

# Guide to the Danish Numbering Plan

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# 1. Introduction and background

The purpose of this Guide is to describe and provide details about the existing regulation and the practice adopted by the Danish Agency for Data Supply and Infrastructure (SDFI) in the numbering area. The Guide indicates key principles for SDFI's management of the numbering area and deals with a number of issues of general interest and also describes issues that are relevant only in special cases.

It should be emphasised that the Guide should not be seen as an exhaustive description of the problems that are relevant in the numbering area, but can be used as a tool for gaining a better insight into the most significant rules governing the management of numbering resources and other issues in the numbering area.

## *Target group*

The Guide is chiefly intended for telecommunications providers (referred to as providers in the following) in the Danish market, including foreign providers or providers who wish to establish themselves in the Danish market. The Guide may also be relevant to end-users or other private individuals who seek information about the management of numbers in Denmark.

The Guide is available in Danish here: <https://sdfi.dk/digital-infrastruktur/telefoni/numre/nummervejledning>

## 1.1 SDFI's administration of the numbering area

The Danish rules governing the numbering area are as follows:

- Act on Electronic Communications Networks and Services, cf. Consolidated Act No. 955 of 17 June 2022, in the following referred to as the Telecommunications Act, and
- Executive Order No. 1883 of 7 December 2020 on the Overall Danish Numbering Plan - in the following referred to as the Numbering Order.

Chapter III of the Telecommunications Act lays down the basic principles for the use and administration of numbering resources. These basic principles are reflected in the Numbering Order, which contains more specific rules for the area. In addition, the Telecommunications Act includes regulations on routing and porting<sup>1</sup> of numbers.

SDFI's administration of the overall Danish numbering plan covers the deployment, assignment, return, modification and withdrawal of number resources, including number series, codes and addresses.

When SDFI assigns numbering resources to providers, SDFI will specify a number of terms for using such resources. So it is also part of SDFI's administration to supervise compliance with the specified terms after the assignment, and SDFI is also in charge of the collection of number charges for using the resources assigned. In addition, SDFI is responsible for checking overall compliance with legislation governing the numbering area.

In the Numbering Order, the SDFI has determined the overall deployment of the Danish numbering resources, following the principles embodied in ITU's recommendations for the numbering area.

The rules of the Numbering Order about deployment of numbers etc. are applicable in two areas which together make up the overall Danish numbering plan. These two areas are the following:

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<sup>1</sup> Porting implies that the end-user can retain its subscriber numbers when changing to a new provider.

- the numbering used at the interface on accessing electronic communications networks (the national numbering plan for fixed-network and mobile communications<sup>2</sup>, and
- the numbering and addressing used at the interface between electronic communications networks (other numbering plans)<sup>3</sup>.

However, the rules of the Numbering Order do not apply to numbering and addressing in dedicated networks using their own numbering plans<sup>4</sup> (e.g. extension numbers in networks for internal communication in companies). Nor is the regulation applicable to the numbering used for addressing on the Internet, including domain names and IP addresses.

## 2. Introduction to the Danish numbering plan

The Danish numbering plan is a common, unique, closed and non-geographical numbering plan.

The plan is based on international standards and regulations for numbering in electronic communications networks, in particular ITU Recommendation E.164.

### *A common numbering plan*

That the plan is common to the networks implies that the numbers may in principle be reached from all subscribers in networks that use the numbering plan.

However, the exchange of traffic between networks will only be possible to the extent that the providers enter into interconnection agreements about this, and the content of such agreements might imply that certain services and numbers cannot be reached.

### *A unique numbering plan*

That the plan is unique implies that a given number has one application/one purpose only, no matter where the call is originated in the public electronic communications networks. For example, calls to 112 will always give free access to the emergency centres established by the authorities.

Another rule applicable to subscriber numbers is that calls to a given number will always go to the same user, no matter where the call is originated in the public electronic communications networks.

### *A closed, non-geographical numbering plan*

Basically, the Danish numbering plan is structured as a closed, non-geographical 8-digit numbering plan. There is no difference in the number of digits in a subscriber number for local or national calls (closed), and the numbers do not contain information indicating where in the country they are located (non-geographical).

### *Short codes and other categories of numbers*

The major part of the numbers in the Danish numbering plan are 8-digit, but there are also short codes to be used for special purposes. Short codes are numbers with three, four, five and six digits. Short codes are placed in the number series beginning with digits 0-1, while the 8-digit numbers are placed in number series beginning with digits 2-9.

Furthermore, the number series starting with 37 is allocated for 12-digit numbers to be used for M2M communication.

The 8-digit numbers can be divided into several categories.

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<sup>2</sup> Section 1(1), no. 1, of the Numbering Order.

<sup>3</sup> Section 1(1), no. 2, of the Numbering Order.

<sup>4</sup> Section 1(2) of the Numbering Order.

Within the 8-digit group of numbers, numbers have thus been allocated for freephone (80-numbers) and premium rate services (90-numbers).

In addition, a category of number series has been allocated for fixed-network communications, including fixed-network telephony, ISDN and IP telephony, and a category of number series has been allocated for mobile communications, including mobile telephony.

A third category of number series within the 8-digit group has been allocated as a reserve, either as extra capacity or for future expansion of the numbering plan.

You can read more about the individual categories of numbers in Annex 1.

### **3. Application for numbers**

To enable the Danish Agency for Data Supply and Information (SDFI) to deal efficiently with applications for assignment of numbering resources, it is important that SDFI should receive the necessary information from the applicant.

Below is a more detailed description of the application process, including the information to be given to enable SDFI to consider the application.

#### **3.1 Who can apply? – The provider concept**

The SDFI may assign numbering resources to any person who provides electronic communications networks or services on a commercial basis, and who requests to be assigned numbering resources<sup>5</sup>. In addition, the SDFI may assign numbering resources to USO<sup>6</sup> providers if special numbering resources have been allocated to meet the universal service obligation of the USO provider in question<sup>7</sup>.

SDFI does not assign numbering resources directly to end-users, including to major customers, service or content providers or to dedicated networks established directly by one or more end-users<sup>8</sup>.

The concept "commercial provider of electronic communications networks or services" is defined more specifically in the Telecommunications Act. Commercial providers are parties who, for commercial purposes, offer products or electronic communications networks or services governed by the Telecommunications Act as their main service or as a non-accessory part of their business<sup>9</sup>.

An electronic communications service is a service consisting wholly or mainly in electronic conveyance of communications in the form of sound, images, text or combinations thereof, by means of radio or telecommunications techniques, between network termination points, including two-way and one-way communications.<sup>10</sup> An electronic communications network is any form of wireless or cable-based infrastructure used for conveying electronic communications services<sup>11</sup>.

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<sup>5</sup> Section 24 of the Telecommunications Act and section 4(1) of the Numbering Order.

<sup>6</sup> USO: Universal Service Obligation.

<sup>7</sup> Section 4(2) of the Numbering Order.

<sup>8</sup> Section 4(1) of the Numbering Order.

<sup>9</sup> Section 2, no. 2, of the Telecommunications Act.

<sup>10</sup> Section 2, no. 9, of the Telecommunications Act.

<sup>11</sup> See section 2, no. 4, of the Telecommunications Act for a more specific definition.

An enterprise which as its main service or as a non-accessory part of its business makes an electronic communications network or an electronic communications service available to more than one party (e.g. other providers or end-users) will therefore fall within the commercial provider concept in case the provision is on a commercial basis.

The assessment as to whether an applicant is a commercial provider will be made in each individual case where this is deemed necessary in order to decide on a specific application for assignment of numbering resources.

SDFI may reject an application for assignment of numbering resources if a provider has an outstanding balance due to SDFI as a result of failure to pay number charges, irrespective of the type of numbering resources applied for, and irrespective of the type of numbering resources involved in such failure to pay number charges.<sup>12</sup>

### 3.2 What can be applied for?

Within the national numbering plan SDFI will assign 8-digit number series in blocks of 1,000 or 10,000 numbers. For example, number series 2598, 2599, 6988, 6989 and 8137 are assigned in blocks of 1,000 numbers. When assigning number series, SDFI will aim at an efficient use of numbers and an expedient structure with contiguous number series in the national numbering plan. In those cases where SDFI receives an application for assignment of number series of 1,000 numbers, SDFI will, as far as possible, avoid breaking up existing contiguous 100,000- or 10,000-number series, but instead assign numbers from already broken number series.

8-digit subscriber numbers with special charging are assigned in blocks of 100 or 1,000 numbers<sup>13</sup>. This applies to numbers in number series 801-809, 901-905 and 909<sup>14</sup>. 12-digit number series for M2M communication are basically assigned in blocks of 10,000 numbers.

Other numbers, addresses or codes (e.g. short codes, MNCs, DNICs or ADMD addresses) are assigned individually to the providers.

It is not possible to reserve or in other ways earmark numbers, number series, codes or addresses.

### 3.3 What information should SDFI have?

To enable SDFI to deal correctly with applications for numbering resources, the applicant must, as a minimum, submit the following information to SDFI.<sup>15</sup>

- The applicant's name (full name of company and any short name), address, telephone number, e-mail address and fax number (where relevant).
- The applicant's CVR number if the applicant is a Danish enterprise and the SE number if the applicant is a foreign enterprise.
- In case the invoicing address is different from the postal address, this must be stated.
- Contact person responsible, preferably with direct number, e-mail address etc.
- Description of the intended use of the numbers, number series and addresses applied for (qualitative and quantitative characteristics of the service).
- Expected starting date of the service.
- The desired date of assignment.

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<sup>12</sup> Section 4(10) of the Numbering Order.

<sup>13</sup> Section 5(1) of the Numbering Order.

<sup>14</sup> Sections 19-21 of the Numbering Order.

<sup>15</sup> Section 4(4) of the Numbering Order.

- Whether a specific non-assigned numbering resource is desired.
- How many vacant 10,000 number series of the same type the applicant has already been assigned at the time of application.
- How many vacant numbers of the same type the applicant has at the time of application (the 60% rule, cf. section 3.3.1).
- In case of applications for numbers to be used for data communications (section 25 of the Numbering Order) and for internal numbering, addressing and identification, the physical implementation address should also be stated.

The additional information to be given to SDFI for dealing with applications for short codes is described in further detail in section 3.3.2 below.

In addition to the information above, providers who have been assigned numbering resources are under an obligation to submit all information found necessary by SDFI for administration of the numbering regulation.<sup>16</sup>

### 3.3.1 Regarding the 60% rule for number series used

An application for assignment of 8- or 12-digit number series may be rejected if the applicant has not used 60 per cent of its previously assigned number series of the type applied for. This means for example that a provider who has been assigned 100,000 mobile numbers must demonstrate that 60,000 numbers of the 100,000 mobile numbers have been used before being able to apply for new mobile number series. It does not imply that providers must have used 60 per cent of each individual number series before new number series can be applied for.<sup>17</sup>

That a provider has put an assigned number series into use means, for example, that the provider has reassigned the right to use a number series to an end-user or another provider. A number series being put into use by a provider will also include cases in which the provider has sold prepaid phonecards to a retailer.

Applicants who have not used 60 per cent of the number series earlier assigned to the applicant of the type applied for, and who are exclusively applying for number series at the request of a specific major customer, must demonstrate in the application that it is only possible to meet the major customer's request by assigning the numbering series applied for - for instance because the customer wants numbers in a specific number series not available to the applicant, and that the number series to be assigned will be used efficiently.

### 3.3.2 Applications for short codes

If assignment of 3-digit short codes in the 11c-series<sup>18</sup> or 4-digit short codes in the 18cd-series<sup>19</sup> is applied for, certain additional information must be given to SDFI to enable SDFI to deal with the application since the usage of these short codes is restricted<sup>20</sup>. The additional information required is as follows:

- The service for which the short code is intended to be used.
- How many will have access to the service.

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<sup>16</sup> Section 73(1) of the Telecommunications Act.

<sup>17</sup> Section 4(9) of the Numbering Order.

<sup>18</sup> 3-digit short codes in the 12c-series can only be used for a combined access portal to public authorities, cf. section 15(2) of the Numbering Order,

<sup>19</sup> Sections 15 and 18 of the Numbering Order.

<sup>20</sup> Short codes can be used for the services that appear from section 22 of the Telecommunications Act and sections 15 and 18 of the Numbering Order.

- How frequently the service will be used.
- How large a proportion of the population is addressed by the service.

In case of applications for vacant short codes in the 116-series, it is necessary to include a detailed description of the service that the applicant intends to provide on the 116-number applied for. On the basis of the service description, SDFI will assess if the intended service can be provided within the scope laid down by the European Commission for using the specific 116-numbers, see the relevant Commission Decision and the Annex thereto<sup>21</sup>. For further information on how to apply for a 116-number, see section 4.3, and on terms for assignment of 116-numbers, see section 5.8. Furthermore, Annex 2 contains a specific description of the process in connection with reservation of new 116-numbers.

### 3.4 Submitting applications

Applications for assignment of numbering resources must be sent to SDFI via the application portal on [virk.dk](http://virk.dk). Here the provider's MitID Business Erhverv associated with its CVR number is used as a login. The application is subsequently received in SDFI's electronic administration system.

Foreign providers who do not have CVR numbers must submit their application via e-mail to [tele@sdfi.dk](mailto:tele@sdfi.dk).

### 3.5 Codes for trial service

It will be possible for providers to be assigned the following codes for trial service<sup>22</sup>: MNC-codes, and ISPC-codes.

When a provider applies to SDFI for assignment of a code for trial service, the applicant must also include a description of the specific purpose of the application for the code so as to enable SDFI to assess if there is a basis for assigning the code for trial service as applied for.

The assignment will be subject to terms requiring actual and efficient use of the code, with a consequent obligation to return it if not used for trial service. In addition, there will be terms requiring the use of the codes to be in accordance with international agreements, the national numbering plan and applicable national law.

To ensure that SDFI's assignment of codes for trial service is in conformity with ITU's recommendations<sup>23</sup>, any assignment for trial service will have a maximum duration of two years. The duration will be counted from the date of assignment. After expiry of this period, the codes assigned for trial service will automatically be returned to SDFI.

Codes for trial service will be subject to a reduced charge of 1/10 of the charge for ordinary codes. In case a provider, after expiry of the period of validity for codes assigned for trial service, wants to continue using the codes assigned, the provider must apply to SDFI to have assigned a new code of the same type. SDFI will then collect a charge equal to the full charge for ordinary codes. This will apply no matter if the provider continues to use the code for trial service or ordinary service.

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<sup>21</sup> The European Commission's Decision of 15 February 2007 (K(2007)249) as amended by the Commission's Decisions of 29 October 2007 (K(2007)698) and 30. November 2009 (K(2009)884).

<sup>22</sup> Section 4(3) of the Numbering Order.

<sup>23</sup> ITU Recommendation E.212 deals with the question of using MNCs for trial service and recommends a maximum assignment period of two years.



## 3.6 Administrative procedures and complaints

In considering the application, SDFI will take account of the provider's wishes to the greatest possible extent, and if any questions in connection with the application need clarification, SDFI will contact the applicant before making any decision.

On the basis of the application, SDFI will decide the extent to which the application can be met, and the specific numbers, number series, codes and addresses that may be assigned.

In choosing the specific numbers and number series in the numbering plan for fixed-network and mobile communications, it will be an important consideration to SDFI that the numbering plan should be able to "last as long as possible". To achieve this, large contiguous parts of the numbering plan should always be kept available to the maximum extent possible. In practice, this may mean that SDFI will need to reject applications for specific number series and indicate an alternative number series to accommodate this requirement.<sup>24</sup>

When new number series for the use of short codes are opened, SDFI, via public announcements, will invite providers to express any wishes for specific short codes. Where such wishes coincide, assignment will be based on a procedure of drawing lots arranged by the Notary Public.<sup>25</sup>

When 6-digit short codes in the 116-number series are deployed, SDFI will issue public announcements inviting applications for this to SDFI, including any deadline within which SDFI must have received the application. In case more than one application for the same number is received, and all applications live up to the requirements described in section 5.8, assignment will be based on a procedure of drawing lots arranged by the Notary Public.<sup>26</sup>

The public announcement about deployment of new number series for the use of short codes and deployment of numbers in the 116-number series will be made on SDFI's website [www.sdfi.dk](http://www.sdfi.dk) and possibly via other relevant media.

A decision by SDFI not agreeing with the applicant, i.e. a decision to reject an application wholly or in part, may be appealed to the Telecommunications Complaints Board, Secretariat, Nævnenes Hus, Toldboden 2, DK-8800 Viborg, phone: +45 72 40 56 00, e-mail: [tkn@naevneneshus.dk](mailto:tkn@naevneneshus.dk).

A complaint must be received by the Telecommunications Complaints Board not later than four weeks after the date on which SDFI made a decision in the matter.

It should be noted that under section 3(1) of Executive Order no. 383 of 21 April 2011 on the Activities of the Telecommunications Complaints Board, a fee of DKK 4,000 has to be paid for consideration of the complaint by the Telecommunications Complaints Board. The amount will be collected by the Secretariat of the Telecommunications Complaints Board.

## 4. Time limits

### 4.1 Application deadline

The Numbering Order contains a rule regarding the timing of applications for assignment of numbering resources.<sup>27</sup> Numbering resources can be applied for, at the earliest, three months

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<sup>24</sup> Section 5 of the Numbering Order.

<sup>25</sup> Section 6(1) of the Numbering Order.

<sup>26</sup> Section 6(2) of the Numbering Order.

<sup>27</sup> Section 4(8) of the Numbering Order.

before the resources are desired to be assigned. In case SDFI receives an application for numbering resources more than three months before the resources are desired to be assigned, the application will basically be rejected.

The reason for establishing this rule is the fact that scarce resources are involved, and one of the objectives to be met by the rules in the numbering area is to ensure efficient use of such scarce resources.

The rule applies to applications for all numbering resources included in the overall Danish numbering plan, i.e. both to short codes, 8-digit number series, 12-digit number series, codes and addresses.

## 4.2 Prioritisation in case of several applications for the same numbering resource

Applications for numbers, number series, codes and addresses will in most cases be subject to the rule that assignments are made according to the first come, first served principle.<sup>28</sup> Thus the applications will be given priorities according to the time they were received by SDFI.

If an application having a priority higher than other applications for the same code, number series, code or address has not been completed correctly or does not contain the necessary information, SDFI may set a deadline for the applicant to submit the missing information.<sup>29</sup> In practice, SDFI will set a deadline of two weeks in this connection.

In case SDFI has received an application that was given a second priority, this application will not be dealt with until expiry of the two weeks that the first applicant was allowed for submitting the missing information.

If the applicant having the first priority fails to submit the missing information within the two-week respite, the application may be rejected by SDFI. The application from the second-priority applicant will then be dealt with using the same procedure as mentioned above.

If the missing information is submitted within the respite allowed, but is not sufficient for SDFI to determine whether the numbering resources can be assigned, it may be possible, depending on the circumstances, to allow a further respite for submitting the information.

In case it is not possible to assign a provider the number series applied for, SDFI may suggest alternative number series that may be assigned to the provider.

## 4.3 SDFI's reviewing time

As soon as the application has been finally dealt with, the applicant will be notified in writing of the assignment.

SDFI will make a decision about an assignment not later than three weeks after reception of the application by SDFI or, if the application is not adequate, three weeks after reception of any

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<sup>28</sup> Section 6(3) of the Numbering Order.

<sup>29</sup> Section 6(4) of the Numbering Order.

missing information.<sup>30</sup> The reviewing time may be longer for dealing with applications for short codes etc.

## 5. Terms pertaining to assignment

A provider of electronic communications networks or services will be subject to the relevant provisions of the Telecommunications Act and the Numbering Order. The provider must also comply with the terms specified for the assignment<sup>31</sup>, see further details below.

Furthermore, the provider is responsible for the use of assigned numbers, number series, codes and addresses for which the provider has transferred the right of use to other parties<sup>32</sup>, e.g. by reassignment to a service provider.

Under the Numbering Order, SDFI is authorised to specify the following terms when assigning numbering resources:<sup>33</sup>

- Definition of the service for which numbers, number series, codes or addresses may be used as well as any requirements associated with the provision of such service.
- Actual and effective use of numbers, number series, codes or addresses.
- The latest date on which the resources must be put into use.
- Maximum period of validity, subject to possible modifications of the national numbering plan.
- Obligations according to relevant international agreements for the use of numbers, number series, codes or addresses.
- Use in accordance with the national numbering plan and applicable national law.
- Tariff principles and maximum prices for specific number series.

SDFI may revoke numbering resources in case of severe or repeated violations of one or more of the terms above<sup>34</sup>, cf. section 11.3 of the present Guide.

Below is a review of the various terms and a description of the practice adopted by SDFI in specifying such terms.

### 5.1 Use of numbering resources (what type of service)

Under SDFI's normal practice, all assignments of numbering resources are subject to terms requiring the assigned numbering resources to be used in connection with the company's provision of electronic communications networks or services.

Assignments of 12-digit number series in the 37-series are subject to terms requiring the assigned number series to be used only in connection with the company's M2M communication.<sup>35</sup>

As far as short codes are concerned, these are subject to additional requirements for a specific use and type of service to be provided on the assigned short code.<sup>36</sup> All assigned short codes

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<sup>30</sup> Section 4(11) of the Numbering Order.

<sup>31</sup> Section 21(1), no. 4, of the Telecommunications Act confers authority to specify rules about terms when assigning numbering resources. This authority is reflected in section 7 of the Numbering Order.

<sup>32</sup> Section 8(2) of the Numbering Order.

<sup>33</sup> Section 7 of the Numbering Order.

<sup>34</sup> Section 27 of the Numbering Order.

<sup>35</sup> Section 22 of the Numbering Order.

<sup>36</sup> Section 7(1) of the Numbering Order.

(e.g. short codes in the 11-series, 18-series and 116-series) are thus subject to specific terms as to what the individual short codes may be used for.

Example of terms of use for short codes:

Short code 118 may be used for providing the following services: An exhaustive directory offering information about all available telephone numbers, names and addresses in Denmark.

For example, short code 1813 is used for providing emergency phone service in the Capital Region of Denmark.

## 5.2 Actual and efficient use

SDFI may specify terms requiring actual and efficient use of assigned numbering resources.<sup>37</sup> In practice, these terms are not specified for all assignments of numbering resources, but are used in cases where SDFI, following a specific assessment, finds that such terms are necessary to ensure efficient use of the assigned numbering resources.

Example of terms requiring actual and efficient use:

The assignment is subject to the condition that the overall number series is actually used, thus ensuring efficient use of the numbering resources.

There are special conditions in relation to numbers in the 116-series, seeing that the individual 116-numbers have been allocated for use by one specific service. This implies that two different codes in the 116-series cannot be used for providing the same type of service. As a consequence, terms are always specified for actual and efficient use when assigning 116-numbers in order to reduce the risk that 116-numbers will remain unoccupied.

## 5.3 The latest date on which resources must be put into use

SDFI may specify terms about the latest date for assigned numbering resources to be put into use.<sup>38</sup>

In relation to such terms, SDFI's practice is to require that assigned numbering resources be put into use no later than six months after the date of assignment.

Whether the terms requiring resources to be put into use have been complied with will be checked for each individual number, number series, code or address assigned to the provider in question. In practice, SDFI will accomplish this by asking the provider, by the last date for putting resources into use, to document how a number, a number series, a code or an address is used more specifically.

## 5.4 Maximum period of validity

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<sup>37</sup> Section 7(2) of the Numbering Order.

<sup>38</sup> Section 7(3) of the Numbering Order.

SDFI has found that there is no general need for prescribing a maximum period of validity when assigning numbering resources. In practice, therefore, terms about this will only be used in special cases.<sup>39</sup>

However, when assigning codes for trial service SDFI will basically stipulate that the assignment of codes for trial service should be for a maximum period of two years.<sup>40</sup> Assignment of codes for trial service can also be made for a shorter period, depending on the information given by the applicant. The duration will be counted from the date of assignment. After expiry of this period, the codes assigned for trial service will automatically be returned to SDFI<sup>41</sup>. For further information about assignment of codes for trial service, see section 3.5.

## 5.5 Compliance with international agreements

When assigning numbering resources, SDFI may specify terms for complying with international agreements.<sup>42</sup>

In practice, SDFI will lay down general terms for all number assignments under which the use of numbering resources must comply with international agreements.

In special cases, where deemed relevant, SDFI will also lay down terms requiring specific international agreements to be complied with.

## 5.6 Compliance with the national numbering plan and national law

When assigning numbering resources SDFI may lay down terms prescribing that assigned numbering resources must be used in accordance with the national numbering plan and applicable national law.<sup>43</sup>

In practice, SDFI will lay down general terms for all assignments under which the use of numbering resources must comply with the national numbering plan and applicable national law.

## 5.7 Tariff principles and maximum prices

When assigning numbering resources, SDFI may lay down terms about tariff principles and maximum prices for specific number series.<sup>44</sup>

SDFI has found that there is no general need for including terms about tariff principles and maximum prices when numbering resources are assigned, but such terms may conceivably be used in special cases, for example where a need is found to exist for consumer protecting measures.

## 5.8 Terms pertaining to assignment of 116-numbers

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<sup>39</sup> Section 7(4) of the Numbering Order.

<sup>40</sup> ITU Recommendation E.212, on assignment of MNCs for trial service.

<sup>41</sup> The expiry date will appear from the letter of assignment.

<sup>42</sup> Section 7(5) of the Numbering Order.

<sup>43</sup> Section 7(6) of the Numbering Order.

<sup>44</sup> Section 7(7) of the Numbering Order.

As for the assignment of 6-digit short codes in the 116-series, the EU Commission's Decision<sup>45</sup> mentions certain general conditions to be attached to individual assignments of 116-numbers. These conditions are as follows:

- The service should provide information, or assistance, or a reporting tool to citizens, or any combination thereof.
- The service should be open to all citizens without any requirement of prior registration.
- The service should not be time-limited.
- There should be no payment, or payment commitment as a prerequisite for using the service.
- The following activities must be excluded during a call to the service: Advertisements, entertainment, marketing and selling, using the call for the future selling of commercial services.

For example, it will be contrary to the terms given above that a provider of a specific 116-service, as a condition for being able to make calls to the 116-number, requires users of the service to be members of an association or the like - including payment of a membership fee.

Under the European Commission's Decision, calls to 116-numbers should be free of charge. It follows directly from the Explanatory Notes to the Telecommunications Act that calls to 116-numbers must be free of charge to the end-user, and in this respect 116-numbers are thus on an equal footing with freephone numbers in the 80-series.

In addition to the general terms described above, terms may be specified for the individual numbers in the 116-series. Where relevant, these will appear from the Annex to the Commission Decision. The Annex applicable from time to time can be found at SDFI's website [www.sdfi.dk](http://www.sdfi.dk). A provider who has been assigned a number in the 116-series is under an obligation to keep informed of any amendments to the Annex.

## **6. Payment for assignment of numbering resources**

### **6.1 Payment obligation**

SDFI will collect an annual number charge from providers of electronic communications networks or services and USO providers who have been or are being assigned numbers, number series, codes or addresses by SDFI<sup>46</sup>.

The obligation to pay the number charge will always have to be met by the provider who has been assigned numbering resources by SDFI, also in those cases where the provider has reassigned numbering resources to another provider (e.g. a service provider). This is also the case in connection with number portings, i.e. when end-users retain their numbers when changing between providers.

### **6.2 Procedures for collecting charges**

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<sup>45</sup> The European Commission's Decision of 15 February 2007 (K(2007)249) as amended by the Commission's Decisions of 29 October 2007 (K(2007)698) and 30 November 2009 (K(2009)884).

<sup>46</sup> Section 25 of the Telecommunications Act.

The amount of the number charge and the collection thereof will be fixed annually in the Finance Act and be announced by SDFI. The announcement will be made by SDFI posting the amount of the number charge on SDFI's website when the Finance Act has been passed.

In practice, the annual number charge will be collected by SDFI sending an invoice during the first quarter of the year for which the number charge is due, to those providers who have been assigned numbering resources, referring to SDFI's authority to collect charges and specifying the numbering resources held by the provider in question.

In case numbering resources are assigned during the year, the number charge will be collected with effect from the quarter in which the resources are assigned. For example, if a provider is assigned 10,000 numbers in the month of May, then SDFI will collect number charges for the 2nd - 4th quarters of the year in question.

### 6.3 Non-payment

Providers are under an obligation to pay number charges, see section 6.1 above. In case the provider fails to pay the number charge, SDFI will revoke the provider's numbering resources, see section 11.3.

As mentioned in section 3.1, SDFI may reject an application for assignment of numbering resources if a provider has an outstanding balance due to SDFI as a result of failure to pay number charges, irrespective of the type of numbering resources applied for, and irrespective of the type of numbering resources involved in such failure to pay number charges.<sup>47</sup>

## 7. Other obligations pertaining to the assignment of numbering resources

### 7.1 Efficient use of numbering resources

SDFI is to ensure efficient use of the numbering resources of the overall Danish numbering plan for the benefit of end-users.

In this connection, SDFI supervises the deployment of numbering resources assigned, as mentioned in section 5.3. Supervision is carried out solely for 8-digit numbering resources for fixed network- and mobile communications and MNC-codes. 8-digit numbering resources are subject to a deployment requirement which implies that a minimum of one number has been assigned to an end-user, and that the number series is registered in OCH. MNC-codes are subject to a deployment requirement which implies that an IMSI number created on the basis of the MNC code has been issued.

Basically, SDFI will assign numbers in blocks of 1,000 or 10,000 numbers.<sup>48</sup>

#### 7.1.1 Golden numbers and major customers

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<sup>47</sup> Section 4(10) of the Numbering Order.

<sup>48</sup> Section 5(1) of the Numbering Order.

Golden numbers are numbers believed to be especially attractive because of their digit composition, e.g. 35353535 or 88888888.

Providers who apply for assignment of a golden number - e.g. for a major customer - will often be faced with the problem, in relation to efficient use, that providers will be assigned a number series of 1,000 numbers as a minimum, even if only one specific number is to be used in practice.

Potentially, each golden number assigned may thus occupy an entire series of 1,000 numbers if the application is based exclusively on the golden number, and only the golden number will be put into use.

The same block of 1,000 numbers may of course contain several golden numbers, and the other numbers in the series may also be used as "ordinary" numbers. So in these cases the numbers may be used more efficiently.

In collecting the number charge, SDFI does not differentiate between golden numbers and ordinary numbers, but has made the assignment subject to the condition that actual and efficient use of the assigned number series is ensured, see the example in section 5.2.

A similar question arises in relation to a provider's application for a number series of 1.000 numbers, where the application is motivated by the interest of a major customer in having a limited amount of numbers in the number series concerned.

This is relevant in cases where a major customer with, say, 100 employees wants an internal numbering plan where all numbers start with the same four digits. In such cases the provider needs a number series of 10,000 numbers, although the real need of the major customer is only 100 numbers.

In this context a major customer may have a legitimate wish to ensure capability for extending its internal numbering plan gradually as the company develops and more employees are engaged. In these cases it is conceivable that the provider, on behalf of the major customer, will apply for the 10,000 numbers - of which the 100 numbers are expected to be put into service immediately, while the rest is kept as a reserve (either at the provider or the customer) - even if the customer will not need anything like 10,000 numbers.

## 7.2 Providers' obligation to ensure correct routing

Providers of electronic communications networks or services must ensure correct routing of calls to subscriber numbers comprised in the overall Danish numbering plan. In addition, providers must ensure correct routing of calls to the European telephone numbering area, and are also required to ensure correct routing of calls to subscriber numbers offering number portability.<sup>49</sup>

This means that providers, to the extent that they offer end-user products themselves, including calls to the relevant type of subscriber numbers, must deliver the call, directly or indirectly, to the provider who has been assigned the subscriber number. For example, it is a condition of a provider being obliged to route calls to 90-numbers that the providers offer 90-numbers to their own end-users.

The option that the provider may route a call both directly and indirectly means that a provider need not have interconnection agreements with all providers of electronic communications networks or services as a call can be routed by means of one or more intermediate providers.

Thus the routing obligation involves two conditions:

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<sup>49</sup> Section 30(1) of the Telecommunications Act.



- The provider who is to route the call must offer the services in question itself, including calls to the relevant categories of numbers, and
- an interconnection agreement must have been made on routing the numbers/services in question.

Especially in regard to routing to the European telephone numbering area, it should be noted that the routing obligation applies only when economically and technically feasible.

### 7.3 Duty to supply information to the USO provider's number database

If a provider of electronic communications networks or services has numbering resources at its disposal, the provider is under an obligation to pass on number information data to the directory enquiry service (118) of the USO provider.

## 8. Reassignment and transfer of numbering resources

### 8.1 Reassignment of numbering resources

Reassignment implies that the provider who has been assigned numbering resources by SDFI reassigns these to other parties, e.g. service providers. Reassignment is also made in case of number porting.

SDFI need not approve any reassignment by providers.

In case of reassignment, the provider who has been assigned the numbering resources by SDFI will still be the original provider. However, the numbering resources are made available to a provider other than the one who has been assigned the resources. This also means that the party to pay the number charge will be the original provider.<sup>50</sup>

A provider may only reassign in one link since the provider is to ensure that a service provider who has been reassigned numbering resources observes the rules in the area and the terms prescribed when the numbering resources were assigned.<sup>51</sup>

Reassignment of numbering resources to other providers of electronic communications networks or services must not be made to providers who, owing to scarcity within the overall numbering resources, have not been able to be assigned number series directly in other ways by SDFI.<sup>52</sup>

### 8.2 Transfer of numbering resources

Transfer of numbering resources may be relevant in connection with transfer or sale of customers to another provider where customer numbers and perhaps other numbering resources are also transferred, and in connection with business closedowns etc. Transfer of numbering resources may also come into question if a provider transfers an entire business area, including numbering resources, to another provider. Whether a transfer is defined as such will be assessed on the basis of the relevant rules of company law.

*SDFI must approve the transfer of numbering resources*

<sup>50</sup> Under section 25 of the Telecommunications Act.

<sup>51</sup> Section 8(2) of the Numbering Order.

<sup>52</sup> Section 9(1) of the Numbering Order.

A provider who has been assigned numbering resources must not transfer these to another provider without the approval of SDFI.<sup>53</sup> The provider who wants to transfer numbering resources to another provider must apply to SDFI for permission to transfer the numbering resources in question for the purpose of obtaining SDFI's approval of the transfer.

#### *Criteria included in SDFI's assessment of a transfer*

In making an assessment as to whether a transfer can be approved, SDFI will initially determine if the provider to whom the numbering resources are to be transferred is a provider within the meaning of the Telecommunications Act. In addition, SDFI will assess the information given in the application on which the transfer is based.

The starting point is that a transfer is regarded as similar to an assignment. This means that in case of a transfer SDFI requires the same information as must be given in an application for assignment of numbering resources, including the extent of already assigned numbering resources, contact details and a description of the intended use of the numbering resources to be transferred.

#### *Terms pertaining to the transfer*

Basically the terms specified for the numbering resources when originally assigned will be continued. However, there may be a need for SDFI to specify supplementary terms in connection with the transfer for the purpose of supporting the terms stipulated for the original assignment.<sup>54</sup> For instance, there may be supplementary terms requiring the provider to initiate measures for the purpose of ensuring efficient use of numbering resources.

#### *Number charge in connection with transfer*

When SDFI approves a transfer of numbering resources, the receiving provider will have to pay a number charge from the quarter in which the transfer takes place. This means that the transferring provider is required to pay a number charge up to and including the quarter preceding the quarter in which the transfer takes place. In practice this means that while the transferring provider has paid the number charge for one year, SDFI is to pay back the number charge to the transferring provider for the relevant quarters (which, after the transfer, are to be paid for by the receiving provider).

An example of the above is the following: If the transferring provider transfers numbering resources to the receiving provider on 10 April (2nd quarter), then the receiving provider is to pay the number charge from 2nd-4th quarters, and the transferring recipient is to pay the number charge up to and including 1st quarter (up to and including 31st March). As the providers pay the number charge one year at a time, this means in practice that SDFI is to pay back the number charge to the transferring provider for 2nd-4th quarters.

## **9. Return and withdrawal of numbering resources, bankruptcy etc.**

### **9.1 Return of numbering resources**

A provider may at any time return the numbering resources that SDFI has assigned to the provider. Numbering resources must basically be returned to the same extent as the resources were assigned. However, a provider may return assigned number series in overall series of 1,000 numbers, provided that no porting of numbers to other providers has been undertaken in such overall series.<sup>55</sup>

In case a provider wants to return numbering resources, the provider must submit an application to SDFI to that effect. In case a number series is being returned, SDFI will ask the provider to

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<sup>53</sup> Section 9(2) of the Numbering Order.

<sup>54</sup> Section 9(3), cf. section 7, of the Numbering Order.

<sup>55</sup> Section 9(4) and (5) of the Numbering Order.

confirm that there are no portings in the series. Provided that there are no ported numbers in the number series, SDFI will then register the return and confirm this in writing to the provider. Conversely, if there are ported numbers in a number series, the application for return will be refused in writing by SDFI.

*How is the number charge calculated on the return of numbering resources?*

As mentioned in section 6.2, the number charge is calculated for each quarter or fraction thereof in which the numbering resources were assigned. When a provider returns numbering resources, the number charge must be paid up to and including the quarter in which the resources are returned. The number charge will be refunded for the other quarters of the year in question. For instance, if a provider returns numbering resources in April (2nd quarter), then SDFI will refund the number charge for 3rd-4th quarters. The refund will be made to the provider's NemKonto associated with the CVR number. Foreign providers who have no CVR number must inform SDFI about the provider's bank, including registration and account number and BIC/SWIFT for the use of SDFI's repayment.

## 9.2 Withdrawal of numbering resources

SDFI may withdraw numbering resources if this is necessary as a result of modifications in the overall Danish numbering plan. In that case, withdrawal is subject to a notice of three years.<sup>56</sup> For example, this rule may be used if at some future date the existing 8-digit numbering plan is no longer sufficient, and extension to a 9-digit numbering plan is to be implemented.

Furthermore, SDFI may withdraw numbering resources if assigned resources have not been put into use or are no longer in use, and if it is deemed necessary for capacity or planning reasons. In that case, withdrawal will be effected at a notice of six months.<sup>57</sup>

SDFI may modify or replace already assigned numbering resources with others if it is deemed necessary for capacity reasons or for reasons concerned with general number planning. Numbering resources may also be modified or replaced if, based on an overall assessment, it is deemed expedient for the purpose of ensuring efficient use of the overall numbering capacity.<sup>58</sup> Modification of numbering resources already put into use is subject to a notice of three years.<sup>59</sup>

A decision on withdrawal, modification or replacement may be appealed, see section 3.6, where the appeals procedure is described in further detail.

As for the settlement of number charges in these cases, reference is made to section 9.1 above.

## 9.3 Bankruptcy

SDFI has not specified rules about the consequence of a bankruptcy in relation to the numbering resources assigned to a bankrupt provider. SDFI's practice implies that SDFI will contact the liquidator of the provider's bankrupt estate to open a dialogue with the estate as to whether the numbering resources are desired to be transferred to another provider, or whether the liquidator wants to return the numbering resources to SDFI.

*Number series must be without portings when returned*

A return of number series in connection with bankruptcy is basically conditional on no numbers being ported to other companies in the provider's 8-digit number series, as SDFI will

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<sup>56</sup> Section 28(1), no. 1, and section (2) of the Numbering Order.

<sup>57</sup> Section 28(1), no. 2, and section (3) of the Numbering Order.

<sup>58</sup> Section 29(1), nos. 1 and 2.

<sup>59</sup> Section 29(2) of the Numbering Order.

assign number series that are complete, and therefore wants to receive complete number series so as to enable subsequent assignment of these to other providers.<sup>60</sup>

*Consequence to end-users (the provider's customers)*

If a bankrupt estate wants to return number series to SDFI, this means that the customers concerned will lose their numbers. In case numbers might have been ported to other providers in the returned number series, the providers that have received the ported numbers will have to change the numbers of the customers, i.e. the end-users will lose their numbers unless a provider is willing to take over the number series concerned.

The question of bankruptcy should be included in the agreement made by the end-user with its telecommunications company, and the provider should inform the end-user about the consequences of bankruptcy.

*SDFI's practice in relation to providers' bankruptcy*

In some cases, SDFI has found that number series returned by the liquidator of the bankrupt provider have contained numbers that have been ported to other providers.<sup>61</sup> In view of this, SDFI has introduced a practice to be adopted when numbering resources are returned in connection with a bankruptcy.<sup>62</sup>

SDFI's practice implies that SDFI will look up in OCH (Operators Clearing House) or contact OCH in order to obtain information as to whether there are ported numbers in the number series concerned. If numbers have been ported to other providers, SDFI will contact the providers concerned, offering the providers the option that one provider can take over the number series in question.

In case no provider is interested in taking over the number series in question, end-users with telephone numbers in this number series will thus lose their original numbers.

If a new provider takes over the number series in question, it will be necessary for the provider taking over the number series to contact end-users with numbers in the number series, offering them new numbers (but the end-user may also move to another provider).

## **10. Number porting**

Number porting implies that providers must ensure that their end-users will be able to retain their subscriber numbers when changing between providers<sup>63</sup>.

### **10.1 What does the right to number porting involve?**

The right to number porting implies that an end-user is entitled to retain its subscriber numbers when changing to a new provider. A subscriber number is any number included in the overall Danish numbering plan and which can be reassigned to an end-user. The right to retain subscriber numbers applies both to the areas of mobile telephony and fixed-network telephony, including ISDN and IP telephony.<sup>64</sup>

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<sup>60</sup> Section 8(4) of the Numbering Order.

<sup>61</sup> This has also been experienced in situations where SDFI has revoked numbering resources owing to non-payment of the number charge.

<sup>62</sup> Or are revoked owing to non-payment of the number charge.

<sup>63</sup> Section 26(1) of the Telecommunications Act.

<sup>64</sup> Section 26(1) of the Telecommunications Act.

The right to retain one's subscriber number when changing to a new provider is unconditional and applies to all 8- and 12-digit numbers. Short codes may also come within the definition to the extent that a short code has been reassigned to an end-user.

What is protected, basically, is the right to take along individual numbers when changing to a new provider. This means numbers included in the subscription established under one's telecommunications company. However, the right to number porting will also include a major customer's entire number series if the entire number series falls within the customer's subscription under the telecommunications company.

But the right to number porting will not apply to the extent that a change is made simultaneously across fixed and mobile networks (known as cross-portability). So an end-user does not have a right to retain its subscriber number when changing for instance from a fixed network provider to a provider exclusively offering mobile telephony.

However, the providers have the option to offer services that enable end-users to change across fixed and mobile networks.

Providers shall ensure that an end-user terminating a subscriber agreement may retain the right to number porting of a number from the national numbering plan to another provider for at least one month after the date of termination, unless the end-user has waived such right.<sup>65</sup>

Furthermore, it must be possible for an end-user to port its subscriber number no later than by the end of the next working day following reception of the request by the transferring provider (known as 1-day porting). However, porting of the number must not be effected earlier than the date on which the end-user's subscription at the receiving provider has entered into force.<sup>66</sup>

The right to number porting is unconditional. Thus the end-user need not await the expiry of any commitment period or notice of termination before the end-user can have its number ported.<sup>67</sup>

As mentioned above, the subscription at the receiving provider must have entered into force before porting can be effected. When porting can take place will therefore depend on the specific agreement that the end-user has made with the receiving provider to that effect.

This does not rule out the possibility that the end-user may agree an individual porting date with the receiving provider, which may be particularly relevant in relation to business operators, where it may be difficult to port a major portion of numbers and have these activated at the receiving provider within a deadline of one working day.

End-users utilising their right to take along their subscriber numbers to a new provider must still comply with the conditions of their contract with the transferring provider regarding performance of their payment obligations for any commitment period or during a notice of termination.

Thus the end-user's request for number porting does not imply that the end-user will be released from fulfilling contractual economic obligations.

In case of delayed porting or misuse of porting, providers must pay the affected end-user a reasonable compensation.<sup>68</sup>

What is a reasonable compensation must be defined by the individual provider and is to appear from the subscription agreement with the end-user.

The specific regulation as to the party responsible and thus liable to pay compensation to the end-user in connection with delayed porting or misuse of porting is described in the industry

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<sup>65</sup> Section 26(3) of the Telecommunications Act.

<sup>66</sup> Section 27(1) of the Telecommunications Act.

<sup>67</sup> Section 27(2) of the Telecommunications Act.

<sup>68</sup> Section 27(4) of the Telecommunications Act.

agreement on number porting, which is available via OCH's website [www.och.dk](http://www.och.dk). OCH is the administrator of a database of all ported numbers in Denmark. So when a subscriber number changes from the provider that was originally assigned the number by SDFI to a new provider, this will be registered in OCH's database.

SDFI does not carry out supervision of the amount of specific compensations. Consumer complaints about specific compensations may be brought before the Telecommunications Complaints Board. Commercial complaints about specific compensations must be decided under civil law.

## 10.2 Procedures for number porting

A number porting is typically initiated by an end-user contacting the receiving provider, requesting the provider to initiate porting of the end-user's subscriber number.

The receiving provider will then arrange for the porting procedure to be carried out, and at the same time the provider will terminate the end-user's subscription under the transferring provider on behalf of the end-user.

So basically the end-user need not do anything in relation to the transferring provider. In case the end-user's subscription under the transferring provider is terminated by the end-user itself before number porting is initiated, the end-user will basically lose its right to the number and thus the right to have the number ported to a new provider.

In the case of failure of the porting process, the transferring provider shall reactivate the number and related services of the end-user until the porting is successful. The transferring provider shall continue to provide its services on the same terms and conditions until the services of the receiving provider are activated. The loss of service during the process of provider switching and the porting of numbers must not exceed one working day.<sup>69</sup>

As mentioned above, the provider receiving numbers as an element in number porting is to be in charge of the shifting and number porting process. Providers must not delay the shifting and number porting processes, nor must they port numbers or shift providers without the end-users' explicit consent. The end-users' contracts with the transferring provider will be terminated automatically upon conclusion of the switching process.<sup>70</sup>

The specific steps of the procedure are described in the industry agreement on number porting, which is available via OCH's website [www.och.dk](http://www.och.dk).

It will thus be the providers involved that primarily handle the porting of end-users' subscriber numbers. In principle, SDFI is not involved in the actual porting process, unless complications arise, or an end-user contacts SDFI, stating for instance that a porting is delayed where the end-user has agreed with the receiving provider that porting was to be made in one day.

In addition to the providers, OCH is also involved in porting of the subscriber numbers of end-users.

## 11. Supervision and sanctions

For cases in the numbering area, SDFI has the ability to apply various sanctions, for instance to ensure that numbering resources are assigned, used, revoked and returned in conformity with

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<sup>69</sup> Section 27(3) of the Telecommunications Act.

<sup>70</sup> Section 28a of the Telecommunications Act.

the terms prescribed for assignment of the numbering resource in question as laid down in the provisions of the Telecommunications Act and the Numbering Order.<sup>71</sup>

SDFI supervises compliance with the provisions of the Telecommunications Act and the Numbering Order on numbering issues<sup>72</sup> and is enabled in this connection to sanction any violations of terms fixed for assignment of numbering resources. For example, SDFI may institute the following:

- Orders
- Default fines
- Revocation

## 11.1 Orders

SDFI may issue orders to providers of electronic communications networks or services to comply with the rules of the Telecommunications Act and Numbering Order and terms laid down in pursuance thereof.

## 11.2 Enforcement fines

If a decision is not complied with, or if providers or owners of electronic communications networks or services fail to give the information that SDFI may require under the Telecommunications Act, SDFI can impose enforcement fines on these providers or owners of electronic communications networks or services.<sup>73</sup>

## 11.3 Revocation

Finally, SDFI may revoke numbering resources in case of severe and repeated violations of the provisions of the Telecommunications Act on administration and use of the overall Danish numbering plan and routing (Parts 6 and 8 of the Act), the provisions of the Numbering Order, or the terms for assignment of the numbering resources in question.<sup>74</sup>

For example, SDFI may revoke a provider's numbering resources in case the provider fails to pay outstanding number charges for using the numbering resources, see further details in section 6.

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<sup>71</sup> Section 79 of the Telecommunications Act and section 27 of the Numbering Order.

<sup>72</sup> Section 32(1) of the Telecommunications Act.

<sup>73</sup> Section 79(1) of the Telecommunications Act.

<sup>74</sup> Section 27 of the Numbering Order.

## **Annex 1: Review and description of the Danish numbering plan, including a description of the individual number series, codes etc. and the use of these.**

The Danish numbering plan is a common, unique, closed and non-geographical numbering plan.

The plan is based on international standards and regulations for numbering in electronic communications networks, in particular ITU Recommendation E.164.

### **A common numbering plan**

That the plan is common to the networks implies that the numbers may in principle be reached from all subscribers in networks that use the numbering plan.

However, the exchange of traffic between networks will only be possible to the extent that the providers enter into interconnection agreements about this, and the content of such agreements might imply that certain services and numbers cannot be reached.

#### *A unique numbering plan*

That the plan is unique implies that a given number has one application/one purpose only, no matter where the call is originated in the public electronic communications networks. For example, calls to 112 will always give free access via the designated channels to the emergency centres established by the authorities.

Another rule applicable to subscriber numbers is that calls to a given number will always go to the same user, no matter where the call is originated in the public electronic communications networks.

#### *A closed, non-geographical numbering plan*

Basically, the Danish numbering plan is structured as a closed, non-geographical 8-digit numbering plan. There is no difference in the number of digits in a subscriber number for local or national calls, and the numbers do not contain information indicating where in the country they are located.

The major part of the numbers in the Danish numbering plan are 8-digit or 12-digit, but there are also short codes to be used for special purposes, with three, four, five and six digits. Short codes are placed in the number series beginning with digits 0-1, the 8-digit numbers are placed in number series beginning with digits 2-9, while 12-digit numbers begin with digits 37.

### **Number series for special purposes**

Under the Telecommunications Act, the numbering plan should include designation of numbering resources for short codes, numbers with special tariff conditions, freephone numbers, numbers for premium rate services, numbers for the use of M2M communication, and for reservation allowing any later rearrangement of the numbering plan.<sup>75</sup>

Number series with first digits 2-9 and third digit 0 are allocated for future expansion of the numbering plan.

In addition, SDFI will basically assign numbers for the purposes stated in the plan shown below.

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<sup>75</sup> Section 21(2), no. 1, of the Telecommunications Act.



Short codes, numbers with special tariff conditions and numbers for the use of M2M communication comprise the following categories of numbers:<sup>76</sup>

#### *M2M services (37cdefghijkl)*

The number series, starting with digits 37, is allocated for M2M communication. 12-digit numbers in number series 37 must thus be used for M2M communication only.<sup>77</sup> So far, only that part of the number series which starts with 3710 has been put into use. Number series 3711-3719 and 372-379 will be put into use when deemed necessary.

Providers offering electronic communications services other than interpersonal communications services outside Denmark may exclusively be assigned numbers from number series 37 for this purpose.<sup>78</sup>

M2M communication means fully or mainly automatically initiated communication via an electronic communications network between two or more predetermined devices.

M2M communication also means communication via a mobile broadband network.

Fully or mainly automatically initiated communication means electronic exchange of information which is controlled automatically with little or no human intervention. Communication will typically be conducted between two or more predetermined devices, e.g. a server and a terminal. This does not preclude communication being initiated by a person. Examples of this may be a lift alarm or personal attack alarm. In both cases a person pushing an alarm button will alert a predetermined alarm centre or initiate a call to a predetermined alarm centre. However, all devices are controlled directly or indirectly by humans, so it is not possible to make a clear distinction between communication initiated by humans and devices respectively.

M2M communication may include speech if this function is an integral part of a service. Examples of this may be a lift alarm or eCall, where it is possible to establish a telephone connection between the lift/car and an alarm centre. However, also in these cases the communication exchanged must still be in the nature of mainly automatically initiated communication via an electronic communications network between two or more predetermined devices.

A device means an electronic unit capable of receiving and/or transmitting data via an electronic communications network. The device may be for example a GSM unit reading electricity meters, water meters and heating meters and sending the collected data to the utility company. The device may also convey information about the position of a vehicle, as in the case of GPS equipment, or make calls to a control or alarm centre. Devices may be integrated into nearly everything desired to be monitored, measured or controlled.

Mobile broadband services are also considered to fall within the definition of M2M communication, to the extent that such services do not include ordinary voice telephony.

#### *International prefix (00)*

The international prefix is used for international calls and is followed directly by the country code of the country in question and the national number dialled. The country code means the unique 1-, 2- or 3-digit code allocated by the ITU according to Recommendation E.164. Denmark's country code is 45. The international prefix 00 appears from Article 93(5)<sup>79</sup> of the telecommunications directive.

#### *Carrier selection codes (10cd)*

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<sup>76</sup> Sections 12-22 of the Numbering Order.

<sup>77</sup> Section 22(1) of the Numbering Order.

<sup>78</sup> Section 22(2), cf. section 31(2) of the Numbering Order.

<sup>79</sup> Directive 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (Recast).

Number series 10cd is used for 4-digit carrier selection codes. Carrier selection means that the end-user, in connection with each individual call, may choose another provider.

Number series 108d-109d have been allocated for 4-digit carrier selection codes, but will only be put into use when deemed necessary.

*USO services, directory enquiry services and special services of social value etc. (11c and 12c)*  
Numbers in number series 11c are used as 3-digit short codes for provision of USO services or special services of social value, which means the services mentioned in section 22(1) nos. 1, 2 and 3, of the Telecommunications Act.

Numbers in number series 12c may solely be used as 3-digit short codes for the use of a common telephone line to public authorities.<sup>80</sup>

However, the decision as to whether a 3-digit short code can be assigned for a service will depend on a specific assessment of the service in question.

*Emergency number (112)*

112 is used for calls to the public emergency service.

*Access codes to other networks (16cde)*

5-digit numbers in the 16-series are used for connecting directly to other networks and services, including data communications networks such as VPN services. Number series 164de-169de are allocated for 5-digit access codes, but will only be put into use when deemed necessary.

*Directory enquiry services or special services (18cd)*

Number series 18cd is used for access to directory enquiry services, for provision of special services of social value, and for provision of common services of a special consumer-oriented or social nature related to the provision of electronic communications networks or services,

4-digit short codes is a significantly more restricted resource in relation to 8-digit numbers.

It will depend on an overall assessment, taking account of the specific request for a 4-digit short code, whether a service can be considered of a special social nature. In this assessment SDFI may consider it important that the service should be nationwide, widely informative and be used regularly. Thus it will be considered important how many people have access to the service, how many people will use the service, how frequently the service will be used, and how large a proportion of the population is addressed by the service. SDFI may use all three criteria or less, depending on the specific case.

Following a specific assessment, SDFI may also conduct a consultation among relevant parties prior to assessing if a 4-digit short code can be assigned to a provider.

However, the decision as to whether a 4-digit short code can be assigned for a service will depend on a specific assessment of the service in question. In this connection, it should be noted that the three criteria mentioned above may be included in an assessment of each individual service even if the services are offered under the same short code.

Assignment of short codes in the 18cd series is not reserved for public authorities.

*Numbers in the 116-series (European harmonised services of social value)*

6-digit numbers in number series 116def are used as 6-digit short codes for the use of European harmonised services of social value, see Commission Decision of 15 February 2007 (K(2007)249) as subsequently amended. It appears specifically from the Annex<sup>81</sup> to the Commission Decision which numbers in the 116-number series may be put into use and for what purpose.

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<sup>80</sup> Section 22(1), no. 2, of the Telecommunications Act and section 15(2) of the Numbering Order.

<sup>81</sup> The Annex to the Commission Decision is available at SDFI's website [www.SDFI.dk](http://www.SDFI.dk).

However, short code 116 112 cannot be assigned or used by any service as there is a certain risk of confusing the number with emergency number 112. It also appears that it must free of charge for an end-user to call a 116-number.

#### *Freephone numbers without call- or minute-based charging (80cdefgh)*

Number series 80cdefgh is used for services where calls are made without call- or minute-based charging of the calling end-user.

These numbers are not used for Universal International Freephone Services. For this purpose, Universal International Freephone Numbers (UIFN) are used, which is a numbering resource allocated and administered directly by the ITU.

More information about UIFN numbers may be found in ITU Recommendations<sup>82</sup> E.169 and E.152.

#### *Information and content services (901-905defgh)*

Number series 901, 902, 903, 904 and 905 are used for various categories of premium rate information and content services.

Information and content services may only be placed in the relevant number series. Furthermore, numbers in the 901-905 series may not be used for purposes other than information and content services.

#### *Premium rate services (909defgh)*

Number series 909defgh is used for a provider's premium rate services on condition that these services are not information or content services (e.g. payphones).

## **8-digit numbers**

The 8-digit numbers can be divided into the following categories:

- 1) Number series allocated chiefly for fixed-network communications, including fixed-network telephony, ISDN and IP telephony.
- 2) Number series allocated chiefly for mobile communications, including mobile telephony.
- 3) Number series allocated for the use of freephone calls (80-numbers).
- 4) Number series allocated for premium rate services (90-numbers).
- 5) Number series allocated as a reserve.

## **Codes for data networks and electronic communications networks**

Provisions on codes to be used for data networks and other communications network are found in sections 25-26 of the Numbering Order. These provisions give guidelines regarding the following types of codes:

#### *Data Network Identification Code (DNIC)*

Numbering in public data networks is laid down in ITU Recommendation X.121, which states that terminal connection points (customers) should be identifiable by a number having 14 digits as a maximum.

Of this maximum of 14 digits, the first four digits are known as the DNIC (Data Network Identification Code), which serves as the universal number of the data network to which the subscriber is connected.

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<sup>82</sup> See <https://www.itu.int/rec/T-REC-E/en>.

The global use of DNICs is handled by the ITU, while allocation of the second part of the DNIC is handled nationally, which means that the resource available to Denmark is DNICs 2380-2389 and 2390-2399 (the subsequent 10 digits are allocated by the provider itself).

ITU Recommendation X.121 contains supplementary information about DNICs. The Recommendation may be downloaded from the website <https://www.itu.int/rec/T-REC-X/en>.

#### *Administration Management Domain (ADMD)*

ADMD addresses (ADministration Management Domain) is an addressing system used in certain data networks. The assignment of ADMD addresses is made in accordance with the overall framework laid down in ITU Recommendations F.400/X.400 and F.401. The Recommendations may be downloaded from the website <https://www.itu.int/rec/T-REC-F/en>.

The assignment aims to ensure that identical names do not occur within the individual countries. Assignment of addresses will be based on the applicant's requirements to the greatest possible extent.

### **Electronic communications networks**

Electronic communications networks designed on the basis of recommendations from the ITU and standards issued by ETSI may only use the numbering and addressing systems specified by the ITU and ETSI for the purpose of interconnection and identification.

In Denmark, numbering and addressing systems used for internal exchange of call data etc. are administered by SDFI to the extent that the numbers and addresses in question represent a limited resource, or where practical circumstances indicate that the administration should be placed under SDFI.

On this basis, SDFI is currently administering and assigning ISPCs, NSPCs, MNCs and IINs, see below.

#### *International Signalling Point Code (ISPC)*

An ISPC (International Signalling Point Code) may best be described as the address of one of the many computers that control a switch in the fixed-network and mobile communications networks. All these computers are interconnected in a packet-switched data network whose transmission links consist of 64 kbit/s channels. This arrangement, known as common channel signalling, is specified by the ITU under the name of Signalling System #7, and numbering for ISPCs is described in ITU Recommendation Q.708. The Recommendation may be downloaded from the website <https://www.itu.int/rec/T-REC-X/en>.

It should be noted that the signalling system is structured into two functionally independent levels, namely the international and national levels. SDFI assigns codes both at the international level (ISPCs) and the national level (NSPCs).

An ISPC consists of three fields, with 14 bits/5 digits in all:

<i>Zone code (3 bits)</i> (1 digit)	<i>Area code (8 bits)</i> (3 digits)	<i>Point code (3 bits)</i> (1 digit)
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At the international level, the first three bits (1 digit) indicate in which of the world's 8 regions the signalling point is located. The next 8 bits (3 digits) indicate in which of 256 areas within the region the signalling point is located. Finally, the last 3 bits (1 digit) indicate which of 8 signalling points within the area is being addressed.

For Europe the zone code is 2, and Denmark has area codes 076, 077, 078 and 079, each with 8 point codes.

#### *National Signalling Point Code (NSPC)*

Like an ISPC, an NSPC can best be described as the address of one of the many computers that control a switch in the fixed-network and mobile communications networks. All these computers are interconnected in a packet-switched data network whose transmission links consist of 64 kbit/s channels. This arrangement, known as common channel signalling, is specified by the ITU under the name of Signalling System #7. Signalling System #7 is often referred to as SS7.

In Denmark, an NSPC has the following structure: a-bc-def. a is 3 bits and will be indicated as a figure between 0 and 7 containing 8 possible values. bc is 4 bits and will be indicated as a figure between 0 and 15 containing 16 possible values. Finally, def, using 7 bits, indicates a figure between 0 and 127 and thus contains 128 possible values.

Furthermore, NSPCs can be indicated in decimal values or hexadecimal values, but this is only another way of representing the NSPC.

*Mobile Network Code (MNC)*

The Mobile Network Code (MNC), which is part of the International Mobile Subscriber Identity (IMSI), is described partly in ITU Recommendation E.212 (can be downloaded from the website <https://www.itu.int/rec/T-REC-E/en>) and partly in ETSI's standard ETS 300 523 (can be downloaded from the website <http://pda.etsi.org/pda/AQuery.asp>).

In mobile communications networks each mobile customer has a unique identity, known as the International Mobile Subscriber Identity (IMSI). The identity is used solely on the link between the SIM card of the mobile terminal and the subscriber register of the mobile exchange.

The IMSI consists of three parts, which are not allowed to exceed 15 digits in all:

<i>Mobile Country Code (MCC)</i> (3 digits)	<i>Mobile Network Code (MNC)</i> (2-3 digits)	<i>Mobile Subscriber Identification Number (MSIN)</i> (max. 10 digits)
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The MCC (Mobile Country Code) indicates the mobile subscriber's country of domicile. MCCs are administered by the ITU. The MNC (Mobile Network Code) indicates the network within the mobile subscriber's country of domicile. The MSIN (Mobile Subscriber Identification Number) identifies the subscriber within the individual network.

The three digits in the MCC are 2 for Europe and 38 for Denmark. In Denmark, the MNC consists of 2 digits (00-99), which means that 100 MNCs are currently available to Denmark.

ITU has allocated country code MCC 999 and the underlying 2- or 3-digit MNC codes for the use of dedicated, private networks. There is no registration or application requirement at ITU or SDFI for using MCC 999. Users should therefore be aware that the associated MNC codes will not be unique. The principles for using MCC 999 and the underlying MNC codes are found in ITU recommendation E.212, appendix III.

*Issuer Identification Number (IIN)*

An IIN (Issuer Identification Number) is a number that has to be put on any international charge card to identify the card issuer.

The ITU has undertaken to handle the general allocation of the special international charge cards (phonecards) issued by telecommunications companies and mutually recognised by these. The standard is described in ITU Recommendation E.118. The Recommendation may be downloaded from the website <https://www.itu.int/rec/T-REC-X/en>.

The IIN consists of three parts, which are not allowed to exceed 7 digits in all:

<i>MII</i> (89 for telecom)	<i>Country code</i> (45 for Denmark)	<i>IIN</i> (in Denmark 2 digits)
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Each issuer of phonecards is assigned a number where the first two digits are 89. The first two digits is also known as the Major Industry Identifier (MII), and 89 indicates that the charge card in question is used for telecommunications purposes. The next 1-3 digits identify the card issuer's country of domicile. The ITU has set these digits to be identical with the country code of the country concerned, see ITU Recommendation E.164 - for Denmark the code is thus 45. The overall IIN length for Denmark is fixed at 6 digits.

### **Other names and addresses for internal identification**

SDFI may undertake the administration of additional resources for internal numbering and addressing in electronic communications networks. This is not planned at present, but in case the industry or international forums contact SDFI and demonstrate a need for this, it will be possible for SDFI to undertake the administration of additional Danish parts of such resources.

**Overall deployment of the national numbering plan for fixed-network communications, mobile communications etc. (effective 21 December 2020)**

a \ b	0	1	2	3	4	5	6	7	8	9
0	International prefix	Reserve (*)								
1	4-digit carrier selection codes	3-digit short codes		Reserve (*)			5-digit network access codes	Reserve (*)	4-digit short codes	Reserve (*)
2	Mainly mobile communications									
3	Mainly mobile communications		Mainly fixed-network communications (! )				12- digit M2M numbers	Mainly fixed-network communications (! )		
4	Mainly mobile communications			Mainly fixed-network communications (! )						
5	Mainly mobile communications				Mainly fixed-network communications (! )					
6	Mainly mobile communications		Mainly fixed-network communications (! )				Reserve (*)		Mainly fixed-network communications (! )	
7	Mainly fixed-network communications (! )	Mainly mobile communications	Mainly fixed-network communications (! )							
8	Freephone	Mainly mobile communications	Mainly fixed-network communications (! )	Reserve (*)			Mainly fixed-network communications (! )			
9	Premium rate services	Mainly mobile communications			Reserve (*)		Mainly fixed-network communications (! )			

That a number series is allocated as reserve means that no numbers are assigned from it at the present time

Not all reserved number series appear directly from the table as this is only specified for the first two digits.

- Number series marked with (\*) are allocated for the use of extra capacity. This also applies to number series 108-109, 164-169 and 906-908.
- Number series with first digits 2-9 and third digit 0 are allocated for future expansion of the numbering plan. These do not appear from the table.
- Number series 116 is reserved for European harmonised use of 6-digit short codes for services of social value. Short code 116 112 cannot be assigned to, or used by, any service.
- Number series 3711-3719 and 372-379 will not be brought into use until deemed necessary.
- In number series marked with (! ) In number series marked with (!) the following number series are allocated mainly for mobile communications instead of fixed-network communications: 342, 344-349, 356-357, 359, 362, 365-366, 389, 398, 431, 441, 462, 466, 468, 472, 474, 476, 478, 485-486, 488-489, 493-496, 498-499, 542-543, 545, 551-552, 556, 571-574, 577, 579, 584, 586-587, 589, 597-598, 627, 629, 641, 649, 658, 662-665, 667, 692-694, 697, 771-772, 782-783, 785-786, 788-789, 826-827 and 829.



## **Annex 2: Reservation of new 116-numbers**

### **Decision on reservation of new 116-numbers**

On 15 February 2007 the European Commission made a Decision (K(2007)249) to reserve number series 116def for the use of European harmonised services of social value.

The reason underlying the Commission's Decision to reserve number series 116def is the desirability of ensuring citizens of Member States, including travellers and disabled users, the ability to reach certain services that have a social value by using the same recognisable numbers in all Member States.

An interested Danish service provider may request reservation of a 116-number for a specific service by contacting SDFI or the European Commission. If SDFI receives a request to reserve a 116-number from a service provider, SDFI will review the request and subsequently submit it to the European Commission.

The European Commission will then be able to make a decision on reserving a 116-number for the service.

The criteria for reserving a 116-number for a specific service are as follows:

- The intended user of a 116-number must be a citizen.
- The service must be socially desirable and/or help citizens answer a problem.
- The service must give information and/or give help and/or give citizens help for reporting. The nature of the service must be such that it is potentially of value to visitors from other European member states.
- Declarations of intent to use the service in question must have been given by service providers in at least 14 member countries.
- The service must not resemble a similar service for which a specific 116-number has already been allocated.

When the European Commission, on the basis of the criteria above, proposes to allocate a new 116-number for the use of a new European harmonised service of social value, SDFI will consult with all relevant authorities and organisations that might be interested in the proposed service. The result of the consultation will determine whether Denmark can support a decision to allocate a 116-number for the service.

### **Announcement of new 116-numbers**

If the European Commission decides to allocate a 116-number for the use of a new European harmonised service of social value, SDFI will announce the possibility of being assigned the number in question in Denmark.

The announcement will be made via SDFI's website and other relevant media and will include information stating that applications for the number may be sent to SDFI, requirements for the service offered, and any deadline within which SDFI must have received the application.

What other measures should possibly be taken in relation to information about the existence and use of the individual 116-numbers will be assessed by SDFI in cooperation with other relevant authorities.

## Definitions

### **Subscriber number:**

A subscriber number means any number included in the overall Danish numbering plan and which can be reassigned to an end-user.

### **Emergency number:**

An emergency number means a number which, in an emergency or disaster situation, makes the public able to call the public emergency service.

### **The overall Danish numbering plan:**

The overall Danish numbering plan means those parts of international numbering and addressing plans that have been allocated to Denmark by the ITU, including the national numbering plan for fixed-network and mobile communications and plans for data communications.

### **Routing:**

Routing means that a provider, directly or indirectly, delivers a call made to an end-user's subscriber number to the provider under whom the subscriber number is connected.

### **Electronic communications network:**

Electronic communications networks mean any form of radio frequency or cable-based telecommunications infrastructure used for handling electronic communications services.

### **Electronic communications service:**

Electronic communications services mean services that consist wholly or partly in electronic conveyance of communications in the form of sound, images, text or combinations thereof, by means of radio or telecommunications techniques, between network termination points, including two-way and one-way communications.

### **Commercial provider:**

A provider who, for commercial purposes, offers products, electronic communications networks or services governed by the Telecommunications Act as its main service or as a non-accessory part of its business.

### **Carrier preselection:**

Carrier preselection means a permanent agreement to the effect that the end-user generally wants to use a specific provider other than the provider with whom the end-user otherwise has a customer relationship, for transport of all or parts of the end-user's outgoing calls.

### **Free carrier selection:**

Free carrier selection means facilities that allow end-users connected to public electronic communications networks or services intended for provision of fixed network or mobile telephony to choose which provider should undertake the transport of parts of the end-user's outgoing calls. This can be made via carrier preselection or call-by-call carrier selection.

### **Information and content service:**

Information and content services mean any form of electronic provision of information or content to which other end-users get access via an electronic communications network or an electronic communications service on the basis of an individual request.

### **ITU:**

International Telecommunication Union. The international organisation under the UN dealing with telecommunications issues. For further information on ITU, see [www.itu.org](http://www.itu.org).

### **Short code:**

A short code means a 3-, 4-, 5- or 6-digit number giving access to services for the purposes mentioned in section 22(1) of the Telecommunications Act.

**Country code:**

A country code means the unique 1-, 2- or 3-digit code allocated by the ITU in accordance with ITU recommendations, including E.164 and E.238.

**M2M communication:**

M2M communication means fully or mainly automatically initiated communication via an electronic communications network between two or more predetermined devices. M2M communication also means communication via a mobile broadband network.

Voice telephony services as defined in this Guide are not regarded as M2M communication. Notwithstanding this, M2M communication may include speech if this function is an integral part of an M2M service. However, also in these cases there must be mainly automatically initiated communication via an electronic communications network between two or more predetermined devices.

**Network termination point:**

A network termination point means the physical or logical interface in an electronic communications network that constitutes an end-user's connection to this.

**Number series:**

A number series means a block of numbers from the national numbering plan for fixed-network and mobile communications that has the same initial digits. A number series is defined in blocks of numbers of 100, 1,000, 10,000, 100,000, or 1,000,000.

**Call-by-call carrier selection:**

Call-by-call carrier selection means that the end-user, in connection with each individual call, may choose another provider by using a short code or an ordinary subscriber number.

**Transfer of numbers:**

Transfer of numbers means that a provider transfers its right to a number series to another provider. Thus there is a shift in who is the primary rights holder in relation to the numbering resource in question. As a consequence, the provider to whom a number is transferred will be the party liable for payment of the number charge.

**Carrier selection code:**

A carrier selection code means the special combination of digits used in connection with carrier preselection and call-by-call carrier selection.

**End-user:**

End-users mean users of electronic communications networks or services who do not make such electronic communications networks or services available to others on a commercial basis.

**Voice telephony service:**

Voice telephony service means an electronic communications service available to end-users for originating and receiving, directly or indirectly, national or national and international calls through a number or numbers in a national or international telephone numbering plan.

**Provider:**

Provider means any person who makes products, electronic communications networks or services governed by the Telecommunications Act available to other parties on a commercial basis.

**International prefix:**

An international prefix means a combination of digits dialled by the calling end-user for calls to networks, and which is followed by a country code.

**Reassignment:**

Reassignment of numbers means that a provider who has been assigned numbering resources by SDFI makes these resources available to another provider, e.g. a service provider, or in connection with the porting of subscriber numbers. However, the provider who has been assigned the numbering resources by

SDFI will still be the primary rights holder, being liable, among other things, for payment of number charges to SDFI.

**VPN service:**

A VPN service (VPN = Virtual Private Network) means a dedicated network where access from the public telecommunications networks is obtained through one or a few 8-digit numbers from the national numbering plan.