

Office of the Director of  
**Telecommunications  
Regulation**

# **Numbering in Ireland for the 21<sup>st</sup> Century**

***Decision Notice: D2/98***

**Document No. 98/22**

July 1998

## Foreword

In March 1998 I issued a consultative document on numbering in Ireland. This document set out proposals on how best to develop the telephony numbering plan to meet Ireland's needs in the first part of the 21<sup>st</sup> Century.

The ODTR received an excellent response to the consultative document and I would like to thank everyone who contributed. I was particularly pleased by the thoughtful and clear nature of the responses and impressed by the considerable effort which has gone into them.

As a result of the consultation process we have made considerable progress in deciding how best to develop numbering arrangements in Ireland. There is general consensus on the principles which we should follow (as set out in Chapter 2 of this statement) and many of the issues which must be resolved in preparation for liberalisation. These decisions are set out in Chapters 4 and 5.

There is less consensus on how best to develop the Irish numbering plan in the long term. Not surprisingly respondents expressed a range of views on this issue. In addition, the new earlier date for liberalisation (1 December 1998) has created immediate demands on the numbering scheme, and some number changes will be required in the short term. This in turn has eliminated some of the options available for evolving the numbering scheme, so the ODTR has further analysed the options for long term development of the numbering plan in combination with the responses to the consultative document, and sets out its current views in Chapter 3. This issue is so important to Ireland that I do not wish to take a final decision before giving the industry and consumers more opportunity to consider the new options. I will establish a Task Force on Numbering, with both industry and consumer representation, to examine these remaining issues.



A handwritten signature in black ink, which appears to read "Etain Doyle". The signature is written in a cursive, flowing style.

Etain Doyle  
Director

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## 1. Introduction

In March 1998 the ODTR issued a consultative document on numbering. The document sets out proposals on how best to develop numbering arrangements to meet Ireland's telecommunications needs for the first part of the 21<sup>st</sup> Century. In this Decision Notice we present the outcome of that consultation, and the decisions we have made following the process. We also:

- outline each of the issues analysed in the consultative document
- provide a summary of the views expressed by respondents
- present firm proposals on how to deal with each of the issues in the light of the consultation.

Nineteen organisations – a mix of network operators, service providers, users and equipment suppliers – responded to the consultative document. The organisations are listed in Figure 1.1 and their detailed comments are available for inspection at the ODTR's office in Dublin.

<i>Figure 1.1</i>		<i>THE LIST OF RESPONDENTS</i>	
<i>Respondent</i>	<i>Ref</i>	<i>Category</i>	
ESAT Telecom	1	Service provider	
Conduit	2	Directory assistance service provider	
BT	3	Service provider	
Transaction Network Services	4	Service provider	
Edward Rafferty	5	User	
Zockoll Group	6	Service provider	
Telecom Eireann	7	Incumbent fixed and mobile operator	
Richard Barry	8	User	
Cuffley Communications	9	UK consultant	
Joe Ryder	10	User	
NI ACT	11	Northern Ireland's telecommunications user committee	
Ericsson	12	Equipment and software supplier	
ESAT Digifone	13	GSM network operator	
C&W Ireland	14	Service provider	
ITL	15	Service provider	
Stentor	16	Service provider	
IDA	17	Irish industrial development agency	
Forfas	18	Irish industrial policy agency	
Softech Telecom	19	Software supplier	

This document contains decisions on general principles for numbering arrangements, short term issues, and issues related to the long term development of the plan, as follows:

- general principles for developing numbering arrangements in Ireland. There is broad consensus on these principles, which are set out in Chapter 2
- short term issues. Many of these must be resolved almost immediately in preparing for full liberalisation of telecommunications in December 1998. The Director is now in a position to make firm decisions on most of these issues. These decisions are set out in Chapter 4 (on future use of the numbering plan) and in Chapter 5 (on numbering administration issues)
- issues related to the long term development of the Irish plan. These are more contentious and complex but of central importance to Irish telecommunications. We set out the ODTR's views on these issues in Chapter 3. The Director intends to reach firm conclusions following further consultation during the next few months.

To deal with this last set of issues (and some short term issues) the Director has decided to establish an interim Task Force on Numbering. The Task Force will:

- draw its members from, inter alia, those responding to the consultative document with significant but sometimes conflicting views, and it will include consumer representation
- take at most three months to examine and provide its views on the short term issues, and separately on the long term development of the plan
- be chaired by the ODTR.

It is important to see the work of this group in context. The numbering scheme is only one of several related issues on which the Director will take initiatives in the near future in preparing for competition. Others include:

- work to define a programme for the introduction of number portability services. The timing of this programme will be significantly affected by the requirement for local number portability by January 2000.
- work to define service and competition issues which are associated with the implementation of carrier selection mechanisms
- work to decide on procedures for exchange of directory assistance information and for providing directory assistance services in a competitive environment.

Given the Government's recent decision to bring forward the date of liberalisation from January 2000 to December 1998, the Director is deciding now on priorities and procedures for dealing with these issues.

In the context of liberalisation in particular, the Director is concerned to ensure that there is an adequate supply of numbers for new services, new customers, and new service providers. The following areas will need to undergo number change in the short term, to ensure adequate capacity: Drogheda, Dundalk, Cavan, Ennis, Tralee, and parts of Cork. When implementing these changes, the ODTR will aim to avoid subsequent changes in the same areas in future.

## 2. Principles for number plan development

### 2.1 The factors to consider in developing the plan

In Chapter 3 of the consultative document the ODTR proposed to consider five main factors when developing the current plan. These were:

- the need to ensure an adequate supply of numbers at all times
- the need to make the plan as user friendly as possible
- the need to give competing service providers equal access to numbering resources
- the need to minimise disruption to users when changes are made
- the need to keep the costs of all changes to a minimum for service providers.

Annex A describes these factors in detail. Respondents were unanimous in their support for the ODTR using these 5 factors when deciding how best to develop numbering arrangements. In addition several made the point that the top priority is to ensure an adequate supply of numbers at all times.

*The ODTR will be guided by these factors in determining the development path of the numbering plan. The ODTR will also aim to minimise the extent of number changes to customers. Any short-term changes must be designed, wherever possible, to avoid further changes. Section 4.1 discusses this issue further.*

### 2.2 Preserving information to the caller in the leading digit

In Section 4.3 of the consultative document the ODTR made the point that the leading digit of the nationally significant number provides a clear indication to callers of whether they are calling a geographic or non geographic service and, if a geographic service, of the region called. It proposed to preserve this information in any development of the number plan.

Respondents gave strong support to this proposal. But there were qualifications:

- two respondents made the point that adding a leading digit would not *destroy* information for the caller in the number dialled. The ODTR takes the view that such a move would significantly *reduce* the information available by relegating the digit which carries much of the information to the second digit dialled
- others were concerned that strict application of this proposal would preserve too much space for geographic numbers.

*The ODTR will preserve the information in the initial digits of the current plan wherever sensible. But it will change the meaning of the initial digits if this is required, for example to create more non geographic NDCs.*

### 2.3 Rules for allocation of geographic numbering capacity

In Section 5.2 of the consultative document the ODTR proposed four principles for the allocation of geographic numbering capacity to service providers. All respondents commenting on these proposals gave them strong support and some additional suggestions were made.

*The Director will therefore adopt the following principles:*

- *geographic NDCs will have national significance rather than be associated with a particular service provider*
- *the Director will define the geographic area which each NDC will number and publish maps defining these areas. Initially these areas will correspond to existing NDC areas in the current numbering scheme*
- *the Director will allocate blocks of 1,000 numbers<sup>1</sup> or blocks of 10,000 numbers<sup>2</sup> to service providers in each geographic area, from the numbering space behind the relevant NDC*
- *all service providers will simultaneously implement any numbering changes which are required*
- *all service providers will be required to route calls which are dialled using the full nationally significant number, even if they are local calls*

### 2.4 Rules for allocation of non-geographic numbering capacity

In Section 5.4 of the consultative document, the ODTR proposed three general guidelines for the allocation of non-geographic numbering capacity to service providers. At the same time it recognised that, in certain areas such as the numbering of cellular mobile services, the current plan does not yet follow these guidelines. This is discussed in section 4.3.

Again respondents expressed strong support for the proposals.

*The Director will adopt the following principles:*

- *NDCs for non geographic services should have national significance*
- *service providers should receive number blocks for each non geographic service from the space behind the nationally significant NDC*
- *service providers should use these blocks to provide numbers with a common total number of digits (NDC plus subscriber number).*

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<sup>1</sup> Where there are 5 digit subscriber numbers

<sup>2</sup> Where there are 6 or 7 digit subscriber numbers



### **3. Long term development of the numbering plan**

#### **3.1 Assessment of long term demand for numbers**

The ODTR made an assessment of long term demand for non-geographic numbers in Section 4.5 and Annex C of the consultative document. It then asked the respondents for their reaction.

Respondents made a number of points in their submissions:

- there is strong support (with the notable exception of Telecom Eireann) for the ODTR's assessment that the 8X NDCs are, on their own, insufficient to meet future demand for non-geographic NDCs
- there is however a need to do further work to quantify the possible long term demand for numbers - both geographic and non-geographic
- there was not enough emphasis in the consultative document on the effect which new, and as yet undefined, services might have on numbering. This might include requirements for numbering broadband, multimedia, UMTS and voice over IP services.

*The ODTR recognises these points, which will need to be considered further by the Task Force on Numbering when it considers the long term development of the numbering plan.*

The new liberalisation date of 1 December 1998 will place accelerated and challenging demands on the numbering scheme, with a resulting limitation of the options available to alleviate them. This affects the choices available for long term development of the plan. Those choices are discussed further in Paragraphs 3.2 and 4.1.

#### **3.2 Options for long term development of the plan**

In Section 4.6 of the consultative document the ODTR put forward two main proposals for long term development of the numbering plan:

- *Option A* continues with the current plan. It retains existing geographic NDCs, lengthens subscriber numbers behind these NDCs to create additional capacity as required, and uses the NDCs 3X and 8X for non-geographic services
- *Option B* leads to closure of the current plan. Users then dial 8 digit geographic numbers and 9 digit non-geographic numbers for all calls. Use of local dialling and trunk prefixes disappears. NDCs 8X, and 7X or X0 are used for non-geographic services.

Essentially Option B offers uniform number length and a single dialling procedure; Option A offers minimum disruption.

Not surprisingly respondents gave different weights to the differing advantages of the two options:

- four respondents, including Telecom Eireann, favour Option A. They believe that the advantages of Option B do not merit the significant disruption to users which would be involved
- ten respondents favour Option B on the grounds that its long term simplicity and ease of use outweigh the disruption involved in reaching it

- some service providers favoured Option B in the belief that the changes required could be implemented before full liberalisation. The ODTR is of the view that this is not possible, even if the previous date for liberalisation of January 2000 remained. Reaching Option B would require number changes to be implemented, which could not be completed before January 2000.

Most respondents feel that Options A and B between them cover the most promising development paths for the numbering plan adequately. There are two exceptions. One respondent suggests following the UK approach of adding an additional leading digit; another suggests moving to a 10 digit open plan similar to the old North American numbering plan.

The new liberalisation date means that we must give priority to ensuring an adequate supply of geographic numbers in a short time frame. The actions required to do this will lead to 9 digit geographic numbers in certain hot spots within the plan. This does not affect the retention of Option A. But it means that we must modify Option B. Under this new Option B<sup>+</sup> users dial uniform 9 digit numbers for calls to both geographic and non geographic services. In contrast under the old Option B the user dials uniform 8 digit numbers to call geographic services and uniform 9 digit numbers to call non geographic services.

The ODTR itself currently believes that the new Option B<sup>+</sup> rather than Option A, best meets Ireland's needs to build a strong information economy for the 21<sup>st</sup> Century. But some additional work remains to be completed before a final decision can be taken to implement Option B<sup>+</sup>.

*The Director will therefore:*

- *request the Task Force on Numbering (as described in Chapter 1) to consider the matter further and report before the Director takes any final decision*
- *make an assessment of long term demand for numbers and carry out further work to examine the benefits of Option B<sup>+</sup> for users. The ODTR will then provide its findings as input to the Task Force.*

*The ODTR does not favour expanding the plan using the UK approach of adding a leading digit (for the reasons set out in Section 2.2). Nor does it favour an open 10 digit plan along the lines of the North American Numbering Plan. The ODTR believes that such a move would involve significantly more disruption than that required for Option B<sup>+</sup> without corresponding additional benefits.*

### **3.3 The timing of the decision on the long term option**

In Section 4.7 of the consultative document the ODTR raised the issue of when to take a decision on the choice of long term options. Most respondents want an immediate decision followed by speedy implementation. This reflects a strong desire for a firm plan and for certainty in the numbering area.

The Director has strong sympathy with these views and has taken decisions to implement as much as possible, having regard to the advanced date for liberalisation.

*With these factors in mind the Director has decided:*

- *to define and implement those specific short term number changes required for liberalisation as a matter of extreme urgency*
- *to seek to ensure that these short term changes are implemented in a manner that will minimise any further requirement for future number changes if Option B<sup>+</sup> is implemented*
- *to take a decision on which option to implement at an appropriate but early date*
- *to preserve migration paths to both Options A and B<sup>+</sup> in the meantime.*

### **3.4 NDCs for non-geographic services**

There is strong agreement<sup>3</sup> with the ODTR's assessment that the 8X range is, on its own, inadequate to provide a sufficient future supply of distinctive NDCs for numbering non-geographic services. But what new range should be used in addition?

Respondents strongly favour use of the 7X range of NDCs to provide this additional capacity. They argue that such a choice:

- offers a clear and logical grouping of non-geographic NDCs (7X and 8X)
- minimises disruption for users when recovering these NDCs from their current use (as compared with recovering the 9X or X0 ranges).

But these respondents also largely favour Option B in the long term. If Option A were selected instead, then 3X is the obvious additional range of NDCs to use for non-geographic services, as this range is currently unused. The 7X range is currently used for numbering geographic lines in the North West of Ireland (i.e. in Counties Donegal, Leitrim and Sligo).

*With this analysis in mind the ODTR proposes to:*

- *use the 7X range for non-geographic NDCs if Option B<sup>+</sup> is chosen. It will begin recovery of this range as soon as any decision is taken in favour of Option B<sup>+</sup>, but not before*
- *use the 3X range for non-geographic NDCs if Option A is chosen.*

*There may be a case for recovering the 7X range for non geographic numbering, whichever option is chosen. The ODTR proposes that the Task Force on Numbering should consider this point in its work. Annex C describes one method by which the 7X NDCs could be recovered for non-geographic use.*

*The ODTR does not favour a move to expand 2 digit NDCs in the 8X range to three digit NDCs, as two respondents suggest. Such a move would lead to a less uniform numbering plan and rule out the migration paths to both Option A and Option B<sup>+</sup>.*

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<sup>3</sup> As indicated in Section 3.1 of the consultative document

## 4. Short term issues – use of the numbering and dialling plan

### 4.1 Ensuring adequate geographic numbering capacity for liberalisation

It is clearly vital that there should be enough 10,000 and 1,000 number blocks available for the ODTR to allocate to new entrants, in readiness for liberalisation in December 1998. In that respect, in Section 4.4 of the consultative document, the ODTR highlights eight risk areas<sup>4</sup> which require detailed investigation and immediate action.

*Given the urgent need to ensure adequate capacity for the liberalised environment, the Director has decided that numbers in the following areas will need to be changed immediately, to provide additional capacity:*

- NDC 41, Drogheda and Ardee
- NDC 42, Dundalk, Carrickmacross, and Castleblayney
- NDC 49, Cavan, Cootehill, Oldcastle, and Belturbet
- NDC 65, Ennis, Ennistymon, and Kilrush
- NDC 66, Tralee, Dingle, Cahirciveen, and Killorglin
- NDC21, Parts of Cork and Coachford<sup>5</sup>
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*These changes, which are required to provide additional capacity for use within the new timescales, are explained further in Annex B.*

### 4.2 The use of minimum numbering areas

In Section 5.3 of the consultative document the ODTR proposed the use of **minimum numbering areas** as basic building blocks for geographic numbering in a liberalised multi-operator environment. These minimum numbering areas would have national significance and all service providers would have to use numbers from blocks allocated to a given minimum numbering area to number subscribers located in that area.

Respondents strongly support the minimum numbering area concept but offer a range of views on how best to define it. Some want to use the NDC as the minimum numbering area, some prefer the Telecom Eireann charge group area and others would like even smaller areas. There was concern among several respondents at the idea of using the Telecom Eireann charge groups as minimum numbering areas. They believed that this would restrict their retail tariffing options.

Taking account of the consultative procedure the ODTR has reached the following conclusions:

- minimum numbering areas are essential in a multi operator environment as a way of preserving information in the geographic scheme. This is important for charging purposes. The minimum numbering area should be no bigger than the NDC
- the exact size of the minimum numbering area is a matter of balancing the requirements of service providers for tariffing flexibility against the requirement to use the numbering plan efficiently. To maximise tariff flexibility the minimum numbering area should be as small as possible. But small minimum numbering areas lead to low utilisation of numbering space and a greater requirement for expansion of the numbering plan. This in turn would lead to major disruption for users and service providers. The ODTR

<sup>4</sup> Dundalk (NDC 42), Tralee (66) Cork (21), Drogheda (41), Cavan (49), Ennis (65), Sligo (71), and Letterkenny (74)

<sup>5</sup> Numbering changes will also be required in the Midleton and Kinsale areas; however they will not commence before July 1999.

believes that using minimum numbering areas which correspond to the existing numbering areas strikes a good balance between these two conflicting requirements

- use of minimum numbering areas does not unduly restrict the tariffing freedom of service providers. Entrants are free to aggregate together minimum numbering areas in whichever way they wish, to define their local charge areas
- defining minimum numbering areas is an urgent task which must be completed before liberalisation. The easiest way to achieve this is to use the current charge groups as they now exist
- minimum numbering areas form natural domains within which to offer geographic number portability.

*Given this analysis the Director has decided to:*

- *define the minimum numbering areas as corresponding to the existing numbering areas*
- *publish details of the boundaries of these minimum numbering areas before November 1998*
- *restrict, at least for the time being, local number portability to the minimum numbering area*
- *ask the Task Force on Numbering to examine whether any of the existing numbering areas should be adjusted or re-defined.*

### **4.3 Numbering of cellular mobile services**

The ODTR used the consultative document to seek views on the future of numbering for cellular mobile network services.

Respondents focused their comments on the proposal to move all cellular numbers to a single NDC<sup>6</sup>. They are divided on this issue. Most support it. But three (including Eircell and Digifone) oppose it. There is also a general view that number portability for mobile services requires a separate study.

*Given the feedback from respondents the Director has decided:*

- *to allocate the NDC 85 for use by the third mobile operator*
- *to decide in principle in favour of a move to a single NDC*
- *to reserve NDC 84 as an option for this move*
- *to review the decision in principle when the implementation plan for full mobile number portability is finalised.*

### **4.4 Numbering of freephone and shared cost services (18XX)**

Respondents strongly support the proposals made in the consultative document on the numbering of freephone services. But some respondents are concerned that the proposals do not consider how best to protect the integrity of the fixed network against overload by

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<sup>6</sup> Once operator number portability is introduced for mobile services

“bursty” freephone applications<sup>7</sup>.

*Given this support the Director has decided to:*

- *continue to use 1800<sup>8</sup> to number freephone services*
- *take control of the 0, 1, 8 and 9 subscriber number ranges immediately, and open the 8 and 9 ranges for allocation to service providers other than Telecom Eireann*
- *initiate actions leading to the introduction of number portability between freephone service providers and between shared cost service providers*
- *develop approaches for dealing with “bursty” traffic and put its proposals to the Task Force on Numbering.*

The ODTR is also examining the issue of equal access to freefone and shared cost services for Telecom Eireann and other service providers, and considering limiting the number ranges available to Telecom Eireann for new allocations, until number portability is introduced.

#### **4.5 Numbering of premium rate services**

Respondents are much less supportive of the ODTR's proposals for premium rate service numbering. In particular there is a significant majority against retaining 15XX numbering and in favour of using the 900 flag. Respondents argue, quite correctly, that there is a strong international trend towards the use of this flag.

The ODTR accepts this point. It sees two options for change:

- numbering premium rate services using the initial digits 190X (and moving customer support services which currently use these codes to some other part of the 1XX dialling space)
- numbering premium rate services using the NDC 90X.

*The ODTR proposes that the Task Force on Numbering should discuss how best to move premium rate services to a 900 flag before the Director takes any final decision.*

#### **4.6 Numbering of universal access and personal numbering services**

There was limited response to the ODTR's proposals on how best to number universal access and personal numbering services. Those who did respond support the ODTR's proposals.

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<sup>7</sup> Such as disaster relief appeals using freephone numbers

<sup>8</sup> also 1850, and 1890 for shared cost services

*The Director has therefore decided:*

- *to provide numbering resources for **personal numbering services** as follows:*
  - *to allocate the NDC 700 for personal numbers and reserve 70X NDCs for similar services*
  - *to require service providers to use six digit subscriber numbers behind the NDC 700*
  - *to divide the one million subscriber numbers into 100 blocks of 10,000 numbers. This will provide personal numbers for up to 100 different service providers.*
  - *to take account of efficiency of use, adequacy of supply and fair distribution of memorable or DREAM<sup>9</sup> numbers when deciding how to allocate and distribute personal numbers to rival service providers.*
- *to use the three digit NDC 818 followed by six digit subscriber numbers for the **universal access service**. Similar allocation procedures will apply as for personal numbering.*

#### **4.7 A maximum charge for non geographic services**

In Section 5.4 of the consultative document the ODTR proposed to set a maximum charge for calls to freephone, shared costs, premium rate, personal numbering and universal access services.

This proposal was misunderstood by many respondents. Some thought that the proposal would constrain the *total* price of each service rather than the *component of the price paid by the caller*. Not surprisingly these respondents were concerned that the proposal would constrain their commercial freedom and hence price competition. Others thought that the proposal was to introduce a single price ceiling on all non geographic services rather than a series of ceilings for individual services.

*With these clarifications in mind the Director has decided:*

- *to set a maximum charge for callers in Ireland to freephone, shared costs, personal numbering and universal access services. These are all services in which a component of the total charge is not paid by the caller*
- *to develop proposals for the level of these maximum charges, in consultation with the Task Force on Numbering*
- *to consult the Task Force on Numbering and the Regulator of Premium Rate Services on how best to protect premium rate service callers from excessive and unexpected charges.*

#### **4.8 Short codes as a scarce and co-ordinated resource**

Respondents strongly support the ODTR's proposals<sup>10</sup> to treat short codes as a scarce resource and to require access network operators to use them in a co-ordinated way. But several respondents are concerned that the provision of network unique codes might, in future, prove inadequate.

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<sup>9</sup> Desirable, REcognisable, Attractive and Memorable

<sup>10</sup> Made in Section 5.5 of the consultative document

*With these responses in mind the Director has decided:*

- *to restrict the purposes for which 1XX short codes are used. Assessment criteria include:*
  - *national importance e.g. emergency services*
  - *high call rate e.g. directory enquiries*
  - *required to successfully complete call e.g. carrier selection*
- *to require service providers which fail to meet the ODTR's assessment criteria for short codes to use full length numbers (e.g. freephone numbers) instead*
- *to give most short codes national significance, and require operators of all access networks to use them in the same way*
- *to designate a restricted number of 1XX short codes as Network Unique. Currently the codes 172, 173 and 174X have this status. Access network operators will be able to use these codes for varying applications on their own networks*
- *to review the need to expand the supply of network unique short codes from time to time*

#### **4.9 The form of carrier selection codes**

Respondents gave strong support to the use of carrier selection codes of the form 13XXX<sup>11</sup>. But a significant number oppose the idea of a two tier system of four and five digit codes. They argue that such a proposal:

- would lead to user confusion because of non-uniformity of short code length
- could lead to unfair discrimination against those with five digit codes.

They go on to argue that use of uniform five digit codes ensures an adequate supply of carrier selection codes but does not impose an unnecessary burden on callers.

*The Director accepts these arguments, and has decided:*

- *to use uniform five digit carrier selection codes of the form 13ABC*
- *not to allocate codes in which C = 0. This will help avoid user confusion over where the carrier selection code ends and the trunk or international prefix begins*
- *not to allocate codes in which A=9, to preserve options for expansion of the supply of carrier selection codes*
- *to immediately begin allocation of these codes to be used to provide carrier selection and carrier access (See document ODTR 98/18).*

#### **4.10 The form of directory assistance codes**

Respondents are generally supportive of the idea of moving in an orderly way from 119X for directory assistance services to short codes starting with 118. But again some argue for the use of uniform five digit codes of the form 118XX rather than a mix of four and five digit codes. They point out that:

- there is a trend in Europe to uniform five digit codes
- uniform codes minimise user confusion

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<sup>11</sup> As described in Section 5.6 of the consultative document



- uniform codes encourage competition in directory assistance services. They do not discriminate against the independent directory assistance service providers (with a five digit code) and in favour of the access network operator providing directory assistance services (with a four digit code).

*The Director accepts these arguments and has decided to:*

- *introduce five digit codes of the form 118XX for directory assistance access as soon as it is practicable*
- *withdraw the use of the existing 119X code after a period of parallel running between the new and old systems of at least 12 months*
- *ask the independent Task Force on Numbering to examine how best to allocate the codes. For example should users be able to dial a memorable default code (such as 11811) to access the directory assistance services of their access network operator or should users always dial the directory assistance service provider of their choice?*

#### **4.11 The Northern Ireland access code**

In Section 5.9 of the consultative document the ODTR proposed to retain the Northern Ireland code but to change its value from 080 to the short code 128.

Respondents strongly supported the idea of retaining the short access arrangement but were divided roughly equally on whether to use the 128 code or a free NDC. Those in favour of a free NDC argue that:

- calls to Northern Ireland should, as far as possible, look like long distance national calls
- the code chosen should not confuse callers who are also using carrier selection codes.

*The Director is persuaded by these arguments and has decided to:*

- *change the Northern Ireland access codes from 080 to a free NDC*
- *choose the NDC 48. This NDC conveys the right geographical information to users (since the 4X NDC areas are adjacent to Northern Ireland) and does not prejudice recovery of the 7X for non geographic NDCs (as the free NDC 76 would)*
- *implement the changes to coincide with the UK's renumbering of Northern Ireland*
- *require operators to provide additional access to Northern Ireland using the international prefix and UK country code (00 44).*

#### 4.12 Number portability and its impact on numbering

The ODTR intends to initiate work to ensure availability of number portability services in the year 2000. To do this the ODTR will:

- commission an independent study on the technical and regulatory aspects of number portability
- when this study is complete, establish a working group to focus on number portability.

This initiative will affect numbering as discussed in Section 5.7 of the consultative document. In this section the ODTR proposed to restrict portability of geographic numbers to within the minimum numbering area so as to preserve information on the location of the called party. Respondents support this idea in principle but are divided on the degree of restriction that should be imposed:

- one respondent wants portability restricted to the same location i.e. operator portability but no geographic portability
- one respondent wants portability restricted to the area served by each of Telecom Eireann's local exchanges
- two respondents want portability restricted to the NDC area
- most support the ODTR's proposal.

*Given these responses the Director has decided to implement the proposal restricting portability of geographic numbers to the minimum numbering area. She will however review this decision in principle when the implementation plan for local number portability is finalised.*

## **5. Short term issues – numbering administration**

### **5.1 National numbering conventions**

All respondents strongly endorse the ODTR's proposal<sup>12</sup> to establish clear and transparent national numbering conventions. There was general agreement that the ODTR should finalise such conventions as soon as possible after further consultation.

*With these responses in mind the ODTR will:*

- *draft national numbering conventions as soon as possible and distribute them to interested parties for detailed comments*
- *base its draft on the topics listed in Figure 5.1, on recently published ETO guidelines, and on other existing national numbering conventions such as those of the UK*
- *issue a final set of national numbering conventions as soon as possible*
- *ensure that all services providers (including Telecom Eireann) follow these national numbering conventions.*

### **5.2 Central allocation of numbers**

In Section 5.7 of the consultative document the ODTR proposed to further investigate the possibility of moving to a system of central allocation for individual numbers. There is general support for this proposal - provided it is restricted to services such as freephone and shared cost services and not extended to PTSN or mobile services.

*The ODTR will study the idea of central allocation further. Initially it will focus on freephone and shared cost services. It will start work once plans for number portability between the freephone service providers are developed.*

### **5.3 Charging for numbers**

Respondents had mixed reactions to the idea of charging for numbers, with some against, some in favour of charging to cover the ODTR costs in administration, and some in favour of charging as an aid to effective allocation of numbers.

*After studying the responses the ODTR is encouraged in its belief that there is merit in the idea of charging for numbers, and will consider this matter further when developing application procedures for number allocations.*

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<sup>12</sup> Sections 6.1 and 6.2 of the consultative document

**Figure 5.1**      *The proposed scope of the National Numbering Conventions*

- Conditions of use for numbers and short codes e.g.
  - the purpose for which numbers behind each NDC can be used
  - the purpose for which short codes can be used
  - the number lengths allowed behind each NDC
  - the definition of NDC areas and Minimum Numbering Areas
  - restrictions on portability of numbers
  - withdrawal and change of numbers
  
- Guidelines on when to allocate short codes rather than subscriber numbers
  
- Applying for numbers
  - the application process and fees
  - the information required in making an application
  - the grounds for rejecting an application
  - the timescales for dealing with an application
  - the reservation of numbers
  
- Responsibilities for notification of bringing numbers into service
  
- The rights of end users and service providers to use numbers and number blocks
  
- Audit information required from service providers
  
- Standards for alpha-numeric keypads
  
- Standards for use of \*# service codes
  
- Mandatory dialling procedures e.g. requirement for service providers to complete:
  - local calls dialled using the full national number
  - calls to Northern Ireland using either the UK country code or the NI access code
  
- Requirements on the ODTR to publish the use of the dialling and numbering plan
  
- The process for revising the National Numbering Conventions

**5.4 Resolving future numbering issues**

There is strong support for the ODTR’s proposals, as set out in Section 6.4 of the consultative document, for resolving future numbering issues. But in addition several respondents feel that there is a need for a permanent Numbering Advisory Group made up of numbering experts which the ODTR will consult on a regular and informal basis.

*The ODTR therefore intends to:*

- *consult with the telecommunications industry and users on all major issues. These will include any review of the numbering plan or of the National Numbering Conventions. The ODTR will normally institute this formal consultation by issuing a consultative document and then seeking written responses.*
  
- *consider the need for a **permanent** Numbering Advisory Group when the **interim** Task Force on Numbering has completed the tasks specified for it in this Decision Notice.*

## 6. The way forward

We summarise below the program of actions which the ODTR proposes to initiate as a result of the consultation process. We list actions and timescales for the ODTR in Figure 6.1 and actions and timescales for the Task Force on Numbering in Figure 6.2.

**Figure 6.1**      *Action programme for the ODTR*

<i>Action</i>	<i>timescales</i>
Implement number changes to relieve hot-spots before liberalisation	Immediate
Start issuing carrier access/selection codes of the form 13ABC	Immediate
Publish boundary details for minimum numbering areas	before 10/98
Recover 0, 1, 8 and 9 ranges of freephone, shared cost and premium rate service number ranges (18XX and 15XX) from Telecom Eireann, and commence allocation to new service providers	Immediate
Establish a Task Force on Numbering to: <ul style="list-style-type: none"> <li>- deal with unresolved short term issues</li> <li>- analyse and discuss the best long term option</li> </ul>	Immediate
Designate NDC 818 for Universal Access service numbering, and commence allocations	Immediate
Designate NDC 700 and reserve 70X for personal numbering services, and commence allocations	Immediate
Reserve NDCs 84 and 85 for mobile numbering	Immediate
Define and launch concurrent initiatives on number portability and carrier selection	Immediate
Define and launch initiatives on Directory Assistance issues arising from liberalisation	Immediate
Draft and issue national numbering conventions for detailed comment	As soon as possible
Publish finalised national numbering conventions	As soon as possible
Further examination of the merits of Option B <sup>+</sup> for the Task Force on Numbering	To be reviewed by the TFN
Develop allocation procedures for geographic numbers	3rd quarter '98
Issue geographic number allocations to new operators	Before 11/98
Start issuing directory assistance codes of the form 118XX	By 12/98
Require operators to migrate from 080 to 048 as the Northern Ireland access code	Co-ordinate timing with Northern Ireland number change
Review decision to restrict local number portability (NP) to the minimum numbering area	When NP plans finalised
Study central allocation of individual numbers for freephone and shared cost services	When NP plans finalised
Review the decision to move to a single NDC for mobile numbers	When NP plans finalised
Review need for a permanent Numbering Advisory Group	To be decided
Study in detail the proposal to charge for numbers	To be decided

**Figure 6.2 Action programme for the Task Force on Numbering**

<i>Action</i>	<i>timescales</i>
Discuss proposals for numbering freephone, shared cost and premium rate services which generate “bursty” traffic	Immediate
Discuss how best to move premium rate services from 15XX to use of the 900 flag	Immediate
Examine how best to allocate directory assistance codes to service providers and access network operators	Immediate
Decide on maximum charges to callers for freephone, shared cost, personal numbering and universal access services	Immediate
Provide advice on how best to protect premium rate service callers from excessive and unexpected charges	By 12/98
Analyse and discuss merits of Options A and B <sup>+</sup> and advise the ODTR on best long term development of the numbering plan	To be decided

## **Annex A      The five main factors to consider in developing the numbering plan**

### **1            Ensuring an adequate supply of numbers**

The numbering plan must ensure an adequate supply of numbers at all times to meet demand generated by:

- future growth in existing services e.g. new PSTN lines or the introduction of direct inward dialling
- new services, such as freephone and personal numbering
- new service providers.

It is also important that the plan should preserve options for simple expansion of numbering capacity by adding extra digits.

### **2            User friendly numbering**

User friendly numbering means that:

- users make greater use of telephone services and generate greater revenues for service providers
- users waste less time through misdials.

Research in other countries indicates that users want:

- simple dialling procedures
- uniform number lengths and standard number formats
- numbers which convey information to the caller, especially on the price paid and the type of service called.

In the past it was very important to make numbers as short as possible. But this is now of decreasing importance as networks are digitalised and the proportion of handsets with memory dialling and push button touch tone signalling increases.

### **3            Equal access to numbering resources**

Rivals to Telecom Eireann will need equal access to numbering resources if they are not to be disadvantaged in competing with the incumbent. This means a requirement for:

- independent and transparent administration of numbering resources
- identical dialling procedures and number lengths for all service providers competing to offer any given service
- an adequate supply of numbers and carrier access codes for new entrants.

### **4            Minimum disruption to users**

No-one likes their telephone number to change. But change is sometimes vital to ensure an

adequate supply of numbers. The cost to customers of number changes is substantial<sup>13</sup> but the cost of running out of numbers is considerably higher. Experience in other countries indicates that, when change is needed, users want:

- adequate advance notice of the change
- a period of parallel running in which both the old and new numbering arrangements work simultaneously
- a period of at least three months in which the network traps and deals with calls misdialed as a result of the change
- changes which last for at least 10 years before further change is required.

In addition users value the opportunity to keep their number when they change service provider or location through the use of number portability services.

## **5 Minimising the costs to service providers**

Number changes generate costs for service providers as well as users. Costs include modifying switches and support systems, trapping misdials and publicising the change. It is clearly desirable to keep these costs to a minimum. But it is also important to remember that these costs are likely to be much smaller than the costs of a change for users or the cumulative benefits of making the plan more user friendly.

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<sup>13</sup> In terms of changing stationery, and signs, reprogramming auto diallers, upgrading equipment, and learning the new dialling procedures.



## Annex B Number Changes to be Implemented Immediately

As described in section 4.1, number changes must be commenced immediately in some NDC areas, to ensure adequate capacity. The details of these number changes for the 41, 42, 49, 65, and 66 NDC areas is given below in figure B.1. In the 21 NDC area a two stage expansion process is required, with some customers experiencing a number change earlier than others.

The process will begin immediately, with the introduction of parallel working of new and old numbers. From July 20<sup>th</sup> 1999, calls made to the old numbers will be connected to a recording which will advise the caller of the new number. By the years ends 1999, the old numbers will have been recovered for reallocation.

A map showing all of the areas affected by the immediate changes is attached as figure B.4.

**Figure B.1 Numbering Changes**

<b>NDC</b>	<b>Numbering Area</b>	<b>Leading Digits of Current Numbers</b>	<b>New Prefix</b>
41	Drogheda	2, 3, 4, 7, 8	98
41	Ardee	5, 6	68
42	Dundalk	2, 3, 5, 7, 8	93
42	Carrickmacross	6, 90, 91, 92, 94, 98	96
42	Castleblayney	4, 95	97
49	Cavan	3, 6, 7	43
49	Cootehill	5	55
49	Oldcastle	4	85
49	Belturbet	2	95
65	Ennis	2, 3, 4, 61-69	68
65	Ennistymon	7, 81, 82, 84-89	70
65	Kilrush	5, 60, 80, 83	90
66	Tralee	2, 3, 4, 8	71
66	Dingle	5	91
66	Cahirciveen	7	94
66	Killorglin	6, 9	97

In the Cork area, a different method must be used to create extra numbering capacity, as these numbers are already 6-digit, and it is only possible to use a single digit prefix while remaining within the overall national maximum number length of 9 digits.

In this case a two-phase process must be used, with some customers experiencing a change earlier than others. Local numbers beginning with the digit 4 will first of all be prefixed and, when the leading digit 4 has been recovered, it will then be used to expand the length of the remaining numbers, as in Figure B.2.

**Figure B.2 Number Changes in the Cork Area****Phase 1**

<b>NDC</b>	<b>Numbering Area</b>	<b>Leading Digits of Current Numbers</b>	<b>Prefix</b>
21	Cork	40	2
21	Coachford	43, 33	7

**Phase 2**

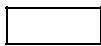
<b>NDC</b>	<b>Numbering Area</b>	<b>Leading Digits of Current Numbers</b>	<b>Prefix</b>
21	Cork	2, 3, 5, 8, 9	4
21	Midleton	6	4
21	Kinsale	7	4

Figure B.3 below shows an example of how a number in the Dundalk area will be expanded in length, and how the old number will be recovered for re-allocation. A similar process will be used in all areas where number changes will be implemented.

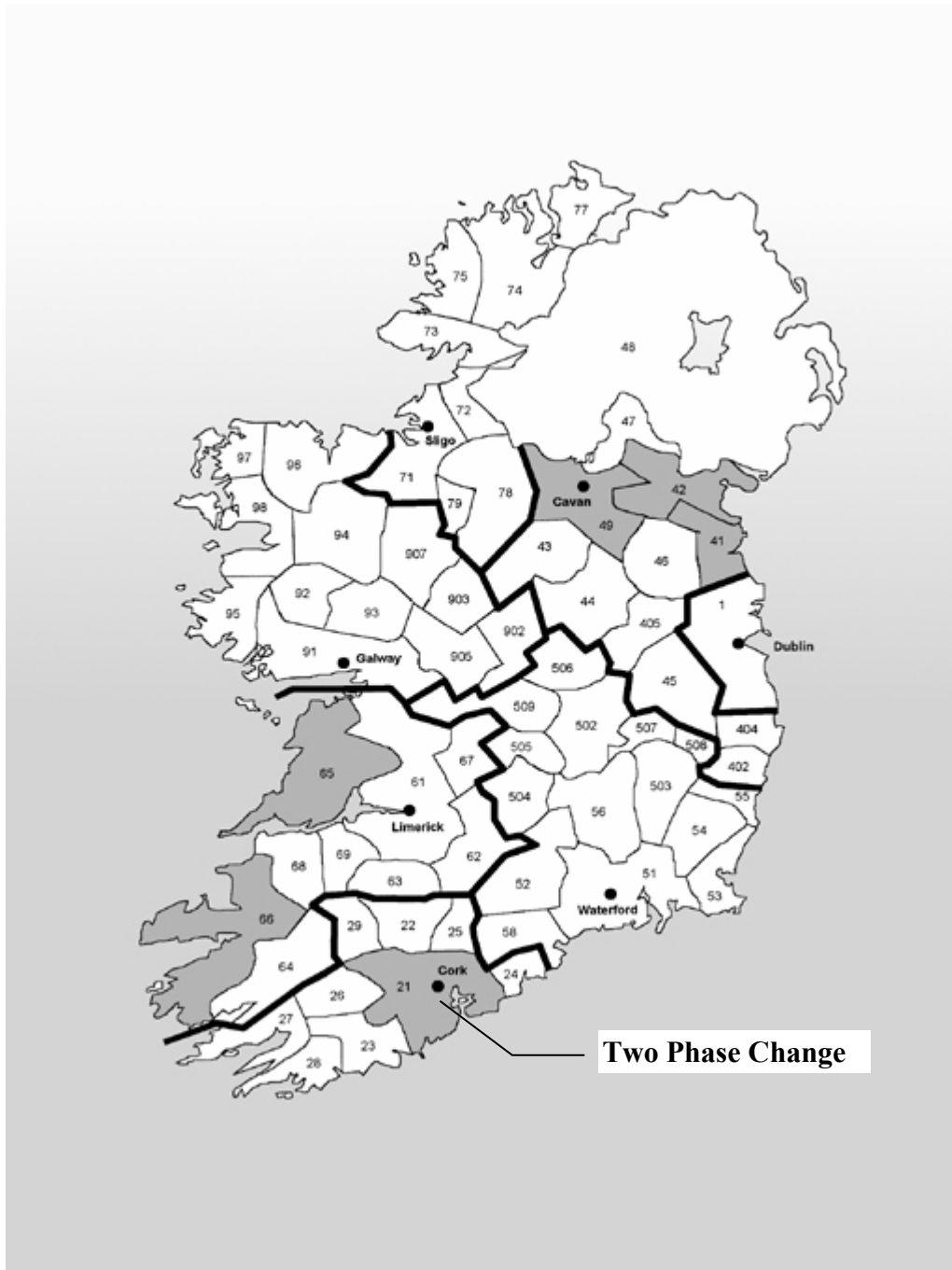
**Figure B.3 Example of Expanding Numbers in the Dundalk Area**

1	Current Allocations	042 23456	Current Customer Number
2	August 1998, a new number is introduced in parallel with the old, and the customer can be called by dialling either	042 23456	Old Customer Number
		042 9323456	New Customer Number
3	December 1998, calls to the old number are connected to a recorded announcement	042 23456	Recorded Announcement
		042 9323456	New Customer Number
4	From August 1999, the old number is recovered and available for reallocation	042 23456	Recovered Number
		042 9323456	Customer Number

Figure B.4. NDC AREAS WHERE IMMEDIATE NUMBER CHANGES WILL BE MADE



NDC area with number change



## Annex C      Recovery of the 7X NDCs

The following example shows one method by which the 7X NDCs could be recovered, by expanding the current 9X NDCs to cover the Western and North Western regions. There are several alternatives available for implementing this recovery, and these would need to be examined in detail before any number changes could be implemented.

The number changes in the following example would require two separate phases:

### *Phase 1 Recovery of Certain 9X NDCs*

- expand 91 NDC (Galway) to include Kilronan
- expand 92 NDC (Ballinrobe) to include Tuam, Castlerea, Ballaghaderreen, Castlebar, Claremorris, and Swinford
- expand 95 NDC (Clifden) to include Westport, Belmullet, Ballina

These changes, if implemented, would have the effect of substantially increasing the local dialling area for the new enlarged 91, 92, and 95 areas, and of releasing the 93, 94, 96, 97, and 98 NDCs for re-use.

### *Phase 2 Recovery of 7X, and 90X NDCs*

- replace the current 902, 903, and 905 NDCs with 96, which would include Athlone, Banagher, Roscommon and Ballinasloe
- replace the current 71, 72, 78, and 79 NDCs with 93 which would include Sligo, Ballymote, Manorhamilton, Drumshambo, Carrick-on-Shannon, and Boyle
- replace the current 73, 74, 75, and 77 NDCs with 94 which would include Donegal, Letterkenny, Lifford, Ramelton, Dungloe, and Bunrana.

The new numbering areas which result from the above example are shown on the attached map in Figure C.1.

*Figure C.1 Example of Recovery of 7X NDCs*

