



Electronic Communications Committee (ECC)
within the European Conference of Postal and Telecommunications Administrations (CEPT)

**NUMBER PORTABILITY EFFICIENCY:
IMPACT AND ANALYSIS OF CERTAIN ASPECTS IN
ARTICLE 30.4 OF THE UNIVERSAL SERVICE DIRECTIVE
AND
GENERAL REMARKS ON NP EFFICIENCY**

Luxembourg, November 2010

The aim of the document is to promote discussion. Views, interpretations or suggestions etc. which are made in the report are not in any way binding or representative for the opinion of single or multiple CEPT countries.

EXECUTIVE SUMMARY

The aim of this report is to promote discussions on some number portability provisions laid down by the new provisions in the Universal Service Directive (USD) and to promote discussion on possible ways to improve NP efficiency.

This report consists of three main elements: Firstly, an overview of different NP implementations which could be further studied in the annexes. Secondly, it includes an elaboration upon different ways to interpret the new one-day rule in USD Article 30. Thirdly, it presents some ideas on how to improve NP efficiency regardless of chosen interpretation of the article.

NP implementations in Europe differ, but the majority of implementations are based on a recipient-led process, all call query techniques, and the involvement of and a central entity such as a Central Reference Data Base (CRDB).

The one-day porting rule can be understood in two ways. Either the one-day timer starts with the conclusion of an agreement *or* the one-day timer is purely related to the activation of the porting. As for the first alternative the Report identifies several actions that could mark the conclusion.

The report also includes a chapter that, independently of any interpretation of the article, investigates different measures to that could improve NP efficiency. Such measures could focus on different aspects of the porting process namely shortening timers, improving communications between parties, reducing valid reasons to reject portings and removing contractual obstacles.

The aim of the document is to promote discussion. Views, interpretations or suggestions etc. which are made in the report is not in any way binding or representative for the opinion of single or multiple CEPT countries.

PREFACE

The report has been on public consultation 14 July – 15 October 2010 and the key findings of operators' answers to this process are as follows:

- Warning against too strict requirements in number portability regulations.
- The alternative 2 (see chapter 4.3.6) allows to a greater extent room to elaborate global NP process and verification.
- The alternative 2 helps to avoid unnecessary impact on existing complex processes if they are already appropriate with respect to end user needs.
- The access availability of the new service.
- The needs are different between business and residential customers.
- Importance of a reduced interruption time for the customers.
- A global delay reduced to one working day cannot be applied to all portability situations.

As a matter of fact, option 1a seems rejected by all parties as not realistic and not adapted to the needs.

The directive aims to reduce portability delay as much as possible but confirms NRAs have a margin to interpret article 30 from option 1b to alternative 2.

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**NUMBER PORTABILITY EFFICIENCY:
Impact and Analysis of Certain Aspects in
Article 30.4 of the Universal Service Directive
and
General Remarks on NP Efficiency**

1 INTRODUCTION

Number portability (NP) plays an important role in a competitive market. The opportunity for a customer to keep her number when changing operator is a key facilitator of subscriber choice and effective competition. It lowers switching barriers and it makes it easier for new entrants to challenge existing market positions.

The new Universal Service Directive (USD) art 30, 4 stipulates that:

“Porting of numbers and their subsequent activation shall be carried out within the shortest possible time. In any case, customers who have concluded an agreement to port a number to a new undertaking shall have that number activated within one working day.”

The WG NNA, at its meeting in Kristiansand, Norway, 29 September – 1 October 2009 decided to set up the Task Force on Number Portability (TFNP), which would study in depth the following aspects related to the new Article 30 of the Universal Service Directive:

The exact meaning of the rule which says that the number must be activated i) within the shortest possible time; ii) in any case, within one working day (chapter 4 in this report).

Presentation of the current NP procedures in the countries participating in the TF. All participating countries were asked to give a short presentation on their national situation at the TF-meeting (chapter 3, Annexes).

Ideas to improve NP efficiency in order to achieve the one working day target set by the new Directive (chapter 5).

Practical measures to improve NP efficiency are subject to national interpretation of the Article 30.

The aim of this document is to promote discussion on number portability provisions laid down by the new Directive. In addition, the document describes some possible ways to understand the new Directive text.

The TFNP has focused on aspects of Article 30 relating to the one day porting rule. It has not considered other aspects such as the cost orientation principle, retail price prohibition and compensation.

2 POLICY GOALS

2.1 General Policy Aspects

The TFNP interprets the objective of the new provision in the fourth paragraph of Article 30 as being that the process of switching operators while retaining your number should be carried out within the shortest possible time. The TFNP understands that number portability should not add unnecessary extra time when switching operators compared with when a customer explicitly opts not to keep his number.

The TFNP also wants to note that a minimum porting time is not necessarily the economical optimum for society. In general reducing the porting time to a minimum would require a highly efficient porting system. In some countries the whole porting system would have to be redesigned and that is likely to increase costs, directly or indirectly, which some customers (because they face a cost for porting) might not be willing to pay. This could be a problem particularly in smaller countries where minimum economies of scale cannot be reached in order to implement a fully automated process. Therefore, when investigating efficiency in NP, considerations on national circumstances and national discretionary evaluations should be made.

The TFNP considered that Article 30 implies that NRAs should define the stages in the porting process in such a way that operators (losing/donor) do not misuse their position to create unnecessary delays in the porting process. It should also be observed that some measures to prevent slamming and unfair win-back actions can be built in the procedures however taking into account that such measures potentially increase the porting time.

2.2 Customer Needs

The time windows to validate and execute a porting differ from country to country and may be linked to the type of service and the profile of the customer. Some countries have different porting times for fixed and mobile, for porting of a single number and a group of numbers, and residential and business customers.

In general customer needs can be divided into two categories: a) the customer wants the number to be ported as soon as possible, and b) the customer wants the number to be ported at the specific date.

In practise, most customers ask to port their number at the end of their contract period, other wish the number to be ported at another preferred time. This means that the requested actual porting day is often known weeks in advance. With geographic (fixed) numbers in many cases porting can only be executed after physical installation of the line. Mobile telephony offers more flexibility in that respect. The TFNP is of the opinion that Article 30 does not prevent the porting day, or the time at which execution of the port takes place being chosen by the customer.

3 CURRENT NP PROCEDURES

3.1 General

The porting procedures in Europe differ from country to country, for example:

- Some countries have a donor led process and some have a recipient led process. Even in the same country, there can be differences, for example a donor led process for mobile and recipient led for fixed – or vice versa. However, in majority of countries the NP process for both fixed and mobile is recipient led.
- There are differences with regards to the organisation and operation of the central entity for administering porting. Many countries have a Central Reference Database (CRDB) but some have not. The operation of the database can be placed within the NRA or within different constructions in the market.
- The length of the porting time and how it is calculated can also differ. The time windows to validate and execute a port differ from country to country and may be linked to the type of service and the profile of the customer (e.g. residential or business). Some countries have different porting times for fixed and mobile, for individual numbers and groups of numbers, and residential and business customers.
- Some countries have issues with contractual notice periods and rollover contracts that influence porting times. For example, in some countries customers are not allowed to port if unpaid bills to the operator are due.
- Some countries have regulated the allowed maximum of down time (or loss of service), whereas in other countries this is set out in industry standards or is not specified.
- In most countries the operators apply a so called back-office procedure for validation of NP which can be time consuming.
- The majority of countries have no specific compensation obligations for breaching of prescribed porting times.
- Most countries route calls to ported numbers directly (using either ACQ or query on release) rather than using onward routing via the number range holder. The most common method for routing is ACQ.
- In some countries it is possible to transfer the customer's prepaid credit to the new operator or to return it to the customer. In most countries the customer will lose the remaining credit at the porting time.

3.2 Two Phased Porting Approach

In general the porting process consists of two parts: the validation and the execution phase. The objective of the validation phase is to prepare the porting ensuring that the correct number is ported and that the customer's number can be ported which also may include a validation/verification process that the customer is the assignee of the number. The end of that phase is the acceptance or the rejection of the porting request.

Reasons to refuse porting differ from country to country. One example is that in some countries the donor operator can refuse to port a number if the customer's contract duration is not respected or in case of bad debts, in other countries it is decoupled.

In the second phase, the execution phase, the recipient requests the execution of the porting, usually within an agreed time window.

3.3 Portability Process with CRDB

In most countries the porting process involves a central reference database (CRDB). In several countries the portability process starts – in case of ‘recipient-led’ processes – when the customer contacts the new (recipient) operator to sign a new contract and indicates the request to port the number.

The recipient inputs the request into its data systems, which passes the request to the old (donor) operator via the CRDB¹. In context of this report, the CRDB is an administrative reference DB, from which each operator takes the information for updating its own DB.

The donor checks the customer’s information and either accepts or rejects the porting request via the CRDB.

Where the request is accepted, the recipient executes the porting in its systems and forwards an execute message via the CRDB to the donor.

As well as the routing functionality as described above, in many countries the CRDB is also used to support the operational porting procedures (i.e. it acts as a clearing house). All the operators (using ACQ/Direct Routing) must update their own DB in a given time window. The size of this time window represents the maximum time in which the customer observes a total or partial loss of service.

3.3.1 Mobile Number Portability (MNP)

The donor sends the acknowledgement message to the recipient via the CRDB and the recipient confirms to the customer that the new SIM card has been activated and the number is operational with the new operator.

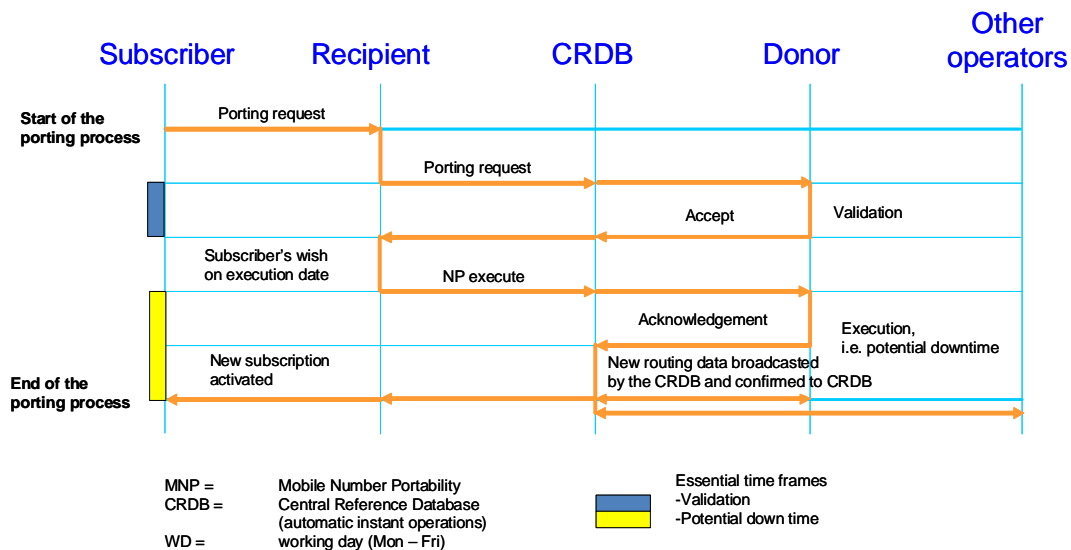


Figure 1: A general porting process with a CRDB

Figure 1 illustrates the general porting process when a CRDB is involved. The figure does not go into the details of the processes and do not accurately reflect the actual processes in every country; it is an illustrative example only. The message flow could vary in the various countries, for example the “customer’s request on execution date” could be sent with the “Porting request” message or this date could be omitted if the process has fixed dates. Moreover, the new routing data and porting time broadcasted by the CRDB could be sent just on the reception of “NP execute” message

¹ In some countries the CRDB is only used for the distribution of routing information and not for the support of the operational process.

from the recipient or on the validation message from the donor. The double ended arrows in the end of the porting process indicate first routing data to be broadcasted by the CRDB (arrow right) and thereafter confirmed to the CRDB (arrow left).

3.3.2 Fixed Number Portability (FNP)

In many cases FNP involves more physical operations than MNP.

After the fixed line is installed by a technician on a date agreed with the customer (or activated from a distance) the execution phase is started.

With VoIP and home zone subscriptions less physical coupling/decoupling is needed.

3.4 Portability Processes without CRDB

In some countries, the portability process is carried out without using a CRDB. Where onward routing is used, a unique DB is not mandatory. In situations where direct routing is adopted a distributed DB can be used. In this last solution, all the local routing DBs have the same contents (i.e. are synchronised).

For onward routing, in general, three operators are involved in the number portability process: the recipient, the donor and the number range holder. After the validation phase, the number range holder must also be informed of the number port, in order to re-route communications to the recipient to which the customer has ported their number.

Figure 2 illustrates the general porting process from start to end when an onward routing solution without a CRDB is adopted.

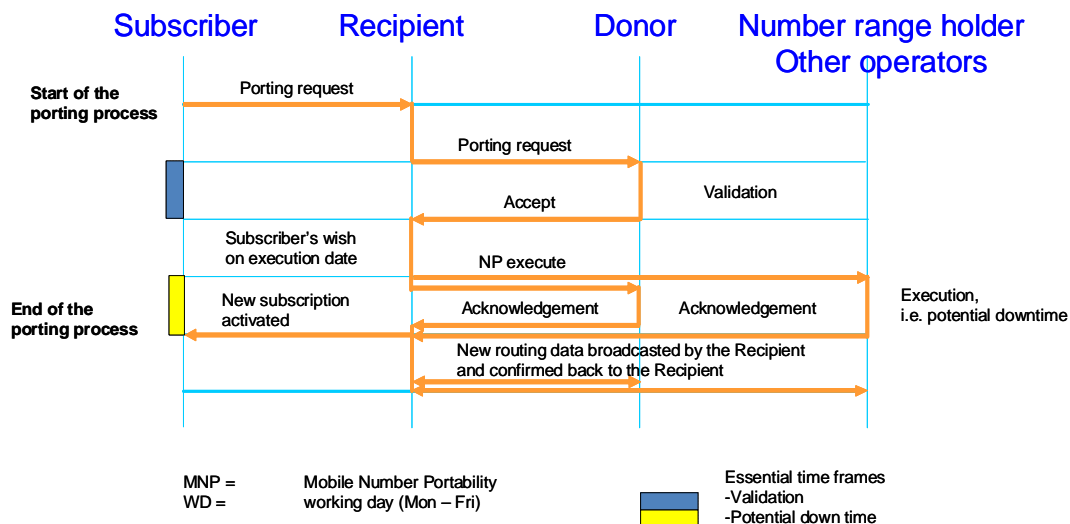


Figure 2: A general porting process in case of onward routing without a CRDB

Where a local routing DB is used, after the validation phase, a message has to be sent out to all operators that use direct routing. The message informs the operators about the routing modifications that must be done in the distributed DB during the execution time. A critical issue in this solution is maintaining the synchronisation of all the involved routing DBs.

4 ONE DAY NP

4.1 Porting of Numbers

In USD Article 30 paragraph 4 it is stated as follows:

Porting of numbers and their subsequent activation shall be carried out within the shortest possible time. In any case, subscribers who have concluded an agreement to port a number to a new undertaking shall have that number activated within one working day.

Without prejudice to the first subparagraph, competent national authorities may establish the global process of porting of numbers, taking into account national provisions on contracts, technical feasibility and the need to maintain continuity of service to the subscriber. In any event, loss of service during the process of porting shall not exceed one working day. Competent national authorities shall also take into account, where necessary, measures ensuring that subscribers are protected throughout the switching process and are not switched to another provider against their will.

The text does not separate between different porting procedures like recipient-led or donor-led processes. It does not differentiate between fixed and mobile and it does not differentiate between the types of customer (e.g. residential or business) involved.

The TFNP considered the text and found various ways in which it could be understood. This chapter discusses the possible meanings of the text without considering which option would be right or wrong.

4.2 Sentence I

“Porting of numbers and their subsequent activation shall be carried out within the shortest possible time.”

The TFNP considered that the ‘porting of numbers and their subsequent activation’ could be understood in two separate ways:

1. That the process is divided into two separate sub-processes, specifically:
 - (a) ‘porting of numbers’, which would include all porting processes before the number is activated and in use with the new recipient operator, and
 - (b) ‘subsequent activation’ which could mean making the customer’s number active with the new recipient operator.

However, depending on the understanding of ‘activation’, it could be difficult to define ‘activation’ as being separate from the ‘porting of numbers’, therefore there is also a second possible interpretation.

2. That ‘porting of numbers and their subsequent activation’ is not intended to refer to two separate processes but instead just one single process, i.e. the activation is the result of ‘the porting of numbers’.

Under either interpretation the sentence requires that both the ‘porting of numbers’ and ‘their subsequent activation’ shall be carried out “within the shortest possible time”. Given that the following sentence refers specifically to the ‘activation’ and not to the ‘porting of numbers’ if we consider the first interpretation above, the implication could be that the only requirement related to the ‘porting of numbers’ is that it should be completed within ‘the shortest possible time’.

4.3 Sentence II

“In any case, customers who have concluded an agreement to port a number to a new undertaking shall have that number activated within one working day.”

The TFNP considered two possible ways of interpreting this text:

Alternative 1

The sentence could be understood to mean that the conclusion of the ‘agreement’ marks the starting point of the ‘one working day’. This then raises questions about when an agreement can be said to have ‘concluded’. The TFNP identified the following potential options for understanding the ‘conclusion of an agreement’:

- (a) when the porting request is handed in by the customer. Depending on the type of porting process, i.e. either donor-led or recipient-led, the whole porting process will then start here.
- (b) when the request is accepted by the operator (recipient). In a donor-led process the validation of the request may have been carried out by the donor before the request arrives to the recipient. In a recipient-led process a customer may be accepted by the recipient before the actual porting process has begun and the request has been validated.
- (c) when, in a recipient or donor led process, the recipient orders the donor to execute the final stages of the port. The donor has to extract customer information from its systems and the recipient has to activate the subscription. The CRDB has to announce the new routing information to all providers and their routing table must be updated.
- (d) when the recipient and donor operator has validated the request and completed the porting of numbers. Both in donor-led and recipient-led process this option would actually mean that the actual porting of number has already been carried out, while the subsequent activation still remains.
- (e) when the recipient operator has validated the request (via the donor) and when ‘ready for service’, i.e. when all the necessary actions to enable the port have been completed (for example in fixed the new line has been set up/installed and tested etc).

Figure 3 indicates the above mentioned options within a general porting process.

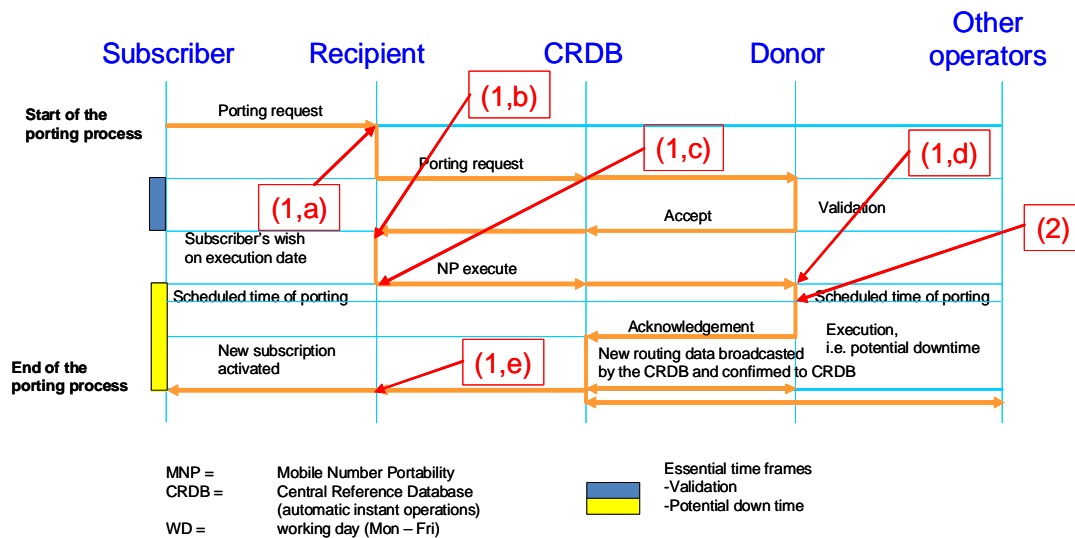


Figure 3: Alternative 1 – starting points of options (a) – (e), Alternative 2

Alternative 2

The sentence can be also understood as the one day rule referring only to activation, meaning that the one-day starts at the beginning of the activation. ‘Concluded an agreement’ then only serves to specify that the porting of numbers can only be initiated on the basis of an agreement. In this regard ‘concluded an agreement’ doesn’t imply anything (e.g. a starting point) related to the time frame.

4.3.1 Alternative 1 Option (a)

Option (a) could be difficult to implement in a practical manner. In most cases there would be elements in the porting process that, by themselves, demand more than one working day, for example the decoupling and coupling of physical landlines or mailing out SIM cards. Remote provisioning of SIM cards (soft-SIM) is not likely to be a reality in the near future, and it is only standardised for the M2M sector.

Secondly, it could be recognised that the initial proposal from the Commission in COM/2007/698 was: "Porting of numbers and their subsequent activation shall be executed within the shortest possible delay, no later than one working day from the initial request by the customer." The abandonment of the wordings of 'initial request' may argue that the present wording does not mean when the request is handed in.

Thirdly, a customer's request to activate the ported number at a later point in time should be respected and in several cases the customer may not want to port immediately after submitting the request, so (a) would not be applied in this case.

A fully automated process handling the large majority of cases is possible, but errors and exceptions will still need manual intervention, where option (a) due to the strict requirement of meeting the one working day porting target increase costs. Therefore operators could incur significant costs creating a process that customers will not always require (e.g. if they request a longer porting time as described above).

This interpretation could, however, also have some potential advantages especially in mobile and VoIP sector. For example, the end to end porting time for the customer is likely to be lowest under this interpretation. In addition, in order to meet this tight timeframe it is likely that an automated validation procedure would be required and although this type of validation process is likely to have high set up costs, it could potentially have lower operating costs in the long term, because only a limited amount of manual working would be required in particular, if the exceptions are limited only to the essential ones.

4.3.2 Alternative 1 Option (b)

Unlike option (a), option (b) would allow time for the validation of the request prior to the agreement being concluded, and the start of the one working day. This may be a reasonable interpretation because the recipient is unable to 'conclude' the agreement to port the number until both the recipient and the donor have validated that the request is legitimate and the customer is entitled to port the number. This is likely to be less costly for operators to implement compared to option (a), particularly where operators use manual or only semi-automated processes for validation, because they would likely be able to keep their existing validation processes in place. It may also reduce the risk of slamming, because operators will have more time to complete the validation process to ensure that the request is legitimate, a shorter validation process may in some cases lead to a greater risk of slamming.

However, it may require redefining of the customer's contract to make clear that the contract is only concluded when the recipient has validated the request. It may also be open to the donor to create delays in the validation process, unless NRAs set specific time limits for the validation process as well as the number activation process. There may also be some practical difficulties, for example the physical installation of lines in fixed number portability, that would still prevent the process being completed in one working day after the request has been validated. Developing processes that ensure that the execution phase of the porting process is completed in one working day may still require significant cost for the operators, particularly in the case of fixed porting. However, many practical and physical measures may have been finalised before the execution phase.

The option (b) is not related end-user rights since one working day is not visible to the subscriber, so this may not be in the line with the Directive. However, it may shorten the overall switching time.

4.3.3 Alternative 1 Option (c)

This would be more specific than option (b) in that the one working day would be measured from when the recipient submits the request for porting to the donor (having previously validated the request), i.e. the start of the 'execution' phase. As with option (b) this may still create practical issues and there may still be opportunities for the donor to delay the validation phase of the process unless there are specific time limits in place.

4.3.4 *Alternative 1 Option (d)*

This would mean the one working day would be measured from the point at which both donor and recipient operator have validated the customer and the numbers and all relevant administrative issues have been cleared (and the customer has received confirmation of the request for porting). Only the technical activation of the number(s) in the recipient's network remains.

4.3.5 *Alternative 1 Option (e)*

This would mean the one working day would be measured from the point at which the service is ready to be provided on the customer's number, i.e. when validation is completed and also when 'ready for service' so all necessary actions required for providing the service are completed. This might be considered a reasonable interpretation because it is in line with the apparent intention of the Article and a policy goal of the TFNP to ensure that the porting process does not add anything more than one working day to the overall switching process.

This would be the least costly option for operators as it would not require significant changes to existing processes but instead sets a time limit of one day only for the activation of the number on the new service, any other actions required to make the service ready could be completed before the start of the one day period, for example the installation of fixed lines.

As with options (b) and (c) this option may also reduce the risk of slamming, because operators will have more of an opportunity to fully validate the request. It would also allow customers greater flexibility to choose a port date that is further ahead than one working day.

However, it may create difficulties over defining when the service is 'ready' and again this may need to be written into customer's contracts. There are also potentials for the donor to delay the process. In addition, as above, NRAs would need to set timescales over the validation process to ensure that there were no unnecessary delays. The end to end porting process for customers under this option is likely to be longer than for example option (a).

4.3.6 *Alternative 2*

Under this interpretation, the only requirement is for the number to be 'activated' in one working day. The time from which that one working day should be measured could be the point when the activation is started. This point would be at the exact time and date of the scheduled porting. This is when all operators start updating their routing tables. Every originating operator must update their tables in order for the number to be sufficiently activated and routable from all subscribers. This alternative would imply a general obligation and a framework to all providers to activate the porting within one working day. It will also provide a universal right for the subscriber and a duty for operators reducing the risk of operators being unwilling or slow in updating the tables.

This interpretation could allow operators to complete the validation process ahead of the one working day and therefore might be more practical to implement.

It could leave for the NRAs and the operators to focus on other parts of the porting process, based on national circumstances, in order shorten the overall porting time and to apply with the objective of the provision which is that the whole process of switching operators while retaining the number shall be carried out within the shortest possible time.

It would give additional room for a verification process where Member States should take measures ensuring that subscribers are protected not to be switched to another provider against their will.

It would also allow for Member States to elaborate on the global process of porting as provisioned in Article 30.4 section 2. With a too tight timeline, there would be little left for national discretion.

The interpretation is in line with the understanding in 4.2 nr 1 that there are two separate sub-processes – the porting and the activation.

It may also allow more flexibility to NRAs on how to implement the requirement. This could also prevent high costs to operators who may not need to make significant changes to existing porting processes. However, this interpretation could also lead to a lack of clarity about when subscribers could expect to have their numbers ported. In addition, if there are no established time limits for the process there may be potential for donor operators to delay the process. From

a customer point of view the porting process could also potentially be significantly longer than one day, if the validation and execution phases of the process (i.e. prior to the number being 'activated') take a long time.

In fact, a one day activation might be considered a long time. Many countries allow only hours from the time of porting to the completion of the updating of routing tables. The alternative 2 is a minimal interpretation of Article 30.4 and means in practice a status quo in most countries. However, the objective of the general provision of 'the shortest possible time' is to lead to investigation of existing NP processes in order to evaluate whether they are optimal or not.

It may be argued that recital 47 (whereas) of the revised USD ["...so that the number is functionally activated within one working day and the user does not experience a loss of service lasting longer than one working day. ..."] gives good arguments in favour of alternative 2.

4.3.7 Other Aspects

Other aspects of this sentence may also require some additional explanation:

- 'Subscribers'

The sentence specifically refers to subscribers, not consumers, and therefore it could be understood that the paragraph does not differentiate between residential and business customers. It also does not differentiate between customers with single numbers or multiple numbers holders such as large companies. This could create issues for countries that have longer porting times for customers with multiple numbers.

- 'Activated'

As discussed in 4.2, activation could be interpreted as the end point of the porting process. Activation means that the number is operational with the new (recipient) operator and the customer is able to make and receive calls/communications to and from any operators' network (details depending on the agreement). In some cases, e.g. MMS, the customer needs to activate the service himself (e.g. by installing the service options into his mobile phone).

- 'Within one working day'

Generally, a working day is Monday to Friday, excluding national holidays and weekends. The TFNP identified the following ways to understand 'one working day':

- (a) A 24 hour period after an agreement has been concluded, for example
Tuesday 13.30 to Wednesday 13.30
Friday 10.15 to Monday 10.15
- (b) The one working day period ends before the end of business hours on the next working day after an agreement has been concluded.

The TFNP noted that Council Regulation 1182/71² indicates that where a period expressed in days is to be calculated from the moment at which an event occurs or an action takes place (in this instance the 'conclusion of the agreement') the day which that event occurs or that action takes place shall not be considered as falling within the period in question. Given that regulation, (b) appears to be a reasonable interpretation. NRAs could nevertheless choose to adopt (a).

4.4 Sentence III

"Without prejudice to the first subparagraph, competent national authorities may establish the global process of porting of numbers, taking into account national provisions on contracts, technical feasibility and the need to maintain continuity of service to the subscriber."

The TFNP considered that this meant there is a margin of interpretation and discretion regarding how a country implements NP. There is room for different methods of implementation, taking into account national circumstances, as long as the first subparagraph is respected.

4.5 Sentence IV

"In any event, loss of service during the process of porting shall not exceed one working day."

² <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31971R1182:EN:HTML>.

In fact a one day loss of service is a very long time! In all existing European NP implementations as the TFNP is aware of, loss of service is much less than one working day. According to the study carried out by the TFNP (see Annex 1) the longest loss of service within CEPT countries is a few hours.

Loss of service means the time when the customer porting a number is not able to make and/or receive calls/communications. This time may not exceed one working day.

The loss of service is a problem of action synchronisation both in case of fixed number portability and in case of mobile number portability. In fact, after the validation, all the parties that must update their DBs have to do it in a specified time window to prevent loss of service. Moreover, in case of fixed number portability, physical connection changes might also have to be done in the time window.

This sentence could cast doubts on previous interpretations of the one working day requirement (outlined in the previous paragraphs above) because otherwise the same concept (i.e. 'one working day') is repeated twice. There is a question about whether the 'one working day' with loss of service means the same 'one working day' as that the number must be activated within.

Therefore the TFNP considered there were two potential interpretations of this sentence:

1. The one working day loss of service requirement is a subordinate clause to the requirement for numbers to be activated in one working day, i.e. the number has to be ported in one working day and the loss of service should also be no longer than one working day; or
2. The one working day requirement is only about loss of service, i.e. as long as loss of service does not exceed one working day the process will be compliant with the Article.

The TFNP considered that the first interpretation was more likely to be the intention of the sentence given that the second sentence of the Article (4.3) specifically refers to subscribers having their number activated within one working day. It is only during the activation period that there is a risk of a potential down time.

4.6 Sentence V

“Competent national authorities shall also take into account, where necessary, measures ensuring that subscribers are protected throughout the switching process and are not switched to another provider against their will.”

In order to protect customers from being switched to another provider against their will, different preventative techniques can be adopted, for example:

1. the donor provides the customer with a unique “switching code” on request, typically this code is valid only for a limited time period;
2. the donor provides to the customer with a permanent unique “switching code” (i.e. the customer does not have to specifically request it when the customer wants to switch). This code is typically provided in the customer’s monthly bill or in the reserved customer area of the operator’s website. The code does not expire.
3. written authorisation from the customer given to the recipient;
4. customer compensation and operator penalty.

From the customer’s point of view, the first solution can increase the time it takes to port the number, because of the added time involved in requesting and receiving the unique switching code. This may happen also in the second solution, because often the customer will not pay attention to the bill and is therefore unaware of the necessity of the “switching code” when asking for number portability from the recipient.

The third solution could be used together with the fourth solution. In particular, the recipient could be obliged to have a written authorisation from the customer. This potentially could be burdensome for the customer, although it could be presented at the recipient’s shop. The recipient would then be obliged to hold that written authorisation and, if necessary present it to prove the authenticity of the porting request. If the recipient requests a number portability from the donor without a written authorisation, a high operator penalty and high customer compensation could then be applied. It has to be noted that the potential for slamming in mobile number portability is generally more limited compared to geographic/fixed number portability. This is because customer cannot utilise the service of the new operator without having the SIM/USIM of the new operator. Therefore, for mobile number portability, slamming is more likely to be due to technical error and not because of fraudulent behaviour by the recipient. In the case of geographic/fixed number

portability, slamming could be handled by requiring very high levels of customer compensation together with an annulment of all customer invoices of the new operator.

5 IMPROVING NP EFFICIENCY

5.1 Introduction

The TFNP has identified different ways to understand the one-day rule in the revised Article 30. However, independently of the chosen interpretation and implementation, porting and the activation should be carried out within the shortest possible time, without unnecessary delays. Each country might therefore find it useful to investigate different measures to shorten porting times based on national circumstances.

There are other cases that might be more complicated, or maybe not possible to apply with the new short porting time and that is for example situations with big business subscribers with fixed connections. The situation might be even more complicated if the subscribers have connections spread all over the country, both with geographic numbers and non-geographic numbers. The procedure to port this kind of subscribers must be well planned and to do this in a short time might be challenging. However, business subscribers plan their portings well in advance, and thus the short porting time request is normally not an issue.

In order to improve NP efficiency, countries could investigate whether it is possible to shorten individual process times (e.g. validation time), improve communications between concerned parties, reduce valid reasons for rejection of porting and/or reduce contractual obstacles.

5.2 Shortening of Process Times

The TFNP has identified one way to increase NP efficiency from the subscriber’s point of view. This could be where new SIM cards from the recipient operator are handed out in the shop and the customer wants to have the card activated as soon as possible. Figure 4 gives an example of a theoretical optimized porting process within one working day.

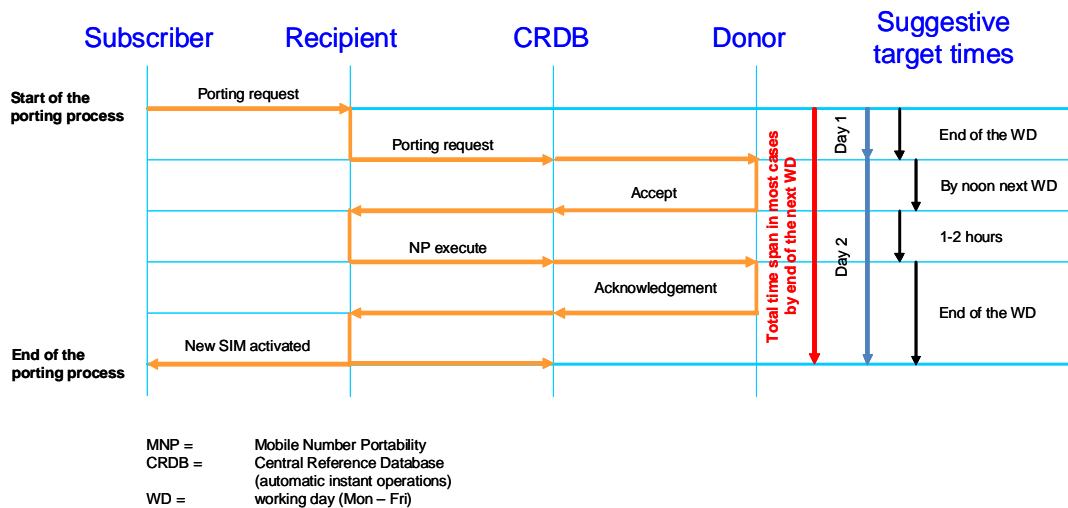


Figure 4: The generalized suggestive portability timers for mobile number portability utilizing the CRDB

The porting request is handed in by the customer to the recipient operator. The recipient has then until the end of the working hours that day (the 1st working day) to request a port. This means that a store could batch-up all the requests and process them at the end of business hours. The CRDB should immediately forward the request to the Donor who must answer (with validation of the request) by noon the next working day. This means that a provider has a window to handle all requests within several regular business hours. The NP execution should be sent within a couple of hours from noon on working day 2, which leaves a couple of hours for the final steps of the porting.

The validation process should not delay the whole porting process. NRAs should set time limits for the validation process where necessary.

In general, in order to obtain an efficient process to allow number portability within one working day, two aspects are particularly important:

- A method to avoid switching to another provider against the customer's will; and
- An efficient validation process.

To avoid the customer being switched against their will the recipient operator should receive a written authorisation from the customer to port their number. The recipient could be asked to show the number portability contract in case of problems.

For the validation process, it could be chosen to define a method that, on the one hand give sufficient reliability against errors and on the other hand is simple to implement and to control. Each SIM/USIM card has a serial number stamped on it. This card number is up to 19 digits long and it is defined by the ITU-T Recommendation E.118. The validation could therefore be based on this number. This method might be used particularly for pre-paid contracts; otherwise, in case of post-paid contract a code on the bill might be used.

In addition, in order to ensure reduce the timeframe for the validation process a completely automatic validation solution could be applied. This could particularly be necessary where there is a high volume of ports per day. An automatic validation process could potentially lead to lower costs (not taking into account any initial set-up costs) because no manual working would be required.³ An automated validation process also has the advantage of reducing the time in which the donor can respond to the validation request and also the time in which the donor is able to contact the customer for winback.

During the validation process only a few parameters are controlled:

- the SIM must be active;
- the code (ICC-ID / fiscal code) indicated in the MNP request by the customer must correspond to that one known by the donor.

It is also important that the NRA completely defines all the checks that must be carried out, as well as the possible reasons to reject a NP request. These measures increase the quality of NP process and avoid that operators add unnecessary controls (into the validation process) or reject an NP request without a legitimate reason.

Another possibility utilised in Italy to improve the validation is the following. In particular, it has been given the opportunity to the recipient (there is no obligation) to do a partial pre-validation. The client receives a personal code from the dealer of the recipient when he subscribes a request for MNP. Then, the recipient sends via SMS to client the main information related to the MNP (donor name, recipient name and number to be ported) asking for the confirmation of these data. The client confirms the correctness of the received data simply sending back the received personal number. As alternative, the operator can make a registered call to the client. If the client does not answer then the normal validation procedure is performed. In this way, the recipient checks that there is not wrong transcription of the number that have to be ported and moreover the recipient checks that the service on that number is really active. When the MNP request to the donor is sent, the recipient indicates that a partial pre-validation has been done and, consequently, the donor reduces the number of controls that must be done, like the control on SIM serial number and the control that the SIM is active. It is to be noted that since the personal code is given by the recipient, the donor cannot make anti-competitive actions trying to convince the client to withdraw the MNP request, as could instead be done when personal numbers are given by the donor.

5.3 Improving Communications between Parties

The TFNP identified some possible measures to improve communications between the parties involved in the NP process. One option is to reduce the amount of messages being exchanged between the recipient and the donor, e.g. by combining validation and execution messages. Another option is to limit opportunity for the donor to intervene.

5.3.1 Combining Validation and Execution Messages

In Turkish example, as explained below, in terms of message exchange between recipient and donor operators, validation message by donor is enough to initiate the actual porting. The process is as follows:

³ Human manual handling is, however, likely to be necessary for a limited number of cases, for example in handling any reported errors.

Number porting process starts upon the application of a customer with the request of number porting to the recipient.

Message exchange between recipient and donor is kept at minimum level. When the recipient sends the number porting request to donor through CRDB, donor returns either with validation (acceptance) together with the actual porting date and time, or with rejection message with relevant rejection reason if the rejection conditions exist as determined by the regulation. Donor validation message which includes porting date and time is simultaneously broadcasted to all operators connected to CRDB in order for them to make their routing arrangements accordingly. When the porting date and time comes, donor deactivates the line and sends the deactivation message to recipient. When recipient receives deactivation message, it activates the number. Process diagram below represents the message flow for Turkish example:

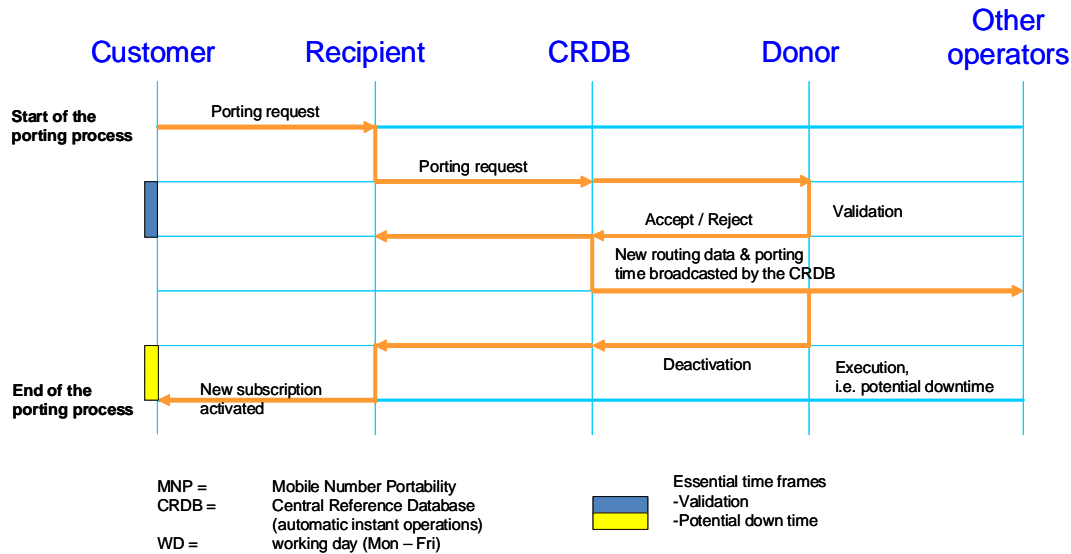


Figure 5: Combining Validation and Execution Messages

5.3.2 Increasing Overall NP Efficiency

Another option is to increase the efficiency of the system. At this aim, the record fields exchanged among operators should be limited to the fields that are really needed. This is what has been done in Italy. Fields that are not essential to the number portability should not be included in the set of field to be transmitted. For sake of examples, information regarding the technology used by the donor to provide the service, like E-TACS, GSM, UMTS, the serial number of the identification document of the client, and others, are not really needed for the MNP. So the transmission of such information should not be done, both in case the information is sent and it is not checked both in case the control is really done by the donor. In fact, in the first case, the transmission of the contract nature is only of waste of bandwidth and a possible opportunity for generation of transmission errors. In the second case, since the validation should be limited to some real important field or fields (e.g. the SIM/USIM serial number in case of MNP), it is a disadvantage checking data that are not really needed for the validation and that on the contrary can be wrong. Reducing the number of information requested to the client has also the advantage to concentrate the attention to the real needed information.

5.4 Contractual Obstacles

Other investigations to shorten the NP time could be carried out to make the porting independent of notice periods, allowing portings in a contract period against a proportionate “early termination fee”, in order to overcome the use of rollover contracts (a contract that continues automatically if the subscriber does not react), and prohibiting the usage of numbers as a security for unpaid bills.

Especially contracts with lock-in periods (e.g. 12, 18 or 24 months) are rather common in the mobile area, but could nowadays also be found in the fixed area with the use of different service packages, e.g. triple play. When the porting time shall be shortened there must be procedures how to handle these lock-in periods during the porting process.

In a substantial number of cases subscribers want to change service providers and port their numbers before the end of the contractual period. In many European countries⁴ regulators decoupled number portability from contractual obligations, so operators must in principle meet this subscriber demand. However, there are problems in other European countries with a different regime. This leads to, for example, problems where the roll-over contractual periods may be terminated by the subscriber within a short timeframe, e.g. one month. Problems mainly arise from a lock-in in the initial contractual phase which usually takes between six months and two years. The framework for regulating contractual periods of Article 30 of the USD could contribute to solve some of these problems.

Related to other services where assets are used as retention object to recover outstanding debts, the role of a number as a retention object is different. The retention of a number implies that a subscriber can not subscribe to a similar service with a different service provider and is forced to continue using a service he does not want, even when he would be prepared to pay the remaining part of the contract.

The major goal should be that subscribers who want to port have the right to do that at any time. One possible way of improving NP efficiency is to decouple the right to port a number from the contract period, possibly on the condition that the subscriber pays the cost for the rest of the lock-in period.

An alternative for leaving the contractual binding from the legal framework for number portability is to create the right for a single party to terminate a contract at any time. Also, this right could be attached to the condition that proportionate early termination fees are paid.

⁴ A questionnaire carried out in September 2010 revealed that in 13 European countries out of 18 replied countries number portability and contractual obligations are decoupled.

ANNEX 1: DIRECTIVES COMPARISON TABLE

Directive 2002/22/EC – the OLD text Article 30: Number Portability	Directive 2009/136/EC – the NEW text 21) Article 30 shall be replaced by the following:
<p>Article 30: Number Portability</p> <p>1. Member States shall ensure that all subscribers of publicly available telephone services, including mobile services, who so request can retain their number(s) independently of the undertaking providing the service:</p> <p>a) in the case of geographic numbers, at a specific location;</p> <p>and</p> <p>b) in the case of non-geographic numbers, at any location.</p> <p>This paragraph does not apply to the porting of numbers between networks providing services at a fixed location and mobile networks.</p>	<p>Article 30: Facilitating change of provider</p> <p>1. Member States shall ensure that all subscribers with numbers from the national telephone numbering plan who so request can retain their number(s) independently of the undertaking providing the service in accordance with the provisions of Part C of Annex I.</p>
<p>2. National regulatory authorities shall ensure that pricing for interconnection related to the provision of number portability is cost oriented and that direct charges to subscribers, if any, do not act as a disincentive for the use of these facilities.</p>	<p>2. National regulatory authorities shall ensure that pricing between operators and/or service providers related to the provision of number portability is cost-oriented, and that direct charges to subscribers, if any, do not act as a disincentive for subscribers against changing service provider.</p>
<p>3. National regulatory authorities shall not impose retail tariffs for the porting of numbers in a manner that would distort competition, such as by setting specific or common retail tariffs.</p>	<p>3. National regulatory authorities shall not impose retail tariffs for the porting of numbers in a manner that would distort competition, such as by setting specific or common retail tariffs.</p>
	<p>4. Porting of numbers and their subsequent activation shall be carried out within the shortest possible time. In any case, subscribers who have concluded an agreement to port a number to a new undertaking shall have that number activated within one working day.</p> <p>Without prejudice to the first subparagraph, competent national</p>

Directive 2002/22/EC – the OLD text Article 30: Number Portability	Directive 2009/136/EC – the NEW text 21) Article 30 shall be replaced by the following:
	<p>authorities may establish the global process of porting of numbers, taking into account national provisions on contracts, technical feasibility and the need to maintain continuity of service to the subscriber. In any event, loss of service during the process of porting shall not exceed one working day. Competent national authorities shall also take into account, where necessary, measures ensuring that subscribers are protected throughout the switching process and are not switched to another provider against their will.</p> <p>Member States shall ensure that appropriate sanctions on undertakings are provided for, including an obligation to compensate subscribers in case of delay in porting or abuse of porting by them or on their behalf.</p>
	<p>5. Member States shall ensure that contracts concluded between consumers and undertakings providing electronic communications services do not mandate an initial commitment period that exceeds 24 months. Member States shall also ensure that undertakings offer customers the possibility to subscribe to a contract with a maximum duration of 12 months.</p>
	<p>6. Without prejudice to any minimum contractual period, Member States shall ensure that conditions and procedures for contract termination do not act as a disincentive against changing service provider.</p>
	<p>Annex I, Part C: Implementation of the number portability provisions referred to in Article 30</p> <p>The requirement that all subscribers with numbers from the national numbering plan, who so request can retain their number(s) independently of the undertaking providing the service shall apply:</p>

Directive 2002/22/EC – the OLD text Article 30: Number Portability	Directive 2009/136/EC – the NEW text 21) Article 30 shall be replaced by the following:
	<p>a) in the case of geographic numbers, at a specific location;</p> <p>and</p> <p>b) in the case of non-geographic numbers, at any location.</p> <p>This Part does not apply to the porting of numbers between networks providing services at a fixed location and mobile networks.</p>

ANNEX 2: NATIONAL NP PROCEDURES

1 Austria

Austria		MNP (mobile)	FNP (fixed)
1.	Implementation year	2004	2002
2.	Central entity	No	No
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	N/A	N/A
4.	Donor/recipient led	Recipient	Recipient
5.	Comment on process	- - -	- - -
6.	National regulation	Art 23 of the Austrian Telecommunications Act (TKG 2003)	Art 23 of the Austrian Telecommunications Act (TKG 2003)
7.	National soft law / industry standards	Austrian "Nummernübetragungsverordnung" (NÜV)	Specifications between operators
8.	ACQ or onward routing	depends on source network: - mobile: ACQ - fixed: ACQ or onward routing	onward routing
9.	Regulated porting time	According to Art 6 of the Austrian "Nummernübetragungsverordnung" (NÜV) the porting process should be – if all the necessary conditions are complied – fulfilled within 3 working days unless the customer has not asked for a certain day.	No specific legal prescription; common periods of time are 1 to 4 weeks, depending on the technical complexity of the switching process.
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	There is no need of terminating any contract; it is also possible to port a number even if there are still unpaid bills.	Contract with the "old" operator has to be terminated otherwise the porting process won't be done. Besides that, it is also possible to port a number even if there are still unpaid bills.
11.	Regulated compensation for extending time limits	If there are any delays within the NÜV-Information a compensation of EUR 81.54 had to be paid. The mentioned decision is not in force any more as the higher administrative court has rescinded this notification. Nevertheless, the operators negotiated the MNP-process within contracts which are similar to the notification.	If the porting process is cancelled or delayed within the arranged time a fee of EUR 21.79 has to be paid.
12.	Regulated downtime	As short as possible (Art 7 NÜV); no further provisions are made by the NRA	Not regulated by the NRA
13.	Comment on downtime	No complaints of subscribers. Usually no interruption of the service	No complaints of subscribers. Usually no interruption of the service
14.	Average port price wholesale	EUR 8.21	EUR 21.79
15.	Comment of porting price e.g. are retail prices regulated	According to Art 23 (2) of the Austrian Telecommunications Act (TKG 2003) the "porting fee" has not be "deterrent" for costumers. The NRA decided that the porting fee should be (max.) EUR 15,-. Proceedings for appeal at the Austrian Higher Administrative Court concerning this decision are still pending.	Art 23 (3) TKG 2003 has also be applied for FNP. This iussue has not been regulated so far.
16.	Statistics, % port/churn in 2008	132,000 ported numbers in 2008 (approx. 1.3%)	N/A*
17.	How many portings a month in average	11,000	N/A*
18.	Are all numbers portable? E.g. premium rate numbers	Yes	Yes
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	37 (5 MNOs, 1 MVNO, 31 resellers)	- - -
20.	How many of the fixed operators are VoIP providers	- - -	214
21.	Do you have a publicly available web-site where the ported numbers can be checked	No	No
22.	Can you port a geographical number to another region	- - -	No
23.	Extra CRDB features	- - -	- - -

2 Belgium

Belgium		MNP (mobile)	FNP (fixed)
1.	Implementation year	2002	2000
2.	Central entity	CRDB	
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	non-profit org 75% paid by mobile 25% fixed, no staff	
4.	Donor/recipient led	rec	
5.	Comment on process		
6.	National regulation	mandated via law and secondary legislation	
7.	National soft law / industry standards	yes, the operational procedures, network aspects and NP standard agreements and SLA	
8.	ACQ or onward routing	most ACQ (mobile and non-geo)	fixed onward routing
9.	Regulated porting time	yes, e.g. donor has 1 day for simple mobile number to accept, (natural person)	
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	porting time windows specified in Royal Decree / donor can not refuse porting requests for contractual reasons or for unpaid phone bills	
11.	Regulated compensation for extending time limits	yes via SLA's	
12.	Regulated downtime	10 min for 95% of portings (simple installations fixed lines)	
13.	Comment on downtime		
14.	Average port price wholesale	eg. Simple installation 4,69 euro and complex installation	71,2 euro (NP in fixed networks)
15.	Comment of porting price e.g. are retail prices regulated	donor can not charge the customer for the porting / recipient is allowed to charge with maximum (for mobile)	
16.	Statistics, % port/churn in 2008		
17.	How many portings a month in average	161.405 geographical numbers were ported on a total installed base of 4,84 Million (31st December 2007) equivalent lines in the time period 1st October 2007 – 1st October 2008; or a proportion of 3,34% per year. On the 1st January 2010 in total 1.623.090 numbers or a total proportion of 33,5% of fixed numbers were ported. 512.381 mobile numbers were ported on a total installed base of 9,865 Million active GSM-customers (1st October 2007 – 1st October 2008) or a proportion of 5,2% per year. The proportion of total active ported number on 1th January 2010 is: 31,3 %	
18.	Are all numbers portable? E.g. premium rate numbers	yes	
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	30	
20.	How many of the fixed operators are VoIP providers	5	
21.	Do you have a publicly available web-site where the ported numbers can be checked	yes, www.1299.be, www.1399.be,	
22.	Can you port a geographical number to another region	no, no location portability is allowed between numbering areas	
23.	Extra CRDB features	number location info	

3 Bulgaria

Bulgaria		MNP (mobile)	FNP (fixed)
1.	Implementation year	2008	2009
2.	Central entity	no	
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?		
4.	Donor/recipient led	Recipient (donor up to 06.08.2010)	
5.	Comment on process		
6.	National regulation	ecom act art. 134 and 136	
7.	National soft law / industry standards		
8.	ACQ or onward routing	ACQ or OR	
9.	Regulated porting time	7	7-10
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	all existing bills that have arisen and become executable before the date of request for porting shall be paid	
11.	Regulated compensation for extending time limits	no	
12.	Regulated downtime	no more than 7 hours	no more than 8 hours
13.	Comment on downtime	for 0.5 % of mobile portings 7 hours is exceeded	3% of fixed portings 8 hours is exceeded
14.	Average port price wholesale	wholesale 9 €	wholesale 9 €
15.	Comment of porting price e.g. are retail prices regulated	retail 0 euro collected by recipient	
16.	Statistics, % port/churn in 2008	2008 - under 1% of mobile numbers; 2009 - 0.54%	0.4%
17.	How many portings a month in average	no data available	
18.	Are all numbers portable? E.g. premium rate numbers	non-geographic number portability (700/800/90) has started in August 2010	
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	3	22
20.	How many of the fixed operators are VoIP providers	19	
21.	Do you have a publicly available web-site where the ported numbers can be checked	no	
22.	Can you port a geographical number to another region	no	
23.	Extra CRDB features		2009

4 Croatia

Croatia		MNP (mobile)	FNP (fixed)
1.	Implementation year	2006	2005
2.	Central entity	Central Administrative Database of Ported Numbers (CADP)	Central Administrative Database of Ported Numbers (CADP)
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	Database administrator is HAKOM (Croatian Post and Electronic Communications Agency) who is responsible for the establishment, development, testing, maintaining and managing the CADP of ported numbers.	Database administrator is HAKOM (Croatian Post and Electronic Communications Agency) who is responsible for the establishment, development, testing, maintaining and managing the CADP of ported numbers.
4.	Donor/recipient led	Recipient led	Recipient led
5.	Comment on process	-	-
6.	National regulation	Article 76 of the Croatian electronic communications Act (Official Gazette of the Republic of Croatia, no. 73/08)	Article 76 of the Croatian electronic communications Act (Official Gazette of the Republic of Croatia, no. 73/08)
7.	National soft law / industry standards	Ordinance on number portability (Official Gazette of the Republic of Croatia, no. 42/09)	Ordinance on number portability (Official Gazette of the Republic of Croatia, no. 42/09)
8.	ACQ or onward routing	ACQ	ACQ
9.	Regulated porting time	5 days	5 days
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	Yes. According on the article 7. of Ordinance on number portability (Official Gazette of the Republic of Croatia, no. 42/09) customers can port even though they have unpaid phone bills. Regardless of the termination of subscription as a result of NP, the provisions of the subscriber contract between the donor operator and the user concerning payment and/or return of equipment shall apply until the outstanding balance for the service in question has been paid.	Yes. According on the article 7. of Ordinance on number portability (Official Gazette of the Republic of Croatia, no. 42/09) customers can port even though they have unpaid phone bills. Regardless of the termination of subscription as a result of NP, the provisions of the subscriber contract between the donor operator and the user concerning payment and/or return of equipment shall apply until the outstanding balance for the service in question has been paid.
11.	Regulated compensation for extending time limits	N/A	N/A
12.	Regulated downtime	no more than 3 hours	no more than 3 hours
13.	Comment on downtime	-	-
14.	Average port price wholesale	40 Kuna (≈ 5,50 €)	40 Kuna (≈ 5,50 €)
15.	Comment of porting price e.g. are retail prices regulated	According on the article 11. of Ordinance on number portability (Official Gazette of the Republic of Croatia, no. 42/09) the recipient operator shall bear administrative costs of the Donor Operator related to the number portability procedure in the maximum amount of HRK 40.00 per an executed Port Request.	According on the article 11. of Ordinance on number portability (Official Gazette of the Republic of Croatia, no. 42/09) the recipient operator shall bear administrative costs of the Donor Operator related to the number portability procedure in the maximum amount of HRK 40.00 per an executed Port Request.
16.	Statistics, % port/churn in 2008	-	-
17.	How many portings a month in average	≈ 270	≈ 270
18.	Are all numbers portable? E.g. premium rate numbers	Yes, except series for short telephone numbers and access code to non-public communications networks, or they are in VPN or ISDN group or some other group.	Yes, except series for short telephone numbers
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	3 MNO, n/a MVNO	-
20.	How many of the fixed operators are VoIP providers	-	10
21.	Do you have a publicly available web-site where the ported numbers can be checked	Yes. www.hakom.hr	Yes. www.hakom.hr
22.	Can you port a geographical number to another region	-	-
23.	Extra CRDB features	-	-

5 Czech Republic

Czech Republic		MNP (mobile)	FNP (fixed)
1.	Implementation year	2006	2002
2.	Central entity	CRDB	CRDB
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	Database administrator CNPAC - Czech Number Portability Administrative Center	Database administrator CNPAC - Czech Number Portability Administrative Center
4.	Donor/recipient led	recipient	recipient
5.	Comment on process	According to Measure of General Nature No. OOP/10/07.2005-3	According to Measure of General Nature No. OOP/10/07.2005-3
6.	National regulation	Electronic Communications Act No.127/2005, § 34	Electronic Communications Act No.127/2005, § 34
7.	National soft law / industry standards	Measure of General Nature No. OOP/10/07.2005-3	Measure of General Nature No. OOP/10/07.2005-3
8.	ACQ or onward routing	ACQ	ACQ
9.	Regulated porting time	currently 14 working days	currently 10 working days
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	Porting after expiration of a fixed-term contract.	Porting after expiration of a fixed-term contract.
11.	Regulated compensation for extending time limits	No	No
12.	Regulated downtime	3 hours	6 hours
13.	Comment on downtime		
14.	Average port price wholesale	19€	22€
15.	Comment of porting price e.g. are retail prices regulated	not regulated	not regulated
16.	Statistics, % port/churn in 2008	0,1%	0,3%
17.	How many portings a month in average	15 000	2 500
18.	Are all numbers portable? E.g. premium rate numbers	Yes, except series for short telephone numbers, paging services, special range for VoIP services and access code to non-public communications networks.	Yes, except series for short telephone numbers, paging services, special range for VoIP services and access code to non- public communications networks.
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	4 MNO, n/a MVNO	-
20.	How many of the fixed operators are VoIP providers	-	400 notified
21.	Do you have a publicly available web-site where the ported numbers can be checked	No	No
22.	Can you port a geographical number to another region		No
23.	Extra CRDB features	CRDB-M is separate for mobile	CRDB-F is separate for fixed

6 Denmark

Denmark		MNP (mobile)	FNP (fixed)
1.	Implementation year	oct 2001	jan 2001 (geoport 1999)
2.	Central entity	OCH	
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	OCH (operators clearing house a/s) owned by 3 largest operator	
4.	Donor/recipient led	rec	
5.	Comment on process		
6.	National regulation	36 and 37, can port, and customer shall not pay donor operator	
7.	National soft law / industry standards	standard argeements	
8.	ACQ or onward routing	ACQ	
9.	Regulated porting time	no	
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	usually 30 days notice period. Unpaid bills are no obstacle for porting	
11.	Regulated compensation for extending time limits	no	
12.	Regulated downtime	no	
13.	Comment on downtime		
14.	Average port price wholesale	set individually by each operator	
15.	Comment of porting price e.g. are retail prices regulated	not regulated	
16.	Statistics, % port/churn in 2008	8%	9%
17.	How many portings a month in average	555.000 portings a year (2008)	241.000 portings a year (2008)
18.	Are all numbers portable? E.g. premium rate numbers	yes	
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	46/27	
20.	How many of the fixed operators are VoIP providers	no statistics	
21.	Do you have a publicly available web-site where the ported numbers can be checked	partly. You can see which operator has been assigned which numbering range originally	
22.	Can you port a geographical number to another region	yes	
23.	Extra CRDB features		

7 Finland

Finland		MNP (mobile)	FNP (fixed)
1.	Implementation year	2003	1998
2.	Central entity	Suomen Numerot Numpac Oy	
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	3 big operators, non profit	
4.	Donor/recipient led	rec	
5.	Comment on process		
6.	National regulation	Communications markets act sec 51, FICORA regulation	
7.	National soft law / industry standards	NP procedures	
8.	ACQ or onward routing	ACQ	
9.	Regulated porting time	5	
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	Minimum contract periods and roll-over contracts problematic, porting possible even if unpaid phone bills	
11.	Regulated compensation for extending time limits		
12.	Regulated downtime	10 min	60 min
13.	Comment on downtime		
14.	Average port price wholesale	9 €	19,40 €
15.	Comment of porting price e.g. are retail prices regulated	Donor operator cannot charge in retail level	
16.	Statistics, % port/churn in 2008		
17.	How many portings a month in average	50 000	1 500
18.	Are all numbers portable? E.g. premium rate numbers	practically all numbers	
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	16/51	
20.	How many of the fixed operators are VoIP providers		
21.	Do you have a publicly available web-site where the ported numbers can be checked	yes	
22.	Can you port a geographical number to another region	Physical location of the terminal equipment is not regulated, but the number must act like it was in the correct geographical region	
23.	Extra CRDB features		

8 France

France		MNP (mobile)	FNP (fixed)
1.	Implementation year	2003 (phase 1) but the system evolved and the current process lasts since 2007 (phase 2)	1998 for geographic numbers only and extended to all kind of numbers in 2002 (including freephone and PRS)
2.	Central entity	Yes. All processes and routing data go through entity "GIE EGP Mobile"	The entity APFN was created in 2009 but only as first step for routing data database exchanges. It is planned to handle processes in the future
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	The 2 entities have been created and financed by operators based on a loan that is paid back to the members with the cost of the portings. They have contracted with third party for the building and maintenance of the systems.	
4.	Donor/recipient led	Recipient led	Recipient led
5.	Comment on process	Standardized	On bilateral basis
6.	National regulation	Law in 2006 (décret n°2006-82) Arcep's Decision n°2009-0637 clarifies existing obligations regarding FNP	
7.	National soft law / industry standards		
8.	ACQ or onward routing	Both systems are authorised but we promote development of direct routing based on ACQ by the use of central databases. Nevertheless all operators have QoS obligation regarding numbers, ported or not.	
9.	Regulated porting time	10 calendar days max In practice, average of 7 days	10 calendar days max. Depends on the availability of the access but inter operator processes are based on 10 days
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	Reasons for rejecting a porting request are very limited and controlled. Unpaid phone bills is not one of them.	
11.	Regulated compensation for extending time limits	No rules but customers complain directly to the recipient operator.	
12.	Regulated downtime	Downtime is regulated : 4 hours max	Downtime is regulated : Best effort but objective to reach 6 hours by 01/01/2011 and 4 hours by 01/01/2012
13.	Comment on downtime		
14.	Average port price wholesale	0,50 € per number paid to the central entity	6,00 € per request + 1,50 € per number for business customers ; 1,50 € per request + 1,50 € per number for residential customers
15.	Comment of porting price e.g. are retail prices regulated	No regulation but only the recipient operator may bill the porting to the customer. Usually it is free	
16.	Statistics, % port/churn in 2008	1,37 million numbers ported in 2008	2,33 million numbers in 2008
17.	How many portings a month in average		
18.	Are all numbers portable? E.g. premium rate numbers	Yes	Yes
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	27 mobile operators are active but there are several other projects in the short term (resellers are not considered as operators so they are out of our scope)	
20.	How many of the fixed operators are VoIP providers		14 operators have declared VoIP but as we are technology neutral, VoIP operators has to declare as telephony service providers (and do not always say under which technology they provide voice, then we assume they are much more than 14)
21.	Do you have a publicly available web-site where the ported numbers can be checked	No, but the porting database is accessible to the police and the emergency services for legal requirement purposes	
22.	Can you port a geographical number to another region	No, the numbering plan do not authorise such practice	
23.	Extra CRDB features		

9 Germany

Germany		MNP (mobile)	FNP (fixed)
1.	Implementation year	2002	1998
2.	Central entity	yes	No
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	civil law association (4 network operators + 2 MVNOs) runs central master routing database	AKNN, decentral databases
4.	Donor/recipient led	Rec	Rec
5.	Comment on process	old contract must be ended by the day of porting, customer must order the porting	old contract must be ended by the day of porting, customer must order the porting
6.	National regulation	section 46 of German Telecommunications Act (TKG)	section 46 of German Telecommunications Act (TKG)
7.	National soft law / industry standards	specifications	specifications
8.	ACQ or onward routing	depending on the network operator	depending on the network operator
9.	Regulated porting time	not regulated by NRA; 0 days if customer orders porting on time, otherwise 3 days	not regulated by NRA; 0 days if customer orders porting on time, otherwise 5 days
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	old contract must be ended by the day of porting; customer must order porting 31 days after contract ends; customer may port even though there are unpaid phone bills	old contract must be ended by the day of porting; customer must order porting before contract ends; customer may port even though there are unpaid phone bills
11.	Regulated compensation for extending time limits	No	No
12.	Regulated downtime	Not regulated by NRA	not regulated by NRA
13.	Comment on downtime	no down time, if customer orders porting on time	no down time, if customer orders porting on time
14.	Average port price wholesale	no wholesale prices	no wholesale prices
15.	Comment of porting price e.g. are retail prices regulated	customer pays max. ca. 30 € (upper price limit set by NRA)	customer pays 5,81 € (no price limit, but NRA may ex post)
16.	Statistics, % port/churn in 2008	2,8 million of 100 customers up to 2008 (=appr. 2,8%)	58,6 million of 295,4 million numbers up to 2008 (=appr. 19,8%)
17.	How many portings a month in average	appr. 40.000 a month within the last few years	no data
18.	Are all numbers portable? E.g. premium rate numbers	yes, in accordance with section 46 TKG geographic and non-geographic numbers are portable	yes, in accordance with section 46 TKG geographic and non-geographic numbers are portable
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	appr. 150 brands, therefore less operators	appr. 300 operators
20.	How many of the fixed operators are VoIP providers	-	appr. 80 fixed operators offered VoIP in 2007
21.	Do you have a publicly available web-site where the ported numbers can be checked	on www.http://www.tarifip.de/artikel/16246/Handynummer-mitnehmen.html the customer can check how to request which operator operates which number	No
22.	Can you port a geographical number to another region		No
23.	Extra CRDB features		

10 Hungary

Hungary		MNP (mobile)	FNP (fixed)
1.	Implementation year	2004	2004
2.	Central entity	NRA (CRDB)	NRA (CRDB)
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	CRDB: No usage fee (operational costs are covered by number usage fees)	CRDB: No usage fee (operational costs are covered by number usage fees)
4.	Donor/recipient led	recipient-led or donor-led	recipient-led,
5.	Comment on process	customer can choose (most common donor-led)	-
6.	National regulation	El.Com. Act art 150, NP reg: Gov. decree, CRDB: Min. decree	El.Com. Act art 150, NP reg: Gov. decree, CRDB: Min. decree
7.	National soft law / industry standards	CRDB technical specification	CRDB technical specification
8.	ACQ or onward routing	Direct routing: ACQ or QoR, operator can choose	Direct routing: ACQ or QoR, operator can choose
9.	Regulated porting time	8 working days	8 working days
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	donor can refuse porting in case of expired bill debt	donor can refuse porting in case of expired bill debt
11.	Regulated compensation for extending time limits	no	no
12.	Regulated downtime	4 hours	4 hours
13.	Comment on downtime		
14.	Average port price wholesale	0 €	5-10 €
15.	Comment of porting price e.g. are retail prices regulated	Regulation: The donor service provider shall have the right to charge a one-off fee for porting numbers that shall be paid by the donor service provider to the recipient service provider. The fee charged may not exceed the justified and reasonable costs of porting numbers. The recipient service provider shall be authorized to charge this one-off fee, in full or in part, to the customer whose number is being ported	
16.	Statistics, % port/churn in 2008	total: 2,8% 2009: 0,6%	total: 15% 2009: 4,5%
17.	How many portings a month in average	2009: 5 400	2009: 11 400
18.	Are all numbers portable? E.g. premium rate numbers	yes	yes
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	3	120
20.	How many of the fixed operators are VoIP providers		
21.	Do you have a publicly available web-site where the ported numbers can be checked	no	no
22.	Can you port a geographical number to another region		no
23.	Extra CRDB features		location portability within numbering area for geo numbers

11 Italy

Italy	MNP (mobile)	FNP (fixed)
1. Implementation year	2002	2000
2. Central entity	Ministry is informed, but it is not in the middle of the message exchange.	Ministry is informed, but it is not in the middle of the message exchange.
3. Comment on organisation, actors, profit, funding, outsourced companies? Other?	Distributed solution, each operator sends message to all the other ones	Distributed solution, each operator sends message to all the other ones
4. Donor/recipient led	rec	rec or donor
5. Comment on process		
6. National regulation	resolution n. 78/08/CIR	resolution n. 274/07/CONS
7. National soft law / industry standards	National standard agreement	National standard agreement
8. ACQ or onward routing	ACQ	ACQ NG numbers - OWR geographic numbers
9. Regulated porting time	3 working days	8 working days
10. Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	Porting time refers to realization time, not at the activation time that start with the client request. Porting cannot be refuse because of unpaid bills	Porting time refers to realization time. No at the activation time that start with the client request
11. Regulated compensation for extending time limits	SLA foreseen at least 50 € in case of porting delay	
12. Regulated downtime	2 hours	
13. Comment on downtime	DB's for NP updated in more than one window. Each window is 2 hours. SLA for delay.	
14. Average port price wholesale	0 €	8,94 €
15. Comment of porting price e.g. are retail prices regulated	retail price not regulated. 0 € applied	retail price no regulated. 0 € applied
16. Statistics, % port/churn in 2008	4,50%	
17. How many portings a month in average	420 000	
18. Are all numbers portable? E.g. premium rate numbers	yes	yes
19. How many mobile operators are active (including MNOs, MVNOs, resellers)	4 MNO, 14 virtual	
20. How many of the fixed operators are VoIP providers		
21. Do you have a publicly available web-site where the ported numbers can be checked	Not regulated, but most mobile operators say if the number is on-net or off.net. This service is also provided calling the number 456 followed by the mobile number	
22. Can you port a geographical number to another region		No
23. Extra CRDB features		
	most contracts are pre-paid. Clients can transfer the credit from the donor to the recipient operator	
	Rejection conditions are regulated. No win back activity is allowed till portability is completed	

12 Lithuania

Country	Lithuania		
		MNP (mobile)	FNP (fixed)
1.	Implementation year	2004	
2.	Central entity	CDB	
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	The Central Database Administrator shall be responsible for creating the central database. The number portability central database administrator is Joint Stock Company "Mano numeris".	
4.	Donor/recipient led		
5.	Comment on process	When changing a provider of telephone services, a customer's written application submitted to the Recipient, shall form the basis for number portability. In the event the customer uses public telephone services of the Donor, which the customer's Donor does not identify, the customer must, together with the application, submit evidence that he/she is a Party to the Agreement concluded with the Donor. The Recipient shall be responsible for the adequate basis for number portability.	
6.	National regulation	In October of 2003, RRT published Terms and Conditions for NP implementation. ORDER NO. 129 16 October 2003	
7.	National soft law / industry standards	The Central Database Administrator shall be responsible for creating the central database. The Central Database Administrator, consulting the public telephone networks operators and providers of public telephone services operating in the Republic of Lithuania shall prepare the conditions for using the database, including financial, technical and administration requirements so that number portability should be ensured in changing a provider of telephone services by means of the central database, and shall co-ordinate these conditions with the Communications Regulatory Authority.	
8.	ACQ or onward routing	ACQ	
9.	Regulated porting time	5 working days	5 working days
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	Operators shall have no right to restrict the customer's right to number portability.	
11.	Regulated compensation for extending time limits		
12.	Regulated downtime	3 hours	
13.	Comment on downtime	The customer number portability process must be carried out in such a way that the provision of public telephone services to the customer should be cut for no longer than 3 hours, with the exception of cases when the customer agrees to a longer time period.	
14.	Average port price wholesale	The Donor and Recipient shall have no right to take any fee related to customer's number portability when changing a provider	
15.	Comment of porting price e.g. are retail prices regulated	Public telephone networks operators and providers of public telephone services shall finance the activity of the Central Database Administrator by regularly paid fees in proportion to the number of the customer numbers allocated to them	
16.	Statistics, % port/churn in 2008	6%	1,6 %
17.	How many portings a month in average	10617	446
18.	Are all numbers portable? E.g. premium rate numbers	Yes	
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	5	15
20.	How many of the fixed operators are VoIP providers		
21.	Do you have a publicly available web-site where the ported numbers can be checked	Information about which operator's network the number belongs to is available on the Internet at http://nnpas.numeris.lt/wpquery/pnQuery.html	
22.	Can you port a geographical number to another region	No	
23.	Extra CRDB features		

13 The Former Yugoslav Republic of Macedonia

The Former Yugoslav Republic of Macedonia		MNP (mobile)	FNP (fixed)
1.	Implementation year	2008	2008
2.	Central entity	NRA (CDB)	NRA (CDB)
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	NRA shall develop, manage and maintain the CDB system. NRA shall bear the costs for the CDB system establishment and operation from the fee for utilization of assigned numbers and series of numbers	
4.	Donor/recipient led	recipient	recipient
5.	Comment on process	“One-stop” shopping	“One-stop” shopping
6.	National regulation	Law for Electronic Communications, article 85 Rules for Number Portability, NRA	
7.	National soft law / industry standards	Technical Description of the Transactions and Communication Interface among the CDB system and operators (v.2.5)	
8.	ACQ or onward routing	onward	onward
9.	Regulated porting time	2 working days	2 working days
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	Last bill should be paid	Last bill should be paid
11.	Regulated compensation for extending time limits	No	No
12.	Regulated downtime	Time framework for a number porting means the time period from 12:00 to 16:00 hours every working day in which the provision of the service of the operator-provider is elapsing on the basis of prior concluded subscriber contract with the operator and the provision of the service by the operator-receiver is starting on the basis of concluded subscriber contract for number portability. In this time period the provision of the service may be breached partially or completely	
13.	Comment on downtime	It is the max time period in which the provision of the service may be breached partially or completely	
14.	Average port price wholesale	In June/2009 Director of the Agency for electronic communications (NRA) issued a decision that the max one-time fee for number porting, independently if it is charged from the operator-recipient or from the subscriber is 200,00 MKD or approx. 3,23 € (no VAT incl.) per ported number or ported series of numbers on network termination point	
15.	Comment of porting price e.g. are retail prices regulated	In June/2009 Director of the Agency for electronic communications (NRA) issued a decision that the max one-time fee for number porting, independently if it is charged from the operator-recipient or from the subscriber is 200,00 MKD or approx. 3,23 € (no VAT incl.) per ported number or ported series of numbers on network termination point	
16.	Statistics, % port/churn in 2008		
17.	How many portings a month in average	400	1000
18.	Are all numbers portable? E.g. premium rate numbers	Yes	Yes
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	3	
20.	How many of the fixed operators are VoIP providers		9
21.	Do you have a publicly available web-site where the ported numbers can be checked	Yes, www.aec.mk	
22.	Can you port a geographical number to another region		No, only within the geographic numbering area with the same NDC
23.	Extra CRDB features	Reports (weekly, monthly, annually)	

14 Malta

Malta	MNP (mobile)	FNP (fixed)
1. Implementation year	2005	2006
2. Central entity	No	
3. Comment on organisation, actors, profit, funding, outsourced companies? Other?		
4. Donor/recipient led	Recipient led	
5. Comment on process	Customer requests recipient operator to port the number on his behalf. The recipient will then proceed with the porting process.	
6. National regulation	Electronic Communications Networks and Services - Subsidiary legislation 399.28	
7. National soft law / industry standards	Introducing Number Portability in Malta. Report on consultation and decision. March 2005 (updated March 2009)	
8. ACQ or onward routing	ACQ for mobile	Onward allowed for fixed
9. Regulated porting time	mobile within 1 working day	fixed maximum of 5 working days
10. Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	Customer is not allowed to port in case of overdue bills.	
11. Regulated compensation for extending time limits	n/a	
12. Regulated downtime	n/a	
13. Comment on downtime	At no point the customer i	
14. Average port price wholesale	9 € (however this is currently being reviewed to 1,35 € following consultation with the operators)	16 € (however this is currently being reviewed to 2,70 € following consultation with the operators)
15. Comment of porting price e.g. are retail prices regulated	only the recipient can request a payment for the porting process which is not regulated.	
16. Statistics, % port/churn in 2008	12%	2%
17. How many portings a month in average	4000	350
18. Are all numbers portable? E.g. premium rate numbers	PATS	Fixed and Freephone numbers
19. How many mobile operators are active (including MNOs, MVNOs, resellers)	4	5
20. How many of the fixed operators are VoIP providers	2	
21. Do you have a publicly available web-site where the ported numbers can be checked	No, but customer can check via sms or IVR whether called number is on net or ofnet	
22. Can you port a geographical number to another region	yes	
23. Extra CRDB features		

15 Norway

Norway		MNP (mobile)	FNP (fixed)
1.	Implementation year	2001	1999
2.	Central entity	CRDB	
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	Company owned by large operators, non profit	
4.	Donor/recipient led	rec	
5.	Comment on process		
6.	National regulation	Ecom act. § 7-3. Ecom regulation § 3-5 and 3-6	
7.	National soft law / industry standards	Administrative routines for CRDB	
8.	ACQ or onward routing	ACQ	
9.	Regulated porting time	5	
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	Recipient request is the starting point. No notice period obstacles. Porting possible in despite of unpaid phone bills.	
11.	Regulated compensation for extending time limits		
12.	Regulated downtime	no regulation	
13.	Comment on downtime	usually just some minutes on mobile	
14.	Average port price wholesale	10,4	13,5
15.	Comment of porting price e.g. are retail prices regulated	retail level not regulated	
16.	Statistics, % port/churn in 2008	12%	16%
17.	How many portings a month in average	50 000	25 000
18.	Are all numbers portable? E.g. premium rate numbers	yes	
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	29/87	
20.	How many of the fixed operators are VoIP providers	77	
21.	Do you have a publicly available web-site where the ported numbers can be checked	no	
22.	Can you port a geographical number to another region	Yes, but voluntary for the providers to provide this	
23.	Extra CRDB features	caller location, xdsi authorisation base,	

16 Romania

Romania		MNP (mobile)	FNP (fixed)
1.	Implementation year	2008	
2.	Central entity	CRDB	
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	owned and operated by ANCOM, implemented by UTI (Romanian company) and Porthus (Belgium)	
4.	Donor/recipient led	rec	
5.	Comment on process		
6.	National regulation	Art. 28 of Law no. 304/2003	
7.	National soft law / industry standards	ANCOM decisions - 144/2006 and 3444/2007	
8.	ACQ or onward routing	ACQ	
9.	Regulated porting time	max 10 days	
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	no contractual obstacles - contractual issues between customer and donor provider should be fulfilled, but does not affect portability process	
11.	Regulated compensation for extending time limits		
12.	Regulated downtime	max 4 hours	Max 5 hours
13.	Comment on downtime	This is the max. time for activation of a ported number. In practice this time is shorter	
14.	Average port price wholesale	5,60 €	7,80 €
15.	Comment of porting price e.g. are retail prices regulated	not regulated, in practice - free (promotions)	
16.	Statistics, % port/churn in 2008	1% (0,6%)	1 % (1,5 %)
17.	How many portings a month in average	11.000	5.100
18.	Are all numbers portable? E.g. premium rate numbers	yes	
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	6 MNO	65
20.	How many of the fixed operators are VoIP providers		50
21.	Do you have a publicly available web-site where the ported numbers can be checked	yes - www.portabilitate.ro	
22.	Can you port a geographical number to another region	no	
23.	Extra CRDB features		

17 Slovak Republic

Slovak Republic		MNP (mobile)	FNP (fixed)
1.	Implementation year	2005	2005
2.	Central entity		
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?		
4.	Donor/recipient led	recipient	Recipient
5.	Comment on process	According to NRA Measure No.19/2008	
6.	National regulation	Electronic Communications Act 610/2003 - article 48, NRA Measure No.19/2008 - Rules of Number Portability Provision	
7.	National soft law / industry standards		
8.	ACQ or onward routing	onward routing	onward routing
9.	Regulated porting time	5 working days	5 working days
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?		
11.	Regulated compensation for extending time limits	no	No
12.	Regulated downtime	No regulation	No regulation
13.	Comment on downtime	According to recipient and user agreement	According to recipient and user agreement
14.	Average port price wholesale	5 €	49,8 €
15.	Comment of porting price e.g. are retail prices regulated	recommendation do not exceed retail price 4 €	recommendation do not exceed retail price 4 €
16.	Statistics, % port/churn in 2008	0,3 %	9,1%
17.	How many portings a month in average	744	3893
18.	Are all numbers portable? E.g. premium rate numbers	Portability is obliged for: subscriber numbers, value added service numbers except for televoting	Portability is obliged for: subscriber numbers, value added service numbers except for televoting
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	3 MNO	
20.	How many of the fixed operators are VoIP providers		12
21.	Do you have a publicly available web-site where the ported numbers can be checked		
22.	Can you port a geographical number to another region		no
23.	Extra CRDB features		

18 Sweden

Sweden		MNP (mobile)	FNP (fixed)
1.	Implementation year	2001	1999
2.	Central entity	SNPAC (RefNPDB)	SNPAC (RefNPDB)
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	The RefNPDB function is run by the company SNPAC that is owned by 4 operators. Has been in operation since 1/9 2001.	The RefNPDB function is run by the company SNPAC that is owned by 4 operators. Has been in operation since 1/9 2001.
4.	Donor/recipient led	Rec.	Rec.
5.	Comment on process	-	-
6.	National regulation	PTSFS 2010:4	PTSFS 2010:4
7.	National soft law / industry standards	Industry fora NP-Forum for questions concerning the operation of RefNPDB (SNPAC)	Industry fora NP-Forum for questions concerning the operation of RefNPDB (SNPAC)
8.	ACQ or onward routing	ACQ/Direct Routing or OR/Indirect Routing, but ACQ/Direct Routing most common	ACQ or OR, but ACQ most common
9.	Regulated porting time	3 working days for mobile numbers	3 working days except business customers where 10 working days apply
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	Unregistered pre-paid SIM/USIM cards can be ported if the customer makes a registration. Porting for subscriptions with lock-in periods (e.g. 12 month) is possible.	Porting for subscriptions with lock-in periods (e.g. 12 month) is possible.
11.	Regulated compensation for extending time limits	N/A	N/A
12.	Regulated downtime	+/- 30 min. according to Industry fora agreements	+/- 30 min. according to Industry fora agreements
13.	Comment on downtime	-	-
14.	Average port price wholesale	According to operators price lists	According to operators price lists (2009). For the incumbent prices start at 34 SEK for one geographic number up to 1 185 SEK for a series of number for location independent services (NDC 10) and 16 SEK for one mobile number.
15.	Comment of porting price e.g. are retail prices regulated	Donor operator can not charge customer that want to port his number.	Donor operator can not charge customer that want to port his number.
16.	Statistics, % port/churn in 2008	See www.snpac.se	See www.snpac.se
17.	How many portings a month in average	See www.snpac.se	See www.snpac.se
18.	Are all numbers portable? E.g. premium rate numbers	All types of mobile E.164 numbers are portable except series 074 for paging services	All types of fixed E.164 numbers are portable except series 099 for mass call services
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	Ca 20	N/A
20.	How many of the fixed operators are VoIP providers	N/A	Ca 40 out of ca 65 total
21.	Do you have a publicly available web-site where the ported numbers can be checked	Yes - https://nummertjanster.pts.se/net/en/Nummerkapacitet/Enskiltnummer	Yes - https://nummertjanster.pts.se/net/en/Nummerkapacitet/Enskiltnummer
22.	Can you port a geographical number to another region	N/A	No
23.	Extra CRDB features	Keep information on all allocated and assigned numbers in the telephony numbering plan.	Keep information on all allocated and assigned numbers in the telephony numbering plan.

19 Switzerland

Switzerland		MNP (mobile)	FNP (fixed)
1.	Implementation year	2000	2000
2.	Central entity	INet-Server by Teldas GmbH	INet-Server by Teldas GmbH
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	private limited company, founded by major operators	private limited company, founded by major operators
4.	Donor/recipient led	rec	rec
5.	Comment on process	one stop shopping for porting customers, recipient operator obliged to coordinate the administrative process	one stop shopping for porting customers, recipient operator obliged to coordinate the administrative process
6.	National regulation	http://www.bakom.admin.ch/org/grundlagen/00563/00564/00659/index.html?lang=en	http://www.bakom.admin.ch/org/grundlagen/00563/00564/00659/index.html?lang=en
7.	National soft law / industry standards	standardized porting process per number type for all operators	standardized porting process per number type for all operators
8.	ACQ or onward routing	onward (mandatory) and ACQ (optional)	onward (mandatory) and ACQ (optional)
9.	Regulated porting time	max. 5 working days for the donor to respond to a porting request by the recipient	max. 5 working days for the donor to respond to a porting request by the recipient
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	The recipient is obliged to respect the contractual conditions the customer has with the donor.	The recipient is obliged to respect the contractual conditions the customer has with the donor.
11.	Regulated compensation for extending time limits	no	No
12.	Regulated downtime	as short as possible	as short as possible
13.	Comment on downtime	seamless switchover	seamless switchover
14.	Average port price wholesale	7,70 €	7,70 € (single analog number)
15.	Comment of porting price e.g. are retail prices regulated	not regulated	not regulated
16.	Statistics, % port/churn in 2008	1.5 %	1.7 %
17.	How many portings a month in average	11.350	5.680
18.	Are all numbers portable? E.g. premium rate numbers	yes	Yes
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	23	
20.	How many of the fixed operators are VoIP providers		65
21.	Do you have a publicly available web-site where the ported numbers can be checked	no	No
22.	Can you port a geographical number to another region		Yes
23.	Extra CRDB features	included in the "central entity" (see row 3) and therefore part of the INet-Server	included in the "central entity" (see row 3) and therefore part of the INet-Server

20 Turkey

Turkey		MNP (mobile)	FNP (fixed)
1.	Implementation year	2008	2009
2.	Central entity	NRA	
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	Owned and operated by NRA	
4.	Donor/recipient led	rec	
5.	Comment on process	One stop shopping for porting, customer apply to recipient operator to port the number on his behalf. The recipient will then proceed with the porting process.	
6.	National regulation	Electronic Communications Law numbered 5809 and By-Law on Number Portability http://www.tk.gov.tr/eng/duzenmaineng2.html	
7.	National soft law / industry standards	ICTA Board Decisions	
8.	ACQ or onward routing	Direct routing, ACQ with centralised database (but other methods are not excluded)	
9.	Regulated porting time	Porting process (starting from customer request until the activation in the recipient) is maximum 6 calendar days for mobile number porting and fixed number porting if local loop unbundling is not required, If LLU is required, maximum 7 working days.	
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	Customer who request can port its number whenever he/she wants. Only restriction is she/he has to have first subscription contract with the number range owner older than 3 months. Other contractual obligations does not prevent customer from porting. Bad debt is not a reason for rejection. Also contractual issues do not constitute a problem for porting process but must be fulfilled	
11.	Regulated compensation for extending time limits	Porting requirements are clearly defined in the legislation and in case of violation, administrative fines is applied.	
12.	Regulated downtime	Deactivation at the donor and activation at the recipient should be in +/- 15 minutes from the announced porting time for or all portings, being no more than % 2 of all ports within 1 hour	
13.	Comment on downtime		
14.	Average port price wholesale	In accordance with the By-law on Number Portability, recipient operator can charge the customer for porting. Currently, operators does not charge the customer for porting. As for the administrative charges between the operators, upper limit is defined by the NRA as 2 TL (approx. 0,96 €) for mobile.	Fixed price is not defined yet by the ICTA
15.	Comment of porting price e.g. are retail prices regulated	Administrative charge is the charge paid by the recipient to donor and can be negotiated by the operators. In case of dispute between the operators, upper limit of administrative charge between the operator is defined by NRA.	
16.	Statistics, % port/churn in 2008	16%	negligable
17.	How many portings a month in average	750.000/ in total 163 numbers	
18.	Are all numbers portable? E.g. premium rate numbers	all geographic and non geographic numbers are portable	
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	3 MNO, 11 MVNO	87
20.	How many of the fixed operators are VoIP providers	all fixed operators have right to provide VoIP service	
21.	Do you have a publicly available web-site where the ported numbers can be checked	yes-www.numaratasima.gov.tr	
22.	Can you port a geographical number to another region	no	
23.	Extra CRDB features		

21 United Kingdom

United Kingdom		MNP (mobile)	FNP (fixed)
1.	Implementation year	1999	1997
2.	Central entity	Syniverse	No
3.	Comment on organisation, actors, profit, funding, outsourced companies? Other?	Bilateral porting agreements. Syniverse processes the Porting Authorisation Codes and exchange of information between operators.	Bilateral porting agreements
4.	Donor/recipient led	Donor	Recipient
5.	Comment on process	The consumer must request a Porting Authorisation Code (PAC) from the donor and then provide the PAC to the recipient.	Notification of transfer process. The customer contacts the recipient who notifies the existing provider. The existing provider sends a letter to the customer to confirm the transfer.
6.	National regulation	The right to port is regulated by OFCOM under General Condition 18. It specifies that mobile porting must be completed in two business days.	Also regulated by General Condition 18, but only to the extent that porting should be provided "as soon as reasonably practicable"
7.	National soft law / industry standards	There is an industry process manual which sets out the process, including the time taken to issue a PAC.	Industry process manual sets out timeframe for porting to occur.
8.	ACQ or onward routing	Onward	onward
9.	Regulated porting time	2 (for ports of less than 25 numbers) up to 35 days for larger ports	Not regulated but between 4 and 25 days
10.	Comment on porting time - contractual obstacles to the efficiency of porting? Can customers port even though they have unpaid phone bills?	Yes customers can port even with unpaid bills. This is set out in the industry manual.	Not regulated but customers can port even with unpaid bills.
11.	Regulated compensation for extending time limits	No	No
12.	Regulated downtime	Not regulated but maximum downtime of a few hours.	Not regulated but maximum 15 minutes.
13.	Comment on downtime	The industry's manual sets out the process for the 'porting window' which represents the period when full service is disrupted (specifically incoming calls - the caller will always be able to make outgoing calls)	
14.	Average port price wholesale	£0,00	from £0.49 for geographic £7.17 for non-geographic
15.	Comment of porting price e.g. are retail prices regulated	No retail charge in practice. General Condition 18 specifies that any charges should be 'reasonable'.	
16.	Statistics, % port/churn in 2008	estimated at 3,2%	not available
17.	How many portings a month in average	180 000	not available
18.	Are all numbers portable? E.g. premium rate numbers	Yes - only telephone numbers allocated for use with radiopaging services can not be ported.	
19.	How many mobile operators are active (including MNOs, MVNOs, resellers)	5 MNOs, approx 25 MVNOs and mobile service providers	Several hundred
20.	How many of the fixed operators are VoIP providers	-	Not available
21.	Do you have a publicly available web-site where the ported numbers can be checked	no	
22.	Can you port a geographical number to another region	-	No
23.	Extra CRDB features	-	-