geographic numbers.

#### *4.3.3 Failure to consider loss in value of characteristics of Geo-Numbers*

One respondent asserted that the RIA failed to properly consider the loss of value in the characteristic features of geographic numbers (e.g. user location, low cost to caller, expected higher fixed voice quality). ComReg appreciates the concerns expressed, but it considers that these issues were adequately addressed in ComReg's original Consultation.

In section 4.2 of document 06/33, ComReg highlighted how some users value the location information conveyed in a geographic number which can offer them a greater sense of permanence and traceability than a mobile number. It was held that this is, in part, due to the fact that the called party does not assume the mobile number can be traceable by way of a billing address that can be easily accessed. To remedy this issue, ComReg proposed that all customers of home-zonal services should be registered in respect of name and address within the relevant MNA. ComReg believes that this remedy adequately addresses any potential concerns. When coupled with the conclusion contained in Section 3.2.2 above to limit the home-zonal boundary to that of a single MNA, ComReg believes this ensures that the location information conveyed by a geographic number is standard regardless of whether it is related to a home-zonal service or a PSTN or other service<sup>21</sup>.

In relation to the claim that the question of low cost to the caller was not adequately addressed in the RIA, ComReg finds this proposition difficult to understand. Document 06/33 raises the issue of consumer transparency at several points (e.g. section 4.1) and indeed a main reason for conducting the consultation was to ensure this issue was explicitly brought to the industry's notice and addressed. In the RIA summary table, the issue of tariff transparency is highlighted under the 'other impacts' column for all positive policy options. As such ComReg does not accept the claim that this issue was not adequately addressed in the RIA

Finally, ComReg does accept as valid the argument that end-users have high expectations concerning the voice quality of a connection when dialling a geographic number, and this requires the RIA topics to be reconsidered. In that respect, ComReg

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19 Potentially a home-zone service could be attractive to some 'mobile only' subscribers in that it should cost (significantly) less for other users to call them if the geographic numbers are dialled (though perhaps at additional cost to themselves, due to the home-zone subscription). As such home-zone subscribers would not have existing geographic numbers, they would place some additional demand on number resources.

20 A further disincentive to switch to a home-zone solution is that many end-users are likely to be keen to retain their fixed-line subscription for Internet access.

21 Such as VoIP, in accordance with ComReg 04/103.

## Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services

takes note that GSM is a widely accepted technology whose quality of service most end-users would consider comparable, and in some cases superior to some other ‘fixed-line’ solutions that already use geographic numbers (e.g. some VoIP services, PSTN services delivered over FWA connections, DECT solutions, etc...). Taking this into account, ComReg believes that the RIA was not compromised by omitting this issue in the original Consultation.

### 4.3.4 Failure to consider impact on overall communications efficiency

ComReg does not consider that the impact on communications efficiency of customers moving from fixed to mobile networks is one that needs to be directly addressed in this document. ComReg believes that efficient markets are best achieved by facilitating free and open competition between as wide a choice of service offerings as possible, provided they meet the relevant requirements for consumer protection and tariff transparency. ComReg believes therefore that by facilitating home-zonal services, it contributes to potential improvements in overall efficiency, by increasing the choice and variety of services available to end-users. This, in turn, increases pressure on competitors to improve their own offerings, thereby ensuring end-users receive the best mix of cost and convenience.

### 4.3.5 Failure to consider impact of a Receiving Party Pays (RPP) Model

ComReg believes that the view of one respondent that the introduction of home-zonal services implies the application of a receiving party pays model and that this should be addressed in the RIA, is misplaced. In reaching this conclusion, the respondent places particular emphasis on a sentence in Section 4.1 of document 06/33 which stated that: “[ComReg] ...considers that any cost beyond fixed-line termination costs should be recovered from the end-user of the home-zone service”.

ComReg believes it is reasonable that a called party which is receiving additional functionality, such as that provided by a home-zonal service, should pay for this (i.e. rather than the caller). This is not a new model and already happens in the case of call forwarding and especially international roaming<sup>22</sup>. These are not deemed to clash with the concept of caller pays. Accordingly, this is not a matter for consideration in the RIA.

### 4.3.6 Failure to consider impact on existing GNP and GLUMP processes

In relation to the assertion that ComReg failed to properly consider the potential impact a home-zonal service would have on existing GNP and GLUMP processes, ComReg accepts that these are important topics. However, the RIA did indeed highlight that the introduction of a home-zonal service was likely to ‘introduce extra complexity into the GNP process’ (see RIA summary table in Annex D).

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<sup>22</sup> When roaming abroad, the called party pays for any extra cost in delivering the call outside of the home country and the caller pays only the usual national charge.

In the context of the current need to review and overhaul the existing GNP processes (regardless of the introduction of any home-zonal services), ComReg believes the incremental effort involved in designing-in the capability to also cater for the handling of home-zonal requests when re-designing the existing processes should not prove an overly onerous burden. Furthermore, by involving the mobile operators in the review of the GNP processes, additional impetus and pressure can be brought to bear on resolving the current porting problems and ensuring that a smooth process is put in place. The inclusion of home-zonal porting within the GNP domain will also increase the number of customer ports than would otherwise be the case, which may amortise the development costs of the enhanced porting system over a larger number of transactions; that could result in an overall reduction in cost per individual port.

Overall, therefore, and notwithstanding the acknowledged additional complexity involved, ComReg believes the benefits of including home-zonal services within the GNP porting process outweigh the disadvantages and as such ComReg remains in favour of the policy option identified in document 06/33.

*Note: Respondents who raised the issue of a potential impact on existing GNP and GLUMP processes highlighted a number of specific instances where they believed difficulties may arise (e.g. possible need for real-time look-ups, options for facilitating porting between cable and mobile operators; and porting of multi-line/multi-number accounts). ComReg appreciates this input and has carefully considered these points in coming to its conclusion above. ComReg believes these are specific operational issues that will ultimately be the responsibility of the group implementing the review of existing GNP processes to resolve. To outline a response to such operational issues – which mostly exist regardless of the home-zonal concept - in what is essentially a home-zonal policy document, could be considered disproportionate and potentially pre-emptive in advance of a full consideration of all the relevant specific information.*

## 5 Next Steps

ComReg's Market Analysis Team will analyse the market positioning of home-zonal services and decide which relevant market they fall within.

The Team will then analyse that market in terms of home-zonal services and their impact, as well as the market positioning of home-zonal terminating operators. It will do this in the case of straightforward termination to a geographic number hosted by the mobile operator concerned but also for the situation where a fixed operator hosts the number and delivers the call to a mobile operator for final termination.

Always subject to satisfactory confirmation that this will not negatively impact termination and retail charges for geographic calls, ComReg will in principle be prepared to accept requests for geographic numbers from mobile operators for home-zonal services.

In the event that the above process threatens to unduly delay the introduction of home-zonal service in Ireland, ComReg will investigate whether alternative interim solutions can be developed to provide the necessary guarantees that will protect consumers, pending the completion of longer-term work.

Fixed line operators<sup>23</sup> should consider their options for providing mobile-like services to users, which – providing user transparency is fully supported – might qualify for allocation (and porting) of mobile numbers. These options might be in combination with some mobile operator or could be independent initiatives utilising the recently emerging technologies. ComReg does not guarantee to accept any specific proposal to allocate/port mobile numbers to new-type services but will carefully study any that are submitted.

Contemporaneously with allocation of geographic or mobile numbers to mobile or fixed-line PATS operators, respectively, the right to port numbers would also become applicable and the industry GNP process should be adapted to cater for this.

*Note: The situation with respect to [ECS](#) operators who qualify for geographic numbers (see Decisions 1, 2, 11 and 12 of ComReg 04/103) remains that they are expected to support number portability on a reciprocal basis to [PATS](#) operators willing to port to them and to unconditionally support number portability to other qualifying ECS operators.*

The National Numbering Conventions will be updated in due course with the relevant text to support the decisions in this document but in the meantime the amendments to the Conventions that are shown in Appendix B, shall apply.

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<sup>23</sup> This does not exclude IP-based operators.

## Appendix A – Legal Basis

### A1.1 Policy Objectives

In exercising its functions in relation to the electronic communications sector, ComReg is required to have regard to its statutory objectives as set out in Section 12 of the Communications Regulation Act 2002. These objectives require ComReg:

- To promote competition;
- To contribute to the development of the internal market; and
- To promote the interests of end-users within the Community.

In working towards these objectives, the Act also provides guidance as to the measures ComReg is required to take to meet these objectives. In the context of the proposals currently under review, only a subset of the full list of measures is relevant<sup>24</sup>. These have been taken from Section 12 of the Act which states:

*‘In relation to the objectives referred ...the Commission shall take all reasonable measures which are aimed at achieving those objectives, including- :*

*(a) in so far as the promotion of competition is concerned:*

- (i) ensuring that users, including disabled users, derive maximum benefit in terms of choice, price and quality;*
- (ii) ensuring that there is no distortion or restriction of competition in the electronic communications sector;*
- (iii) encouraging efficient investment in infrastructure and promoting innovation, and;*
- (iv) encouraging efficient use and ensuring the effective management of radio frequencies and numbering resources.*

*(b) in so far as promotion of the interests of users within the Community is concerned:*

- (v) promoting the provision of clear information, in particular requiring transparency of tariffs and conditions for using publicly available electronic communications services.*

In addition to these objectives, ComReg is also required to have regard to the principle of technological neutrality as outlined in Section 12(6) of the Communications Act 2002. This requires that ComReg take *‘the utmost account of the desirability that the exercise of its functions aimed at achieving the objectives ... does not result in discrimination in favour of or against particular types of technology for the transmission of electronic communication services’*.

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<sup>24</sup> See Section 12(2) of the Communications Act 2002 for full listing.

## **A1.2 Number Allocation**

Regulation 22(1) of the Framework Regulations states that “*The national numbering scheme shall be administered by the Regulator ....*”, while Regulation 22(3) states that “*The Regulator shall .... grant rights of use for numbers and number ranges for all publicly available electronic communications services in a manner that gives fair and equitable treatment to all undertakings...*”.

ComReg, as the Regulator, is responsible for managing the National Numbering Scheme and publishes the National Numbering Conventions (currently ComReg 05/62) which set out the framework for management and use of numbering resources.

The conditions of use for geographic numbers are set out in section 11.2.1 of the National Numbering Conventions.

## **A1.3 Geographic Number**

The definition of “geographic number” which is central to this consultation is set out in Regulation 2(2) of the Universal Service Regulations, as is the related definition of “network termination point”. They are as follows:

***Geographic number** means a number from the national numbering scheme where part of its digit structure contains geographic significance used for routing calls to the physical location of the network termination point; and*

***Network termination point** means the physical point at which a subscriber is provided with access to a public communications network; in the case of networks involving switching or routing, the network termination point is identified by means of a specific network address, which may be linked to a subscriber number or name.*

## **A1.4 Number Portability**

The manner in which numbers are allocated and used impacts on number portability requirements and potential requirements. Regulation 26 (1) of the Universal Service Regulations requires that:

*An undertaking providing a publicly available telephone service, including a mobile service, shall ensure that a subscriber to such service can, upon request, retain his or her number independently of the undertaking providing the service-*

- a) *in the case of geographic numbers, at a specific location, and*
- b) *in the case of non-geographic numbers, at any location.*

*This paragraph does not apply to the porting of numbers between mobile networks and those providing services at a fixed location.*

The above provisions derive from Article 30(1) of the Universal Service Directive.

In addition, and while the *italicised* text above states that the provisions do not extend to the porting of numbers between networks providing services at a fixed



Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services location and mobile networks, Recital 40 of the Universal Service Directive nevertheless also supports the application of provisions by Member States for porting numbers between networks providing services at a fixed location and mobile networks. Furthermore, Regulation 14(1) with Schedule C3 of the Authorisation Regulations authorise ComReg to attach specific number portability requirements to rights of use for numbers. Recital 41 adds that the impact of number portability is considerably strengthened when there is transparent tariff information. National Regulatory Authorities are required, where feasible, to facilitate appropriate tariff transparency as part of the implementation of number portability.

### **A1.5 Public Consultations**

The allocation of geographic numbers for mobile terminated calls and the other consequential inter-network allocation requests that will follow are likely to have some impact on the voice market.

Article 19 of the Framework Regulations requires that where the Regulator intends to take a measure in accordance with the Framework Regulations or the Specific Regulations which have a significant impact on a market for electronic communications networks or services<sup>25</sup>, it shall first consult on it, after which the measure may be adopted with or without amendment. In the case of the home-zonal concept, ComReg opened such a process with the publication of ComReg 06/33 and this document forms the immediate conclusion of that consultation process.

### **A1.6 Technology neutrality and promoting competition**

The Act of 2002 includes policy objectives and regulatory principles that are pertinent to this consultation and which ComReg took account of during the consultation:

- Under sub-section 12(6) of the Act, ComReg is required to take utmost account of the desirability that the exercise of its functions related to *subsection (1)(a)* does not result in discrimination in favour of or against particular types of technology;
- Under sub-section 12(2)(a) of the Act, dealing with promotion of competition, ComReg is required to ensure that:
  - users, including disabled users, derive maximum benefit in terms of choice, price and quality;
  - there is no distortion or restriction of competition in the electronic communications sector;
  - Encouraging efficient investment in infrastructure and promoting innovation.

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<sup>25</sup> Except in cases falling within Regulations 20(8) of the Framework Directive.

## Appendix B – Revision of National Numbering Conventions

*Note: deleted or new text is shown by cross-through or italics+underlining, respectively, below.*

### 1.1 Annex 6: Designations for Numbers

**New explanatory paragraph at start of Section A6.1 Geographic Numbers:**  
*‘Normal’ usage of geographic numbers has been for fixed-line networks, in which consumers and originating operators have developed certain historical perceptions regarding their retail and termination costs, respectively. Granting of geographic number rights of use has been extended to mobile operators in the expectation that this will not result in violation of such legitimate expectations.*

### 1.2 Section 11: Conditions of use for numbers

**11.2.1-3:** Calls to geographic numbers are ~~usually~~ routed to a fixed destination in a discrete geographical area (an MNA). Calls may also be forwarded to other destinations provided that:

- a) the caller is only required to pay the billing operator’s standard tariff for the original Irish geographic destination; and
- b) they are forwarded in a manner which does not restrict the ability to implement operator Number Portability;

*Note: for mobile networks the “fixed destination” referred to in this convention is the user’s registered address, which means that delivery of a call to the user should be from the mobile cell containing that address.*

#### **Amendment to convention 11.2.1-6:**

**11.2.1.6:** A geographic number may only be ~~used within their designated geographic numbering areas and may only be~~ allocated to an entity whose registered address is within the designated geographic area for that number—entities located within those areas.

This means that, for PSTN purposes, calls to the number concerned must be fully terminated to the end-user within that geographic area unless they clearly exit the fixed network PSTN within the area (i.e. logical termination on a gateway to some other network).

*Note: Call forwarding is not considered to be a violation of this Convention nor is genuine and short-term nomadic operation, for example in the case of VoIP services.*

#### **Amendment to convention 11.7-6:**

**11.7.6:** Geographic and Non-Geographic Number Portability (GNP & NGNP) occur between different ~~fixed~~ networks offering service at a fixed location<sup>26</sup> while

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<sup>26</sup> VoIP services are considered in principle to be services offered at a fixed location (i.e. the contracted place of service). Terminals connected elsewhere in nomadic use do not change this; they are regarded as being temporarily not at that fixed location.

Addressing Geographic Number Allocation for hybrid fixed-mobile telecoms services

Mobile Number Portability (MNP) occurs ~~and~~ between different mobile networks. ~~but not~~ GNP & NGNP can also occur – for geographic numbers - between ~~fixed~~ networks offering service at a fixed location and mobile networks where the mobile networks offer service at a fixed location. For fixed networks it

Note: ~~For fixed networks it~~ currently applies to geographic numbers, while NGNP applies to Freephone numbers, Shared Cost numbers, Premium Rate Numbers, Personal numbers, Universal Access numbers, IP-based numbers (~~portability deferred at present~~) and Internet access numbers<sup>27</sup> based on 189X;

Note: Mobile numbers may be allocated in the future to network systems other than traditional mobile networks, if suitable cases deemed to comply with Decision 1 of this document arise. In that case the following text will be inserted in 11.7.6 above, immediately before the italicised note.

Conversely, MNP can occur - for mobile numbers - between networks offering service at a fixed location and mobile networks where the networks offering service at a fixed location add substantial mobile capability to their offerings.

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<sup>27</sup> Internet access numbers are portable between networks insofar as ISPs can move between network operators. Because of the traffic volumes involved and likely need for new interconnection paths between networks, Internet access number portability will be subject to special processes and timescales.

## Appendix C – List of Directions and Decisions

For ease of reference, the following sets out a list of Decisions made in this document.

### List of Decisions

Decision No. 1. ComReg will consider justified applications for mobile numbers by fixed-line operators in the future, provided such applications indicate that a worthwhile advantage will pass to consumers as a direct result of the issuing of mobile numbers to fixed-line operators. ----- 9

Decision No. 2. A condition of use for geographic numbers, in the context of providing or receiving a home-zone service, will be that the number-holder must have his or her registered address within the MNA to which the number block is assigned. In addition, use of the geographic number shall be contained within that MNA, to the extent that the network's location capabilities will support.----- 19

Decision No. 3. ComReg will consider well justified applications for geographic numbers from mobile operators in the future, provided it is satisfied that a worthwhile advantage will pass to consumers as a result of granting the application, and that there is no attendant serious risk of retail charges for calls to geographic numbers rising unduly above existing fixed-line rates. 22

Decision No. 4. ComReg will amend the National Numbering Conventions to ensure that where geographic numbers are hosted by a fixed-line operator on behalf of another terminating operator, handover of calls between those two operators outside the MNA is not excluded, provided that termination to the called party occurs within the MNA (so that the fixed-line operator's ability to support the industry number portability processes is unaffected). ----- 24

Decision No. 5. Geographic Number Portability (GNP) shall also be extended to mobile operators for home-zone purposes, contemporaneously with the allocation to them of blocks of geographic numbers. ----- 26

## Appendix D – Regulatory Impact Assessment

### 1.1 Cost, Benefits and Other Impacts of Policy Options

The table below seeks to outline the principal costs, benefits and other impacts of each of the policy options identified.

Option	Costs / Disadvantages	Benefits / Advantages	Other Impacts
1. 'No change'	<ul style="list-style-type: none"> <li>▶ No explicit costs</li> </ul>	<ul style="list-style-type: none"> <li>▶ No explicit benefits</li> </ul>	<ul style="list-style-type: none"> <li>▶ Although there are no explicit costs or benefits from adopting the 'no change' option, arguably there is an opportunity cost to consumers in terms of the opportunity foregone of potentially availing of a service that may better meet their needs.</li> </ul>
2. 'Market-based approach'	<ul style="list-style-type: none"> <li>▶ Possibility that <i>home-zonal</i> service providers could set termination rates for calls to geographic numbers at a level which forces originating operators to increase their retail prices.</li> <li>▶ Some additional demand on the geographic numbering resource, although overall this is expected to be low (&gt;100k nationwide p.a.)</li> <li>▶ Introduces extra complexity into the GNP process.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Facilitation of <i>home-zonal</i> service offerings should increase competition between fixed and mobile providers.</li> <li>▶ Technology neutral approach</li> <li>▶ Least interventionist of all the positive approaches.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Need to ensure that any concerns regarding tariff transparency raised by the proposed service are addressed. In the absence of such assurances, ComReg does not consider this to be an acceptable option.</li> </ul>

Option	Costs / Disadvantages	Benefits / Advantages	Other Impacts
<p>3. 'Market Review approach'</p>	<ul style="list-style-type: none"> <li>▶ Possibility that non-SMP <i>home-zonal</i> service providers could set termination rates for calls to geographic numbers at a level which forces originating operator to increase their retail prices.</li> <li>▶ Dependent on the completion of the relevant wholesale Market Reviews.</li> <li>▶ Some additional demand on the geographic numbering resource, although overall this is expected to be low (&lt; 100k nationwide p.a.)</li> <li>▶ Introduces extra complexity into the GNP process.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Facilitation of <i>home-zonal</i> offerings should increase competition between fixed and mobile providers.</li> <li>▶ Technology neutral approach.</li> <li>▶ Safeguards against SMP <i>home-zonal</i> players potentially exploiting their dominance in the market for call termination.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Need to ensure that any concerns regarding tariff transparency raised by the proposed service are adequately addressed.</li> </ul>
<p>4. 'Conditions of use approach'</p>	<ul style="list-style-type: none"> <li>▶ Most interventionist approach.</li> <li>▶ Some additional demand on the geographic numbering resource, although overall this is expected to be low (&lt; 100k nationwide p.a.)</li> <li>▶ Introduces extra complexity into the GNP process</li> <li>▶ Unattractive to use numbering powers for wholesale price control purposes.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Facilitation of <i>home-zonal</i> offerings should increase competition between fixed and mobile providers.</li> <li>▶ Technology neutral approach.</li> <li>▶ Safeguards against all <i>home-zonal</i> players potentially exploiting their dominance in the market for call termination.</li> <li>▶ Implementation of regime would be relatively straightforward – could facilitate fast market entry.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Comprehensively addresses concerns regarding tariff transparency</li> </ul>

## Appendix E – Abbreviations

Cell-ID	Identifier of the radio cell in which communication is taking place
CLI	Calling line identification
DECT	Digital Enhanced Cordless Telecommunications
DCMNR	Department of Communications, Marine & Natural Resources
ECS	Electronic Communications Services (a term defined in 2.1 of the Framework Regulations; S.I No. 307 of 2003)
FWA	Fixed wireless access (i.e. using wireless to access a fixed network point)
GNP	Geographic Number Portability
GLUMP	A term coined to represent the application of NP in conjunction with ULL
IP	Internet protocol.
LAN	Local area network
MNA	Minimum numbering area. This is a geographic area to which specific blocks of (geographic) numbers are assigned and cannot be removed. This has significance for GNP.
MNO	Mobile network operator
MNP	Mobile Number Portability
MTR	Mobile termination rate. The payment a MNO receives from another operator to deliver a call to one of the mobile operators customers.
NGNP	Non-geographic Number Portability
NP	Number Portability
OAO	Other authorised operator
PATS	Publicly Available Telephone Service (a term defined in 2.2 of the Universal Service and Users Rights Regulations; S.I No. 308 of 2003)
PSTN	Public switched telephone network
RIA	Regulatory Impact Assessment
RIO	Reference Implementation Offer
SMP	Significant Market Power. SMP is a concept related to dominant market position, under competition law.
ULL	Unbundled Local Loop
UMA	Unlicensed Mobile Access
USO	Universal service obligation (i.e. obligation on one or more operator to provide certain telecommunications services to the public)
VoIP	Voice over Internet Protocol (IP)
Wi-Fi	A wireless local area network (WLAN) technology from the Wi-Fi Alliance that certifies network devices comply with the IEEE 802.11 wireless Ethernet standards
WiMAX	Stands for “World Interoperability for Microwave Access, Inc.”, which is an organization that promotes the IEEE 802.16 wireless broadband standard.